Institute santpau
Biomedical Research | Barcelona

2020 Scientific Report

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Presentation

Research in times of pandemic

It is my great pleasure to present the 2020 Scientific Report of the Institute after a year that was certainly both difficult and challenging for everyone. The social, economic and health impact of COVID-19 in 2020 has been tremendous, directly affecting the health and finances of many colleagues, family and friends. My condolences to those who have lost their loved ones and my support to all those who have suffered the disease themselves.

On adaptation, resilience and initiative

The impact of COVID-19 on the research activity of our institute was also considerable. In the initial months, we had to limit access to the buildings and turn our efforts in supporting the hospital to whom we gave all available PPE, health care professionals and research institute spaces to host oncology patients undergoing active treatment. Many thanks to all our researchers for following the COVID-19 guidelines at all times and for showing understanding of the strict measures that had to be taken.

> *Then, the gradual re-opening came, with a lot of fear but also with the enthusiastic conviction that biomedical research was the key to overcoming the pandemic.*

With this motivation, dozens of research projects on COVID-19 emerged from our researchers, many of them thought out, designed and executed in record time. And much of the ongoing research was continued from computers at home. The effort of internal organization and communication during the lockdown and then during the reopening was enormous under difficult circumstances. For this reason, I would like to thank all members of the IR COVID-19 Crisis Committee (María José Bartolomé, Mercedes Camacho, Míriam Ors, Eva Sanfeliu, Jordi Virgili, Esther Zamora and, later on, Reyes Grases) for the endless days dedicated and for their professionalism. I would also like to thank the rest of the institute's management staff for giving full support to our researchers, often from their dining room at home and in complicated family circumstances. It has been a real source of pride for me to lead the institute under these extreme circumstances and see how all of us, basic and clinical researchers, and management staff, worked hard to move the institute forward and ensure that good science never stopped.

And yet, we continue to move forward toward excellence

Not surprisingly, the results for 2020 have been amazing as you can see and enjoy in this scientific report. The Institute's total income in 2020 (24.6 million euros) increased by 11.7% compared to 2019, mainly thanks to a sharp increase of 17.6% in income from competitive projects and the Government of Catalonia (Generalitat de Catalunya), which consolidated their core fund to a total amount of 2,946,000 euros, 800,000 more than the previous year. I am very grateful to the Generalitat de Catalunya and the General Directorate of Research and Innovation in Health of the Department of Health for trusting

in us. We would also like to thank the Hospital de la Santa Creu i Sant Pau Private Foundation for its contribution in a very complicated financial year due to the pandemic.

The total number of active competitive grants for research projects and for staff recruitment in 2020 reached 386. Our researchers also generated 1,167 publications, 59% in first-quartile journals, with an average impact factor of 5.81, and with joint participation of international authors in 68% of the articles. We continued to increase indicators of innovation, internationalization, and revenue from clinical trials (up to 6.2 million euros).

At the internal management level, 2020 was also marked by three milestones that are intimately related and very important for the future of the institute: the hiring of the new Managing Director, Mrs. Reyes Grases, the reorganization of the management organization chart to better support our researchers, and the approval of the RI Sustainability Plan, our roadmap to 2024. Thank you very much, Reyes, for leading this transformative change of the institute.

On the right track toward sustainability

The aim is to be economically sustainable while improving the five pillars of our Strategic Plan: scientific excellence, innovation and transfer, internationalization and strategic alliances, support services, and fundraising and sustainability. I would like to thank the nearly 100 professionals at our institute who, organized in 10 working groups, made it possible through their effort to draft this Sustainability Plan in a record time. We would also like to thank the Board of Trustees for their confidence in the future of the institute. The process of re-accreditation of the institute by ISCIII also influenced the day-to-day running of the institute during the second half of 2020 under the leadership of our Deputy Director, Ms. Míriam Ors. We have identified all the points for improvement and the path is clearly defined: to make the necessary changes and strategic investments in order to facilitate the work of our researchers and generate a sharp increase in financial revenues over the next four years. Our route is clearly marked and we will keep a firm hand on the helm to bring us safely to our destination.

Science and people first

Ironically, the coronavirus brought us to an abrupt stop just one week after the inauguration of the social interaction area of the IIB-Sant Pau on the terrace of the new building. Social interaction was utterly impossible and even the first Scientific Retreat of the IIB-Sant Pau had to be held on line. But we were able to come together, share our research on COVID-19 and highlight one of the most relevant scientific contributions of the year on biomarkers of Alzheimer disease, published in *The Lancet* by Dr. Lleó's and Dr. Fortea's team. Another milestone that I highlighted during the 2020 Scientific Retreat was the approval of the new scientific areas of the IIB-Sant Pau: (i) cardiovascular diseases, (ii) neurological diseases, neurosciences and mental health, (iii) onco-hematological diseases, (iv) epidemiology, public health and primary care, and (v) translational medicine. Our future scientific activities will be organized around these areas with a focus on the transversal research that we do on advanced therapies, genomic medicine and rare diseases, prognostic and diagnostic biomarkers, better health care, and COVID-19 research.

We have been able to continue working at a level of excellence, each of us in our place, pulling together in the same direction and taking care of each other. The resilience of our institution is a source of pride and strengthens our sense of belonging. Now that we have learnt from this experience we will continue to strive to make our Institute the best place to work and to do good science for the benefit of our fellow citizens.

Jordi Surrallés
Scientific Director IIB Sant Pau

IIB Sant Pau Entities

Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation

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

Hospital de la Santa Creu i Sant Pau Research Institute Foundation

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

Hospital de la Santa Creu i Sant Pau Private Foundation

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

Autonomous University of Barcelona (UAB)

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

Puigvert Foundation

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

Iberoamerican Cochrane Centre

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

Barcelona-Sardenya Primary Care Centre

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

Public Health Agency of Barcelona

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

Blood and Tissue Bank

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

Vertical Areas of Research

Cardiovascular Diseases

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

Genetic, Metabolic and Inflammatory Diseases

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

Haematological and Oncological Diseases

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

Neurological, Mental Disorders and Ageing

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

Uronephrology and Experimental Surgery

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

Transversal Areas of Research

Epidemiology, Public Health and Healthcare Services

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

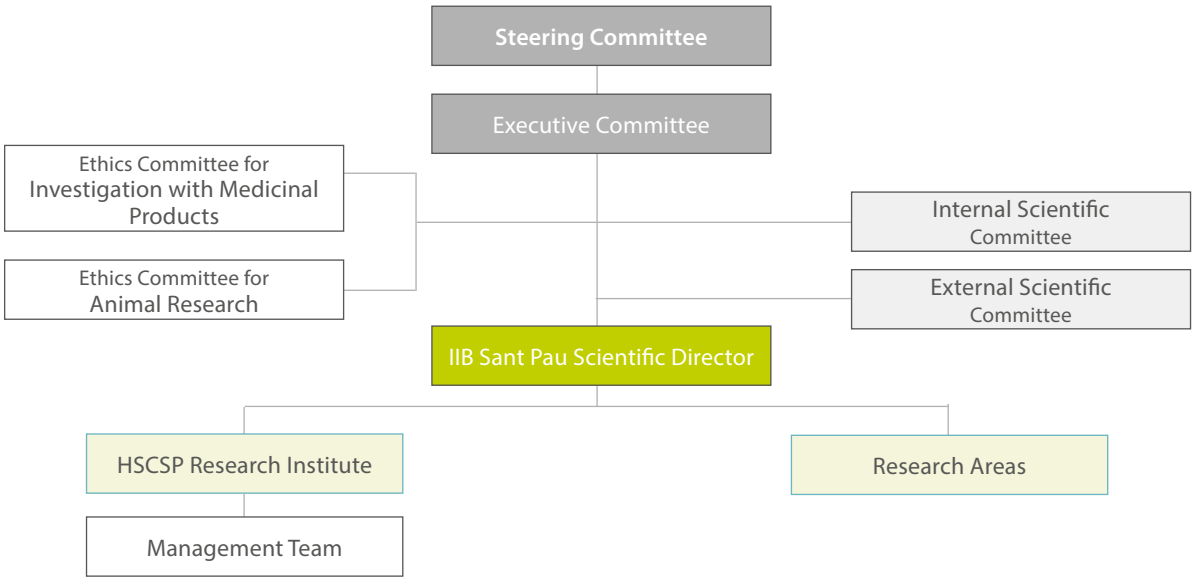
Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

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

Associated Groups

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

Organization Chart



Steering Committee

Chair

Dr. Gemma Craywinckel
Hospital de la Santa Creu i Sant Pau Healthcare Management Foundation

Members

Dr. Jordi Bachs
Hospital de la Santa Creu i Sant Pau Private Foundation

Dr. Armand Sánchez
Autonomous University of Barcelona

Dr. Helena Isábal
Puigvert Foundation

Dr. Joan Garcia
Blood and Tissue Bank

Dr. Xavier Bonfill
Iberoamerican Cochrane Centre

Dr. Carme Borrell
Public Health Agency of Barcelona

Mr. Jaume Sellarès
Barcelona-Sardenya Primary Care Centre

Dr. Jordi Surrallés
Hospital de la Santa Creu i Sant Pau Research Institute

Internal Scientific Committee

Chair

Dr. Jordi Surrallés
IIB Sant Pau Director

Vice-Chair

Dr. Antonio López Pousa
Chair, Clinical Research Ethics Committee

4 members designated by the IIB Sant Pau Manager

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

Dr. Alex Bayes
Molecular Physiology of the Synapse

Dr. Sílvia Mateu
Puigvert Foundation

Dr. Carlos Brotons
Barcelona-Sardenya Care Research Centre

2 members each representing IIB Sant Pau thematic areas

Cardiovascular Diseases

Dr. Juan Cinca Cuscullola
Clinical and Translational Cardiology

Dr. José Martínez
Atherosclerosis and Vascular Biology

Genetic, Metabolic, Inflammatory and Infectious Diseases

Dr. Silvia Vidal
Inflammatory Diseases

Dr. Carlos Guarner
Digestive Diseases

Haematological and Oncological Diseases

Dr. Miquel Quer
Ear, Nose and Throat Cancers

Dr. Agustí Barnadas
Clinical Oncology

Neurological, Mental Disorders and Ageing

Dr. Alberto Lleó
Neurobiology of Dementia

Dra. Maria J. Portella
Clinical Psychiatry

Uronephrology and Experimental Surgery

Dr. Lluís Guirado
Nephrology Research

Dr. Manel Trias
General and Digestive Surgery

Epidemiology, Public Health and Healthcare Services

Dr. Carles Ariza
Evaluation of Public Health Policies and Programmes

Dr. Gerard Urrútia
Clinical Epidemiology and Healthcare Services

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

Dr. José Manuel Soria
Genomics and Bioinformatics for Genetically Complex Disease

Dra. Marta Valle
Pharmacokinetic/Pharmacodynamic Modelling and Simulation

External Scientific Committee

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

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

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

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

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

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

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

Management Team

Scientific Director
Dr. Jordi Surrallés

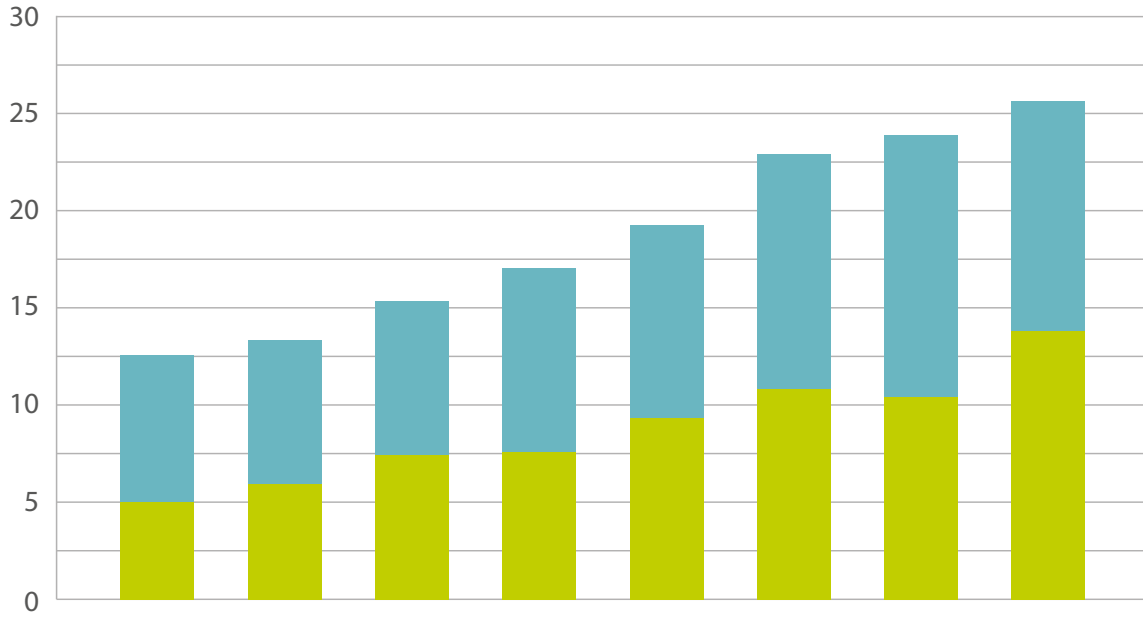
Management Director
Reyes Grases

Deputy Scientific Director
Miriam Ors

Assistant to the Management Team
Eva Sanfeliu

Financial Data

Public/Private Income Summary 2013-2020



	2013	2014	2015	2016	2017	2018	2019	2020
Public	4.99	5.92	7.42	7.58	8.68	11.31	10.57	13.73
Private	7.59	7.42	7.94	9.49	9.70	11.41	12.75	11.84
Total	12.58	13.34	15.36	17.07	18.38	22.73	23.33	25.57

In millions of euros

During the year 2020, we have carried out a Sustainability Plan development and implementation (2021-2024). This Sustainibility Plan was approved by IR Sant Pau Board of Trustees on December 2020 with the aim to curb the negative closing of the last years, in addition to the accumulated own fund loss.

Income Statement year ending 31 December 2020

Income from activities	19.453.615,14
Services	7.063.596,66
Collaborations with partners and sponsors	1.903.909,33
Government grants	9.933.308,70
Other grants, donations and legacies	865.481,86
Repayment of grants, donations, etc.	-312.681,41
Stocks and supplies	-1.852.488,57
Material and equipment for activities	-1.852.488,57
Other income from activities	140.696,69
Personnel expenditure	-11.941.031,22
Salaries	-9.370.438,25
Social security	-2.570.592,97
Other operating expenses	-6.409.180,35
External services	-5.664.235,22
Taxes	-67.728,56
Loss, deterioration and variation in provisions for operations	-659.721,92
Other operating expenses	-17.493,65
Depreciation of fixed assets	-1.467.709,36
Grants, donations and bequests transferred to results	928.814,24
Deterioration and gains/losses on disposal of fixed assets	-14.975,08
Other gains/losses	46.457,66
OPERATIONAL PROFIT/LOSS	-1.115.800,85
Financial income	113.193,55
Financial expenditure	-123.096,67
Exchange differences	-145,95
FINANCIAL PROFIT/LOSS	-10.049,07
OVERALL PROFIT/LOSS	-1.125.849,42

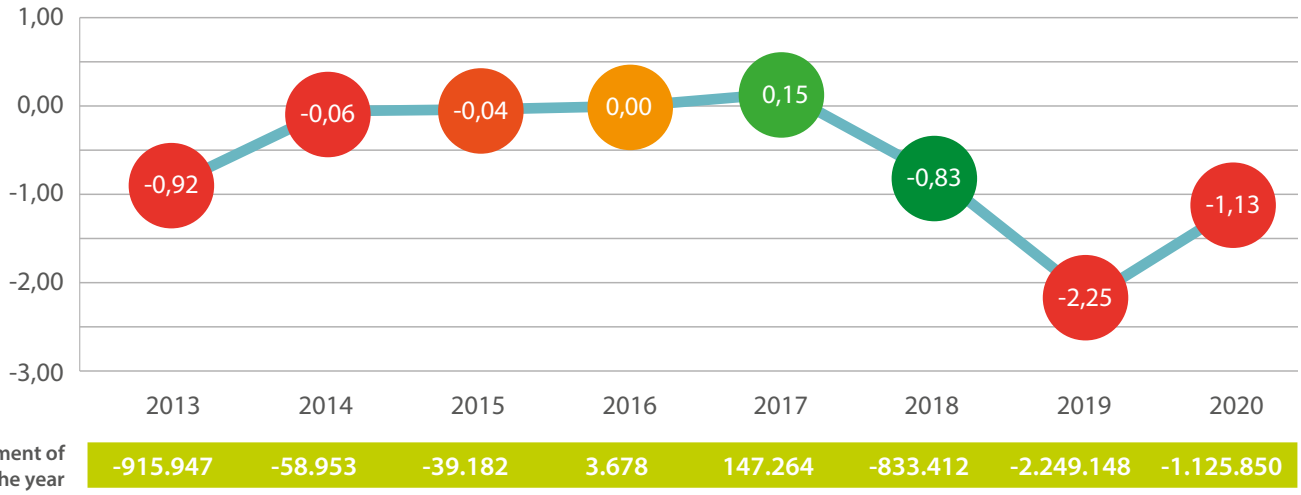
In euros

Evolution of accumulated own funds

Year	Result	Contribution to own funds	Own funds
2008	0,00	3.000,00	1.292,02
2009	0,00		1.292,02
2010	0,00		1.292,02
2011	0,00		1.292,02
2012	-1.683,58		-391,56
2013	-915,95		-1.307,50
2014	-58,96		-1.366,47
2015	-39,19		-1.405,65
2016	3,68		-1.401,97
2017	22,18		-1.379,79
2018	22,52		-1.357,28*
2018	-833,41		-2.190,69
2019	-2.249,14		-4.439,83
2020	-1.125,85		-5.565,68

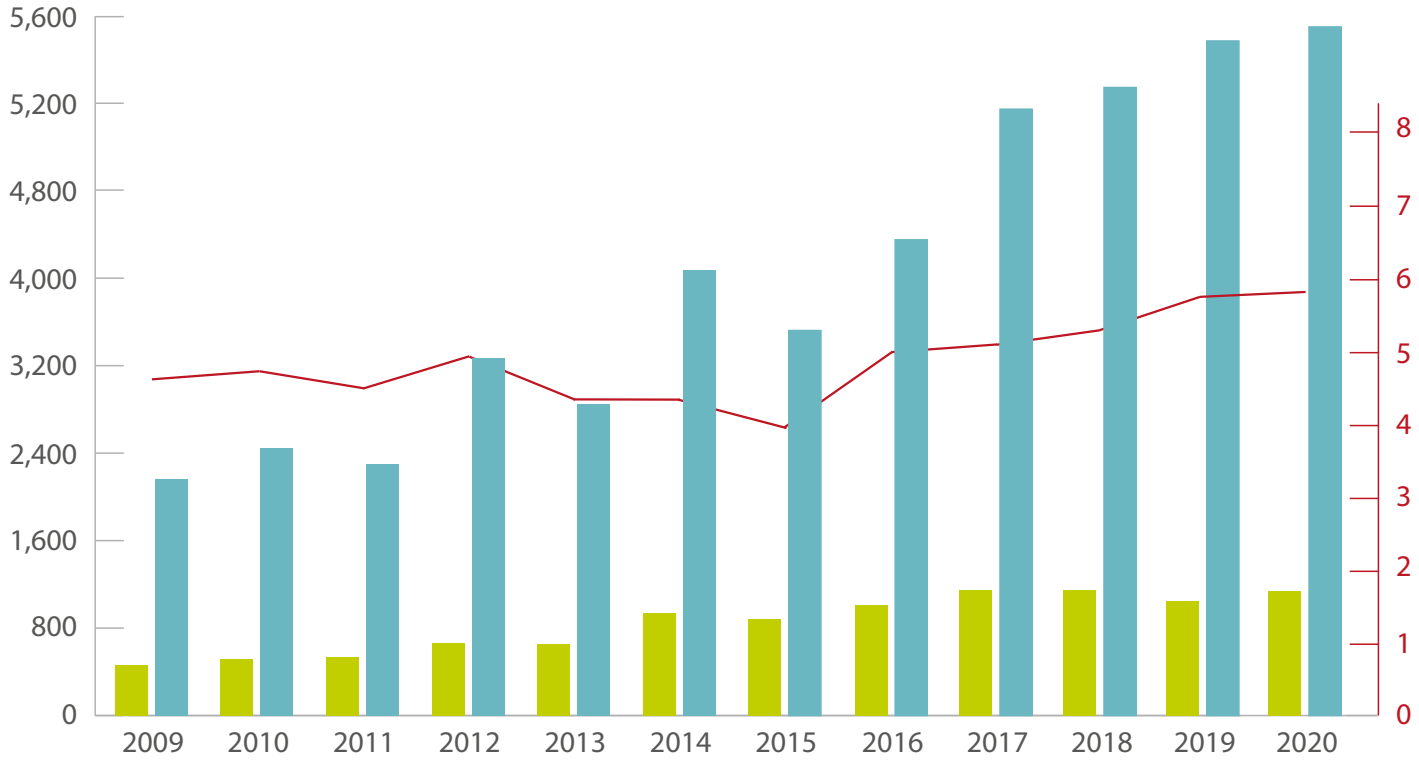
** On Janurary 2018 and as a result of the integration of the ICCC, the IR Sant Pau incorporates to the own funds 22.500€*

Evolution of accounting closing results



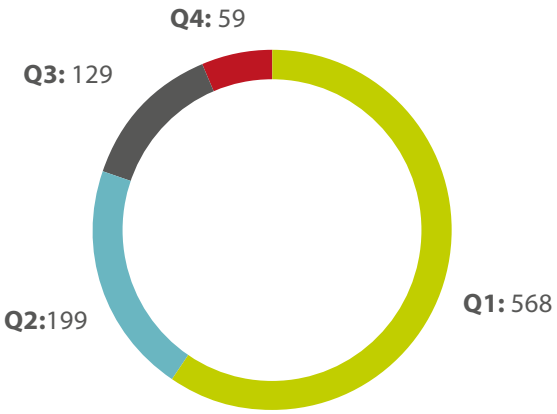
Publications with an Impact Factor and Quartile

Production status



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Publications	461	514	534	664	654	933	804	996	1,167	1,168	1,113	1,163
Total IF	2,158.53	2,448.88	2,298.44	3,269.47	2,848.27	4,074.22	3,927.43	4,338,839	5,170.871	5,220.1160	5,474.2320	5,557.51
Mean IF	4.68	4.78	4.30	4.92	4.35	4.37	3.98	5	5.07	5.19	5.77	5,81

Indexed publications by quartile



Research Resources

Centre	Active		Granted	
	2019	2020	2019	2020
Acadèmia de Ciències Mèdiques	1	1	-	-
AGAUR (Agència de Gestió d'Ajuts Universitaris i de Recerca)	28	29	1	2
American Grants	5	6	2	3
Associació Catalana de Diabetis	-	1	1	-
BIOCAT	1	-	-	-
Conferència Nacional de Degans d'Infermeria	1	1	-	-
Departament de Salut (PERIS)	13	5	-	2
European Commission	5	6	-	5
Fondation Jérôme Lejeune	2	2	1	2
French Muscular Dystrophy Association	-	1	1	-
Fundació Catalana de Pneumologia	1	1	-	-
Fundació Infermeria i Societat	3	2	-	3
Fundació Josep Carreras Internacional	1	1	-	-
Fundació Marató TV3	14	10	2	3
Fundació Privada Daniel Bravo-Andreu	1	1	-	-
Fundació Ramon Pla Armengol	1	-	-	-
Fundació Víctor Grífols i Lucas	1	-	-	-
Fundación BBVA	1	-	-	1
Fundación Española de Arteriosclerosis	-	1	1	2
Fundación Española para el Fomento de la Investigación de la Esclerosis Lateral Amiotrófica	-	1	1	1
Fundación Mutua Madrileña (FMM)	2	3	1	-
Fundación Para la Innovación y la Prospectiva en Salud en España	-	-	-	-
GILEAD	-	2	2	-
Grupo Español de Tratamiento de Tumores Urológicos	1	-	-	-
ISCIII (Instituto de Salud Carlos III)	122	122	25	29
Ministerio de Ciencia, Innovación y Universidades	14	15	7	7
Ministerio de Sanidad, Servicios Sociales e Igualdad	2	1	-	-
Obra Social "la Caixa"				
Organización Nacional de Ciegos de España (ONCE)	1	1	-	-
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	2	2	-	-
Sociedad Española de Cardiología	1	1	1	2
Sociedad Española de Diabetes	1	1	-	1
Societat Catalana d'Endocrinologia i Nutrició	-	1	1	-
Societat Catalana de Cardiologia	1	-	-	-
Societat Catalana de Farmàcia Clínica	-	1	1	-
Societat Catalana de Malalties Infeccioses i Microbiologia Clínica	-	1	1	-
Societat Catalana de Medicina Intensiva i Crítica	1	1	-	-
Societat Catalana de Psiquiatria i Salut Mental	-	1	1	-
Societat Catalano-Balear d'Oncologia	-	1	1	-
	227	223	51	63

Research Training

Centre	Active		Granted	
	2019	2020	2019	2020
AECC (Asociación Española Contra el Cáncer)	2	1	-	-
AGAUR (Agència de Gestió d'Ajuts Universitaris i de Recerca)	6	4	1	2
Departament de Salut (PERIS)	11	7	4	-
FEHH (Fundación Española de Hematología y Hemoterapia)	3	2	-	1
Fundación Francisco Cobos	1	-	-	-
ISCIII (Instituto de Salud Carlos III)	48	52	22	22
MEC (Ministerio de Educación, Cultura y Deportes)	1	1	-	-
Ministerio de Ciencia, Innovación y Universidades	8	6	1	1
SEPAR (Sociedad Española de Neumología y Cirugía Torácica)	1	-	-	-
Sociedad Española de Cardiología	1	-	-	1
	82	**73**	**28**	**27**

Innovation Activity

Patents

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Predicting Behavioural Addictions	Jaime Kulisevsky, Saül Martínez Horta, Juan Marín Lahoz	Europe	EP20383043	01/12/2020	Filed	-	-
Método in vitro para recuperar la expresión del gen F5 que codifica el factor V de la coagulación	Sara Bernal Noguera	Spain	P202030442	14/05/2020	Filed	-	-
MicroRNAs markers of thrombosis conditions	José Manuel Soria, Alba Rodríguez Rius, Juan Carlos Souto	Europe	EP20382151.7	02/03/2020	Filed	-	-
Scaffold proteins and therapeutic nanoconjugates based on Nidogen	Ramón Mangues, Ugutz Unzueta	Europe	EP19383201	26/12/2019	Filed	-	-
Protein nano- or microparticles as artificial inclusion bodies	Ramon Mangues	Europe	EP19382909.0	17/10/2019	Filed	-	-
SS-31 for the prevention and/or treatment of aneurysm	María Galán, Miquel Navas, M. Cristina Rodríguez, José Martínez	-	PCT/EP2020/071197	28/07/2020	Filed	-	-
SS-31 for the prevention and/or treatment of aneurysm	María Galán, Miquel Navas, M. Cristina Rodríguez, José Martínez	Europe	EP19382654.2	30/07/2019	Filed	-	-
Compounds for treating a glycogen storage disease	Noemí de Luna, Eduard Gallardo	-	PCT/EP2020/061469	24/04/2020	Filed	-	-
Compounds for treating McArdle Disease	Noemí de Luna, Eduard Gallardo	Europe	EP19382320.0	26/04/2019	Filed	-	-
Protein nano- or microparticles as artificial inclusion bodies	Ramon Mangues	-	PCT/EP2020/059994	08/04/2020	Filed	-	-
Protein nano- or microparticles as artificial inclusion bodies	Ramon Mangues	Europe	EP19382271.5	11/04/2019	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	-	PCT/EP2020/051048	16/01/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	Europe	EP19382031	17/01/2019	Filed	-	-

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Antibodies specific for glycosilated ApoJ and uses thereof	Lina Badimon, Teresa Padró	-	PCT/ EP2019/078855	23/10/2019	Filed	-	-
Therapeutic use of Afatinib in cancer	Jordi Surrallés, Jordi Minguillón	-	PCT/ EP2019/069039	15/07/2019	Filed	-	-
Therapeutic use of Afatinib in cancer	Jordi Surrallés, Jordi Minguillón	Europe	EP18382527.2	16/07/2018	Filed	-	-
Uso de inhibidores de la tirosina hidroxilasa para el tratamiento del aneurisma de aorta	Cristina Rodríguez, José Martínez, Laia Cañes	US	US 17/252,677	15/12/2020	Filed	-	-
Uso de inhibidores de la tirosina hidroxilasa para el tratamiento del aneurisma de aorta	Cristina Rodríguez, José Martínez, Laia Cañes	-	PCT/ ES2019/070434	21/06/2019	Filed	-	-
Uso de inhibidores de la tirosina hidroxilasa para el tratamiento del aneurisma de aorta	Cristina Rodríguez, José Martinez, Laia Cañes	Spain	ES201830607	21/06/2018	Filed	-	-
DNA damage repair disease therapies	Jordi Surrallés, Jordi Minguillón, Mª José Ramírez	Europe	EP18382322	11/05/2018	Filed	-	-
Combination product for the induction and/or maintenance of general anesthesia	Jordi Riba	Europe	EP2019716181	13/11/2020	Filed	-	-
Combination product for the induction and/or maintenance of general anesthesia	Jordi Riba	-	PCT/ EP2019/059380	2/04/2019	Filed	-	-
Markers of synaptopathy in neurodegenerative disease	Olivia Belbín, Albert Lleó, Àlex Bayés, Juan Fortea, Daniel Alcolea	Europe	EP19709749.6	9/10/2020	Filed	-	-
Markers of synaptopathy in neurodegenerative disease	Olivia Belbín, Albert Lleó, Àlex Bayés, Juan Fortea, Daniel Alcolea	-	PCT/ EP2019/056535	15/3/2019	Filed	-	-
Dispositivo de contención para bebés prematuros (utility model)	Silvia Vicente	Spain	201830301	06/03/2018	Granted	ES 1209916 Y	28/06/2018
Genetic biomarker profiles for endurance sport suitability	José Manuel Soria	US	US 16/767,509	26/11/2018	Filed	-	-
Genetic biomarker profiles for endurance sport suitability	José Manuel Soria	Europe	EP18804351.7	26/11/2018	Filed	-	-
Genetic biomarker profiles for endurance sport suitability	José Manuel Soria	-	PCT/ EP2018/082592	26/11/2018	Filed	-	-
Combination product for the treatment of neurological and/or psychiatric disorders	Jordi Riba	Europe	EP18796407A	26/10/2018	Filed	-	-
Combination product for the treatment of neurological and/or psychiatric disorders	Jordi Riba	US	US20181 6958226A	26/10/2018	Filed	-	-

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Combination product for the treatment of neurological and/or psychiatric disorders	Jordi Riba	-	PCT/ EP2018/079503	26/10/2018	Filed	-	-
Método para la identificación de pacientes con mayor riesgo de desarrollar miocardiopatía dilatada secundaria a mutaciones en el gen Lamina A/C	David de Gonzalo, Concepción V. Llorente	-	PCT/ ES2018/070697	25/10/2018	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	Europe	EP18740231.8	14/2/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	US	US16/631004	4/01/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	Japan	JP2020-523050	14/01/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	India	IN202017 005476	07/02/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	China	CN20188 00596105	13/03/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	Canada	CA3069775	13/01/2020	Filed	-	-
Therapeutic nanoconjugates and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	-	PCT/ EP2018/069303	16/07/2018	Filed	-	-
Nanostructured proteins and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	China	CN20188 00443792	31/12/2019	Filed	-	-
Nanostructured proteins and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	US	US 16/611,102	05/11/2019	Filed	-	-
Nanostructured proteins and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	Europe	EP18726744.8	04/12/2019	Filed	-	-
Nanostructured proteins and uses thereof	Ugutz Unzueta, Ramón Mangues, Mª Virtudes Céspedes	-	PCT/ EP2018/061732	07/05/2018	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	Europe	EP18715625A	29/03/2018	Filed	-	-

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	China	CN20188 0023430A	29/03/2018	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	Canada	CA3058250A	29/03/2018	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	US	US20181 6498813A	29/03/2018	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	Brazil	BR112019 020353	27/09/2019	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	Mexico	MX201901 1567A·	29/03/2018	Filed	-	-
Statin for prevention/ reduction of ischemia-related damage	Lina Badimon, Gemma Vilahur	-	PCT/ EP2018/058158	29/03/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Hong Kong	HK19126491	09/07/2019	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	China	CN20178 0029342.8	12/11/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Russia	RU2018139780	12/11/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	South Korea	KR102018 7032609	09/11/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Mexico	MX2018/01 2580	12/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Australia	AU2017251355	12/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Brazil	BR112018 070971.9	11/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Canada	CA3020666	11/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Japan	JP2018-554391	10/10/2018	Filed	-	-

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	US	US16/092,703	10/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Europe	EP17717159.2	10/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Israel	IL262245	09/10/2018	Filed	-	-
Methods and kits for the diagnosis and risk stratification of patients with ischemia	Lina Badimon, Teresa Padró	Singapore	SG112018 08820Q	05/10/2018	Filed	-	-
Systems and methods to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle	Juan Maria Cinca, Gerard Amorós, Esther Jorge	Germany	DE602001 6039467.7	08/10/2020	Filed	-	-
Systems and methods to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle	Juan Maria Cinca, Gerard Amorós, Esther Jorge	Europe	EP16712341.3	30/10/2018	Granted	EP 3435858B1	08/07/2020
Systems and methods to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle	Juan Maria Cinca, Gerard Amorós, Esther Jorge	US	US16/090203	28/09/2018	Filed	-	-
Prevention and/or treatment of ischemia or ischemia / reperfusion injury	Lina Badimon, Gemma Vilahur, Teresa Padró	Japan	JP2019-500003	13/09/2018	Filed	-	-
Prevention and/or treatment of ischemia or ischemia / reperfusion injury	Lina Badimon, Gemma Vilahur, Teresa Padró	Europe	EP17710542.6	10/09/2018	Filed	-	-
Prevention and/or treatment of ischemia or ischemia / reperfusion injury	Lina Badimon, Gemma Vilahur, Teresa Padró	US	US16/084521	12/09/2018	Filed	-	-
Device for simulating an endoscopic operation via natural orifice	Ramon Rovira	Italy	BI 8020	09/07/2020	Filed	-	-
Device for simulating an endoscopic operation via natural orifice	Ramon Rovira	Spain	EP16810340.6	08/07/2020	Filed	-	-
Device for simulating an endoscopic operation via natural orifice	Ramon Rovira	US	US16/061,101	11/07/2018	Filed	-	-
Device for simulating an endoscopic operation via natural orifice	Ramon Rovira	Europe	EP16810340.6	11/07/2018	Granted	EP3387635 B1	12/02/2020

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Procedimiento y dispositivo para el aprendizaje y entrenamiento de operaciones de cirugía laparoscópica e intervenciones similares	Ramon Rovira	Spain	P201331528	16/10/2013	Granted	ES2534140 B1	17/03/2016
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Israel	IL227442	11/07/2013	Filed	-	-
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Poland	PL12704711T	13/01/2012	Granted	PL2663336 T3	31/01/2018
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Denmark	DK12704711T	13/01/2012	Granted	DK2663336 T3	27/11/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Portugal	PT2663336T	13/01/2012	Granted	PT2663336 T	15/11/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Spain	ES12704711T	19/07/2012	Granted	ES2646390 T3	09/08/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Europe	EP12704711.6	13/01/2012	Granted	EP2663336 B1	09/08/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	Australia	AU2012206533	13/01/2012	Granted	AU2012206 533B2	31/08/2017
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	US	US 17/026543	21/09/2020	Filed	-	-
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	US	US 16/287583	27/02/2019	Granted	US10813975 B2	27/10/2020
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	US	US 15/402795	10/01/2017	Granted	US10265371 B2	23/04/2019
Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells	Ramon Mangues, Ugutz Unzueta, Virtudes Céspedes	US	US 13/979560	01/11/2013	Granted	US9580468 B2	28/02/2017
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Japan	JP2011540141	13/06/2011	Granted	P1133JP00	07/01/2016

Title	HSCSP RI author(s)	Territory	Application number	Filling date	Status	Grant number	Grant date
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Canada	CA2745972	06/06/2011	Granted	CA2745972	11/04/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Israel	IL213408	06/06/2011	Granted	IL213408	30/09/2017
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Cyprus	CY141100802T	03/10/2014	Granted	CY1115601 T1	04/01/2017
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Croatia	HRP20140804T	25/08/2014	Granted	HRP20140 804T1	07/11/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Slovenia	SI200931018T	15/12/2009	Granted	SI2379114T1	28/11/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Portugal	PT09768395T	15/12/2009	Granted	PT2379114E	06/10/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Denmark	DK09768395T	15/12/2009	Granted	DK2379114 T3	29/09/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Poland	PL09768395T	15/12/2009	Granted	PL2379114 T3	31/12/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Turkey	P1133TREP	06/06/2011	Granted	TR2014117 35T4	23/02/2016
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Europe	EP20090768395	15/12/2009	Granted	EP2379114 B1	09/07/2014
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	US	US13140347	15/12/2009	Granted	US9023370 B2	20/12/2015
Conjugates comprising nanoparticles coated with platinum containing compounds	Òscar Gallego	Spain	E09768395	15/12/2009	Granted	ES2505890 T3	10/10/2014
Blood-based assay for dysferlinopathies	Isabel Illa, Eduard Gallardo	Canada	CA2468431	26/05/2004	Granted	CA2468431C	28/06/2011
Blood-based assay for dysferlinopathies	Isabel Illa, Eduard Gallardo	US	US10/306662	27/11/2002	Granted	US7172858 B2	06/02/2007
Blood-based assay for dysferlinopathies	Isabel Illa, Eduard Gallardo	Japan	JP2003547654A	27/11/2002	Granted	JP4282483 B2	24/06/2009

Spin off/Start-up

Tax number	Business name	Type	Constitution date	Licensed technology
B01686518	Exheus S.L	Spin-off	30/06/2020	Genetic biomarker profiles for endurance sport suitability
B-66970088	Nanoligent S.L.	Start-up	13/03/2017	New therapeutic product in the oncology area, especially in the treatment of metastasis.
B-67079186	Glycardial Diagnostics S.L.	Spin-off	15/09/2017	Apo J-Glyc as a novel biomarker for the diagnosis and prognosis of myocardial ischemia
B-66963257	Blumentech S.L.	Spin-off	01/03/2017	Pharmacological therapies for psychiatric and neurological patients
B-66663303	Surgitrainer S.L.	Start-up	15/03/2016	Method and device for learning and training operations laparoscopic surgery and similar procedures

Other IP

Type	Title	Author(s)	Register date
Trademark registration	Iberliferisk	Carles Brotons	27/03/2019
Trademark registration	SWADDY	Silvia Vicente	12/02/2019
Intellectual Property registration	Diseño, desarrollo, integración, implementación y contenido de una plataforma tecnológica para mejorar el soporte y monitorización de los pacientes crónicos polimedicados adaptado al paciente trasplantado cardíaco (Herramienta mHeart o Nabelia Trasplante Cardíaco)	Mar Gomis, M Antonia Mangues	20/12/2018
Notarial registration	SASMAT-METHER, SASMAT-BUNHER, SASMAT and VSSS-MT Clinical Scales	Jose Pérez de los Cobos	11/07/2017
Trademark registration	m-HEART	Mª Antonia Mangues, Mar Gomis	19/05/2017
Trademark registration	m-resist	Iluminada Corripio	20/04/2017
Notarial registration	DUO QUEST Clinical Scale	Antonia Campolongo	08/04/2016
Notarial registration	Memory Unit Database	Daniel Alcolea, Juan Fortea	30/09/2015
Notarial registration	Parkinson Disease Cognitive Functional Rating Scale (PD-CFRS)	Jaime Kulisevsky, Javier Pagonabarraga	17/07/2015
Notarial registration	Parkinson's Disease - Cognitive Rating Scale (PD-CRS)	Jaime Kulisevsky, Javier Pagonabarraga	17/07/2015

Technology Transfer Agreements

Year	Title contract	Collaborator /Client	Research group
2020	Patent licence agreement	Exheus S.L.	Genomics of Complex Diseases
2020	PD-CRS Scale licence extension	Sanofi-Aventis	Parkinson Disease and Movement Disorders
2019	Clinapsis technology licence (DiGestEpiClin Platform licence extension)	Fundació Institut per l'Excel·lència Clínica i Sanitària	Clinical Epidemiology and Healthcare Services
2019	m-HEART licence	Amgen	Pharmacy
2018	EDC4-KO HEK293T and control cell lines licence	Applied Biomedical Materials	Genome Instability and DNA Repair Syndromes
2018	Patent licence agreement	Adx Neuroscience	Neurobiology of dementia
2017	Patent licence agreement	Glycardial Diagnostics S.L	Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases
2017	Patent licence agreement	Nanoligent, SL	Oncogenesis and Antitumour Drugs
2016	PD-CRS Scale licence	Sanofi-Aventis	Parkinson Disease and Movement Disorders
2016	Surgitrainer and Hystrainer licence	Surgitrainer SL	Reproductive Health
2011	Patent licence agreement	Nanotargeting	Clinical Oncology
2003	Patent licence agreement	Athena Diagnostics	Neuromuscular Diseases

2020 Highlights

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Scientific Achievements

Catalan researchers propose a new protocol for endoscopic pancreas puncture

A group of Catalan researchers, led by the director of the Digestive Endoscopy Unit of the Digestive Pathology Department of Hospital de Sant Pau – IIB Sant Pau, Carlos Guarner Argente, has published an article in *Gastroenterology* which demonstrates that antibiotic prophylaxis is not necessary for ultrasound-guided endoscopic puncture of pancreatic cystic lesions.

22/01/2020 MORE INFO

Antibodies to 'good' cholesterol are elevated in patients with abdominal aortic aneurysm

The Institute of Biomedical Research, IIB – Sant Pau, is participating in a study, published in the *Journal of Clinical Medicine*, which points to the immune response to high-density lipoproteins (HDL) as a pathogenic mechanism in the progression of abdominal aortic aneurysm. The researchers of this study suggest that anti-HDL antibody levels may be a biomarker for the diagnosis and prognosis of this vascular disease.

29/01/2020 MORE INFO

Sant Pau reviews human genetic variability and how it can influence the onset of dementia

Dr. Jordi Clarimón, of the Genetic Unit of Neurodegenerative Diseases at the Sant Pau Research Institute – IIB Sant Pau, and researchers from the ACE Foundation and Marqués de Valdecilla Hospital, have prepared a review of human genetic variability and how it can influence the appearance of degenerative dementias such as Alzheimer's, frontotemporal dementia, dementia with Lewy bodies, or prion diseases.

7/02/2020 MORE INFO

Researchers from Sant Pau, UAB and CIBER-BBN demonstrate the powerful antimetastatic activity of bacterial inclusion bodies that release nanoparticles aimed at metastatic stem cells

Researchers from the Research Institute of Hospital de la Santa Creu i Sant Pau – IIB Sant Pau, the Autonomous University of Barcelona (UAB) and the Centre for Networked Biomedical Research (CIBER) have published an article in *Advanced Materials*, one of the most prestigious international scientific journals in the field of nanomedicine and materials science. The work describes the creation by the researchers themselves of a new pharmaceutical form of subcutaneous administration and sustained release of cytotoxic targeted protein nanoparticles, which selectively eliminate metastatic stem cells, inducing a potent metastasis-prevention effect in a colorectal cancer model with no detectable adverse or toxic effects.

10/02/2020 MORE INFO

Sant Pau joins the International Day of Women and Girls in Science

Tomorrow, February 11, is the International Day of Women and Girls in Science. This initiative promotes activities that, by making visible the work of female scientists, commemorate this day, foster scientific vocations in girls, and help close the gender gap in science. This fourth edition will host more than 1,700 up to February 15.

10/02/2020 MORE INFO

Collaboration agreement between IR Sant Pau-IIB Sant Pau and Psious to carry out clinical trials using virtual reality

The Research Institute of Hospital de la Santa Creu i Sant Pau – IIB Sant Pau and the company Psious have signed a collaboration agreement through which clinical researchers at Hospital de Sant Pau will have at their disposal virtual reality equipment to carry out clinical trials with their patients. Within this collaboration framework, the use of VR in clinical trials of approximately 12 to 24 months' duration is expected, with a variable number of patients (between 200 and 300) depending on the study, and covering a range of diverse diseases. The collaboration begins with the study *Efficacy of virtual reality as a pain and anxiety distraction strategy in hysteroscopy*, led by the team of Dr. Josep Estadella, from the Department of Gynecology and Obstetrics at Hospital de Sant Pau.

18/02/2020 MORE INFO

Sant Pau Intensive Medicine publishes in JAMA

Dr. Jordi Mancebo, Head of the IIB Sant Pau Research Group on Intensive Medicine and Director of the Intensive Medicine Department of Hospital de Sant Pau, is co-author of the study "Effect of Intravenous Interferon β-1a on Death and Days Free From Mechanical Ventilation Among Patients With Moderate to Severe Acute Respiratory Distress Syndrome: A Randomized Clinical Trial", published recently in the journal JAMA. Dr. Antoni J. Betbesé, clinical head of the same department, is a member of the multicenter INTEREST Study Group, which also took part in the study.

24/02/2020 MORE INFO

Sant Pau starts one of the first two trials promoted by the ISCIII to fight COVID-19

The trial will study the use of hydroxychloroquine and azithromycin with or without tocilizumab and, among other objectives, whether these drugs reduce in-hospital mortality and the need for mechanical ventilation in the intensive care unit.

27/03/2020 MORE INFO

Department of Health funds two projects of the Sant Pau Research Institute against COVID-19

The first project of the Sant Pau Research Institute funded by the Department of Health is led by researchers José F. Nomdedeu Guinot and Silvia Vidal Alcorisa and aims to define the effective immune response to COVID-19 by studying antibodies against SARS-CoV-2 in the blood of health care professionals. The second is led by the researcher Ivan Castellví, who plans to identify a potential marker to determine which COVID-19 patients will suffer from worsening respiratory failure.

07/04/2020 MORE INFO

Cochrane has created a global human studies registry on COVID-19 to facilitate research

Cochrane has created a new universal record of human studies on COVID-19 in response to the global challenge posed by the current pandemic. This COVID-19 study register, which already contains over 1,200 studies, is constantly updated with our published or ongoing work, with the aim of facilitating research and decision-making on evidence-based health. It will soon also offer the possibility of searching for relevant metadata and creating alerts about new available studies.

09/04/2020 MORE INFO

Hospital de Sant Pau, QEV Technologies, Nissan, and Eurecat develop a respirator to help supply emerging countries

Hospital de Sant Pau, QEV Technologies engineering, the automobile company Nissan, and the Eurecat technology center have developed the Q-Vent respirator for use in hospital ICUs to alleviate the lack of equipment generated by the COVID-19 pandemic throughout the world. The design of the respirator is intended to contribute to supplying emerging countries, given its performance in terms of accessibility, flexibility, and reliability.

15/04/2020 MORE INFO

Alting collaborates with Sant Pau in the creation of a biobank for research on COVID-19

Grup Immobiliari Alting has made a donation to the Research Institute of Hospital de la Santa Creu i Sant Pau – IIB Sant Pau for the creation of a Biobank of COVID-19 samples that will contribute to its present and future research. The aim of this project is to collect and process samples from SARS-CoV-2 seropositive patients under conditions that ensure quality in the long term, in order to facilitate research on COVID-19 for those researchers who are seeking a drug, vaccine and/or studying the effects of this disease on certain types of patients.

16/04/2020 MORE INFO

Sant Pau identifies regulatory elements of the genes that cause thrombosis

The Complex Diseases Genomics Group of the Hospital de Sant Pau Research Institute – IIB Sant Pau, led by Dr. José Manuel Soria, demonstrates, for the first time, which epigenetic mechanisms are involved in the risk of suffering a thrombotic condition. This study, which will be published in the May issue of the prestigious scientific journal *ATVB* (*Arteriosclerosis, Thrombosis and Vascular Biology*), recognizes the group of Sant Pau scientists as world pioneers in establishing an epigenetic profile of thrombosis.

29/04/2020 MORE INFO

Sant Pau publishes in the *Journal of Clinical Medicine*

A Sant Pau study of the factors that determine aortic diameter in families at high risk of abdominal aortic aneurysm (AAA) reveals two new candidate genes. The article was recently published in the *Journal of Clinical Medicine*: https://www.mdpi.com/2077-0383/9/4/1242

04/05/2020 MORE INFO

Functional alteration of HDL in patients with abdominal aortic aneurysm does not predict disease progression

A new study by Sant Pau researchers attached to CIBERDEM and CIBERCV establishes that patients with severe/advanced abdominal aortic aneurysm (AAA) present a significant reduction in the main cardioprotective function of HDLs, their ability to prevent the accumulation of cholesterol in the macrophages of the arterial wall.

29/05/2020 MORE INFO

Sant Pau has initiated more than 30 research projects on the new coronavirus

The Sant Pau Institute for Biomedical Research (IIB Sant Pau) has initiated more than 30 research projects to combat and learn more about the new coronavirus and COVID-19 disease. The projects are developed in different research areas in order to have a global vision of the disease.

02/06/2020 MORE INFO

Sant Pau Research Institute building obtains U.S. Green Building Council LEED GOLD certification

The building of the Research Institute of Hospital de la Santa Creu i Sant Pau has obtained the LEED GOLD certification from the U.S. Green Building Council, which identifies the building as an example of energy efficiency and sustainability both in its construction and in its useful life and demonstrates the leadership of the certified Institution in favor of energy rationality and the transformation towards a more sustainable building.

16/06/2020 MORE INFO

New pathway discovered to improve the cardioprotective potential of HDL and which is diminished in familial hypercholesterolemia

Researchers in the research group on the Metabolic Basis of Cardiovascular Risk at the Sant Pau Research Institute, attached to CIBERDEM, led by Juan Carlos Escolà-Gil and Francisco Blanco-Vaca, have identified a new metabolic pathway that allows HDLs to transport cholesterol from macrophages in the artery wall and transfer it to LDLs for its subsequent elimination from the body through the liver. The work carried out in collaboration with other Spanish and Finnish researchers has been published in *Circulation Research*.

23/06/2020 MORE INFO

For the first time, Hospital de Sant Pau, the Catalan Down Syndrome Foundation, and the University of Cambridge describe the natural history of Alzheimer's disease in people with Down syndrome

One of the world's leading medical journals, *The Lancet*, published the article 'Clinical and biomarker changes of Alzheimer's disease in adults with Down syndrome: a cross-sectional study', led by the Alzheimer-Down Unit of Hospital de la Santa Creu i Sant Pau and the Fundación Catalana Síndrome de Down (Catalan Down Syndrome Foundation), in collaboration with researchers from the University of Cambridge, United Kingdom, promoted by Fundació "la Caixa".

09/07/2020 MORE INFO

Sant Pau leads the way in the creation of a new nanodrug that blocks the tumor cells of acute myeloid leukaemia without damaging healthy cells

Acute myeloid leukemia is a highly heterogeneous disease and the usual treatment is very aggressive and has severe side effects. In their search for a new, more effective drug, researchers led by the Oncogenesis and Antitumoral Research Group of the Hospital de Sant Pau Research Institute – IIB Sant Pau (Ramon Mangues, Isolda Casanova, and Víctor Pallarès) attached to the CIBER-BBN, have demonstrated the efficacy of the self-created nanoparticle that blocks the spread of leukemia cells in animal models of acute myeloid leukemia and directly attacks tumor cells without damaging healthy ones, thereby minimizing adverse effects.

09/07/2020 MORE INFO

Sant Pau identifies a key cell in the development of amyotrophic lateral sclerosis (ALS)

The Sant Pau Research Institute – IIB Sant Pau Neurogenerative Diseases Research Group, in collaboration with the Hospital Clínic de Barcelona's Neurological Tissues Bank, has published the study "Motor cortex transcriptome reveals microglial key events in amyotrophic lateral sclerosis", in the official journal of the American Academy of Neurology, *Neurology® Neuroimmunology & Neuroinflammation*. The study describes the main molecules that trigger neuroinflammatory processes in amyotrophic lateral sclerosis (ALS). It also discovered, for the first time, a type of cell that is key in triggering the inflammatory response, and which appears in the brains of patients suffering from the disease. The study was largely funded by FUNDELA (Spanish Foundation for the Promotion of Research into Amyotrophic Lateral Sclerosis).

16/07/2020 MORE INFO

Sant Pau researchers discover a mutation that increases the risk of breast cancer almost fourfold

Geneticists from the Hospital de Sant Pau Research Institute – IIB Sant Pau and the IFOM – Instituto FIRC di Oncologia Molecolare of Milan (Italy), led by doctors Jordi Surrallés and Paolo Peterlongo respectively, have discovered that certain rare mutations in the FANCM gene constitute a predisposing factor for developing ER and triple-negative breast cancer, considered to be the most aggressive of the different types of breast cancer and the one with the worst prognosis.

22/07/2020 MORE INFO

Exheus, a new spin-off that analyzes gene expression, using artificial intelligence, to optimize performance, health, and nutrition

Exheus is a recent spin-off born thanks to the research carried out by the Sant Pau Research Institute, the Polytechnic University of Catalonia – BarcelonaTech (UPC) and the company Summit SL, which has brought to market an innovative technology that analyzes gene expression and its alterations, through artificial intelligence, to optimize people's performance, health and nutrition. The spin-off has been set up within the framework of the Venture Builder 'The Collider' program of the Mobile World Capital Barcelona Foundation.

23/07/2020 MORE INFO

Sant Pau Research Institute, member of the Bioinformatics Barcelona Association

The Hospital de la Santa Creu i Sant Pau Research Institute has recently become a member of the Bioinformatics Barcelona Association (BIB), a nonprofit association for education and training, promoting advanced research, knowledge, and technology transfer, stimulating competitiveness and innovation in the industrial sector, and providing greater international visibility in the field of bioinformatics.

27/07/2020 MORE INFO

Sant Pau researchers design a mass sequencing panel for undiagnosed patients with neuromuscular diseases

Thanks to the work coordinated by Dr. Maria Pía Gallano, director of the Genetic Diseases Research Group at the Sant Pau Research Institute, in which researchers from various centers also affiliated to CIBER-ER have taken part, has designed a genetic panel for mass sequencing (NGS) with considerable diagnostic power for people with neuromuscular diseases such as myopathies, muscular dystrophies, and previously undiagnosed congenital myasthenic syndromes.

29/07/2020 MORE INFO

Sant Pau publishes a study on the pathogenesis of COVID-19

A study led by Dr. Pere Domingo, coordinator of the HIV and AIDS Research Group and COVID hospitalization of the Sant Pau Research Institute -IIB Sant Pau and member of the Infectious Diseases Unit of Hospital de Sant Pau analyzes the pathogenesis of COVID-19 as the dynamic interaction between four circles that occur simultaneously. One more step toward understanding the mechanism that the virus uses to bypass the host's immune defense mechanisms, or the mechanisms it uses to harm, which will make it possible to design appropriate strategies to neutralize the dysfunctions or imbalances generated by the virus or by the consequences of the infection.

30/07/2020 MORE INFO

Biological sex has a small but widespread influence on the gene expression of almost every type of human tissue

The Hospital de Sant Pau Research Institute – IIB Sant Pau is taking part in a study published in the journal *Science* that reveals that biological sex has a small but widespread influence on the gene expression of almost every type of human tissue. Genes that are estimated to be expressed at different levels in adult women and men are involved in many different biological processes, including response to medication, control of blood glucose levels during pregnancy, and cancer.

10/09/2020 MORE INFO

Sant Pau takes part in a multicenter study that shows that virgin olive oil enriched with its own antioxidants prevents the accumulation of cholesterol

New research has shown that virgin olive oil enriched with its own phenolic compounds increases the ability of HDL particles (high-density lipoproteins) to transport cholesterol deposited on the arterial walls for subsequent elimination from the body via the liver and intestine. The study, published in the journal *Biomedicines*, was coordinated by researchers from CIBER in the areas of Diabetes and Associated Metabolic Diseases (CIBERDEM) and Physiopathology of Obesity and Nutrition (CIBEROBN), the Research Institute and Hospital de la Santa Creu i Sant Pau, the Hospital del Mar Institute for Medical Research (IMIM), Rovira i Virgili University, the University of Lleida and the Institute of Vine and Wine Sciences-ICVV.

22/09/2020 MORE INFO

Sant Pau publishes a study analyzing thrombosis or pulmonary embolism in patients hospitalized with COVID-19

Researchers from Sant Pau have published an article in *Frontiers in Medicine* (journal of the first quartile of the Internal Medicine area) where they analyze the incidence and predictive factors of pulmonary embolisms or thrombosis in patients hospitalised with COVID-19. The research has concluded that the incidence of 2.6% of pulmonary embolisms or thrombosis in patients hospitalized with COVID-19 is clearly high.

01/10/2020 MORE INFO

Sant Pau publishes a study on muscular dystrophy in *Brain*

An investigation by the Research Groups of the Neuromuscular Diseases Unit (Alonso-Pérez and Díaz-Manera) and of Genetic Diseases (Gallano and González-Quereda), of the Sant Pau Research Institute-IIB Sant Pau, has recently been published in the Brain journal. The results of the study, in which 33 hospitals from 13 European countries participated and which collected clinical and genetic data from 439 muscular dystrophy patients, will help to design new clinical trials in a more rational way, while indicating that those therapies that induce protein expression above 30% can produce a significant change in the natural history of the disease.

08/10/2020 MORE INFO

Sant Pau participates in a phase-2 trial that achieves positive results in a drug to combat the cognitive complications of Parkinson's

Dr. Kulisevsky, director of the Movement Disorders Unit of the Sant Pau Hospital Neurology Department and head of the Parkinson's Disease and Movement Disorders Research Group at the Sant Pau Research Institute, is the principal investigator and international coordinator of a controlled phase-2 drug trial that, for the first time in 20 years, is achieving positive results for cognitive complications in Parkinson's disease. Hospital Sant Pau also took part as a patient recruitment center for the study.

29/10/2020 MORE INFO

Sant Pau will take part in the CARDIOPATCH project

The CARDIOPATCH project, a regional cooperation project (Interreg Sudoe Program) financed through European FEDER funds, will involve Sant Pau. Dr. Lina Badimón and Dr. Gemma Vilahur, from the ICCC Program of the Hospital de Sant Pau Research Institute– IIB Sant Pau, will contribute to the development of functionalized patches with therapeutic proteins and enriched with improved stem cells that aim to promote the regeneration of infarcted tissue.

03/11/2020 MORE INFO

Sant Pau takes part in a study on the impact of COVID-19 on people with Down syndrome

The Memory Unit of the Sant Pau Neurology Department and the Neurobiology of Dementia Research Group of the Sant Pau Research Institute, led by Dr. Alberto Lleó, have taken part in a study on the impact of COVID-19 on individuals with Down syndrome. This study was developed and carried out by the T21RS COVID-19 working group. The report contains information on symptoms, risk factors and outcomes after a diagnosis of COVID-19 in people with Down syndrome.

11/11/2020 MORE INFO

Research at Sant Pau forms part of the project for a diagnostic test to improve the monitoring and care of patients with COVID-19

The team of the Molecular and Therapeutic Pathology of Atherothrombotic and Ischemic Diseases "ICCC Cardiovascular Programme" research group, led by Dr. Lina Badimón, from the Sant Pau-IIB Sant Pau Research Institute, is taking part in the COVIRNA project, which is coordinated by the Luxembourg Institute of Health (LIH). This is one of the 23 research projects that have been awarded within the framework of the Horizon 2020 call for Expression of Interest. The work aims to promote the development of a new diagnostic test to predict the results of COVID-19 for patients and to improve cooperation between European research institutions to strengthen the response to the pandemic.

8/11/2020 MORE INFO

Lídia Puertas and Saray Varona, awarded in the first call for #QueSigaLaCiencia videos of the CIBER

Fighting the bad guys involved in abdominal aortic aneurysm is the challenge that the super-scientists explain in their one-minute video, which received the highest score from the CIBER jury in the #QueSigaLaCiencia call for entries. Lídia Puertas, from the Research Group Regulatory Mechanisms of Cardiovascular Remodeling at the Sant Pau-IIB Sant Pau Research Institute, and Saray Varona, researcher at the CIBER of Cardiovascular Diseases (CIBERCV) at the Spanish National Research Council (CSIC), thus become superheroines fighting this cardiovascular disease. Lídia Puertas and Saray Varona, prizewinners in the first call for videos #QueSigaLaCiencia of the CIBER.

13/11/2020 MORE INFO

Researchers from Sant Pau and FIDMAG, attached to CIBERSAM, carry out the first study in the world in which deep brain stimulation (DBS) is applied to patients with treatment-resistant schizophrenia

The Resistant Schizophrenia Unit of the Sant Pau Psychiatric Department, led by Dr. Iluminada Corripio, the Research Group in Clinical Psychiatry of the Sant Pau Research Institute – IIB Sant Pau, led by Dr. Maria J. Portella, and the Research Group on Severe Mental Disorders of FIDMAG Hermanas Hospitalarias, led by Dr. Edith Pomarol-Clotet, all attached to the Center for Biomedical Research Network in Mental Health (CIBERSAM), have published the first trial in the world on the application of the surgical technique of deep brain stimulation (DBS) in patients with treatment resistant schizophrenia, which suggests that this procedure may be beneficial in some patients who do not respond adequately to any other treatment.

17/11/2020 MORE INFO

Almirall announces collaboration with the Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau and the University of South Australia (Unisa)

AlmirallShare, the open innovation platform of Almirall, SA (ALM), announces two new collaborations with the Research Institute Foundation of Hospital de la Santa Creu i Sant Pau and the University of South Australia (Unisa) with the aim of finding new ways of treating skin cancer and atopic dermatitis.

25/11/2020 MORE INFO

Study led by Barcelona researchers identifies brain changes 20 years before diagnosis of Alzheimer's disease

The Memory Unit of Hospital de la Santa Creu i Sant Pau and the Sant Pau Research Institute, in collaboration with the Alzheimer's and other cognitive disorders Unit of Hospital Clínic, Barcelona – IDIBAPS and researchers of the world consortium The Dominantly Inherited Alzheimer Network (DIAN), have managed to detect brain changes in healthy subjects with no clinical symptoms, which may indicators of the onset of Alzheimer's disease.

26/11/2020 MORE INFO

Exheus receives the Award for Innovative Startup led by women

The spin-off, Exheus, has received the Award for Innovative Startup led by women at the MIT Enterprise Forum Spain, an event promoted by IESE Business School – University of Navarra and the Massachusetts Institute of Technology, whichh serves as a meeting point between startups, corporations, institutions and investors. This is good recognition of the scientific-business work being carried out and the commitment to gender equality of the entire Exheus team and the institutions involved, including the Sant Pau Research Institute-IIB Sant Pau.

27/11/2020 MORE INFO

Sant Pau Research wins CAATEEB's Catalonia Construction Award

The Medical Research Institute of Hospital de Sant Pau – IIB Sant Pau has been awarded this year's Catalonia Construction Prize, in the category of innovation in construction, at the 17th edition of the Catalonia Construction Awards organised by the Barcelona Association of Quantity Surveyors (CAATEEB).

The award in the category of innovation in construction, from the Research Institute, was won by Felip Pich-Aguilera Baurier and Carles Gelpí i Arroyo.

2/12/2020 MORE INFO

Cholesterol-carrying lipoproteins promote the development of cancers related to the endocrine system

Researchers from CIBERBBN, CIBERDEM, Sant Pau Research Institute-IIB Sant Pau review the role of cholesterol-carrying lipoproteins (LDL and HDL) as important factors in the development of tumors of endocrine origin.

09/12/2020 MORE INFO

Final concession resolution: call for ISCIII 2020 support platforms

The Instituto de Salud Carlos III has made public the final grant report for the call for 2020 support platforms for which grants are awarded for the ISCIII Platforms Support Units for R & D & I in Biomedicine and Natural Sciences. the Health of the Strategic Action in Health 2017-2020. There are three projects of the Sant Pau Research Institute-IIB Sant Pau that have been chosen.

21/12/2020 MORE INFO

Scientific Outreach

Following the policy of interaction and visibility of the institute during the recent years, we have worked with the support of the scientific management to help create a well-informed scientific society.

The containment situation during 2020 stopped many of the planned actions. However, we held scientific seminars led by IIB Sant Pau's research groups, scientific and educational lectures among the society, micro-sponsorhip actions and we have received that the Institute visits from high school students and training cycles, and we have supported other students in their research work in order to contribute to critical minds training and to awaken scientific vocations.

- 22 January 2020: "Competición celular y tumorogénesis". Prof. Ginés Morata, Centro de Biología Molecular CSIC-UAM, Madrid.
- 26 February 2020: "La dinàmica mitocondrial i el seu paper en les malalties metabòliques", Prof. Antonio Zorzano, Institut de Recerca Biomèdica (IRB Barcelona).
- 5 March 2020: "Serum Amyloid A in Lipid Transport and Immune Response: Structural basis for a new function of an ancient protein", Dra. Olga Gursky, Boston University School of Medicine, Boston MA USA.
- 11 March 2020: "Transcription factor USF1 deficiency improves cardiometabolic Health, enhances colesterol efflux but has adverse effects on reproductive function", Prof. Matti Jauhiainen, Minerva Foundation Institut for Medical Research, Biomedicum 2U Helsinki.
- 4 November 2020 "Intervencions farmacològiques en la COVID-19" Dr. Pere Domingo, IRISCAT webinars.
- 16 December 2020 d'"Efectos cardiovasculares de la COVID-19" Dr. Josep M Guerra, IRISCAT webinars.

Other outreach activities in which our investigators have participated during 2020 include:

"Dilluns de ciència" (CSIC Residència d'investigadors, Centres CERCA, "Obra social "La Caixa")

- 27 January 2020: Conferència: Genètica i salut al segle XXI. Dr. Jordi Surrallés,
- 2 November 2020: Assajos Clínics. La manera per avançar davant de les malalties. Dra. Rosa M. Antonijoan
- 16 November 2020: Risc de Trombosis associat a la COVID-19. Dr. José Manuel Soria
- 23 November 2020: "El llag camí per descriure una nova malaltia muscular" Dra. Montse Olivé Plana

El Matí i la Nit Europea de la Recerca 2020

- Webinar Session: "L'Institut de Recerca fa front a la pandèmia". Participants: Pere Domingo, José Manuel Soria, Elisa Llurba, Rosa Antonijoan, Jordi Surrallés.
- "PreparatB: una aplicació per a Smartphone per a la preparació prequirúrgica" Míriam Armora, 26/11/2020 https://www.youtube.com/watch?v=BvrN5-cmLEE
- "Els estudis genètics massius en COVID-19 poden ser útils per trobar tractaments. Les iniciatives altruistes internacionals en la genètica del COVID-19". Israel Fernández Cadenas, 27/11/2020: https://www.youtube.com/watch?v=QP8s4b9NgHg
- Xerrada a l'Escola Vedruna Gràcia: "Del pacient a la recerca clínica, model de recerca translacional" José Ignacio Pérez, i Eugènia Mato,
- Xerrada a l'ETP XAVIER: "Com determinem el risc de patir malalties complexes?"Maria Sabater Lleal,
- Xerrada al col·legi Sant Marc:"Genòmica aplicada a les malalties neurodegeneratives" Oriol Dols

Centres civics

- 28 January 2020: La triple A (AAA): el silencioso asesino de Albert Einstein. Dra. Cristina Rodríguez-Sinovas.
- 21 January 2020: Vitamina B3: efecte anti-obesitat d'un nutrient minoritari. Dr. Josep Julve
- 11 February 2020: ALOIS ALZHEIMER: UN PSIQUIATRE QUE VA FER HISTÒRIA.Dr. Jordi Clarimon
- 25 February 2020: La telemedicina en pacients amb insuficiència cardíaca: Una experiència innovadora des del centre d'atenció primària (CAP). Dra. Diana Fernández i la Sra. M Teresa Vilella,
- 18 February 2020: LES DRECERES DE LA SANG, Daniel Guisado, Salut.
- 22 October 2020: "Ictus: abans i després" Abans: Relació entre el colesterol i l'ictus, Elena Jiménez. Després: Rehabilitació i activitat física, Raquel Delgado..

Visits of secondary, high school and training students

- Visita Institucional IES La Guineueta – 7 de febrer de 2020
- Visita Escola Frederic Mistral – 11 de febrer de 2020
- Escola SOPEÑA BARCELONA: ESCOLA DE SECUNDÀRIA I FORMACIÓ PROFESSIONAL - 26 de febrer de 2020
- Visita INS Ferran Casablancas – 2 de març de 2020

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Clinical Guidelines

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Centre for Drug Research (CIM Sant Pau)

Functions:

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

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

Facilities:

Three separate work areas have been designated for the trials:

Healthcare:

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

Logistical support:

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

Management, administration and data processing:

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

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Clinical Trial Documentation Management (AGDAC)

Functions:

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

Facilities:

Several areas have been designated to implement these functions:

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

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Clinical Research and Clinical Trials Unit (UICEC Sant Pau)

Functions:

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

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

Knowledge management:

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

Methodological and statistical support unit:

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

Documentation, archiving, monitoring and follow-up unit:

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

Unit of management and financial management:

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

Ethics Committee for Investigation with Medicinal Products (CEIm)

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Núria Alberich
Robert Belvís
Francesc Jané
Xavier León
Dora Mejías
Indalecio Morán
Estela Moreno
Xavier Orteu
Maria Teresa Ricart
Miguel A. Viciana

The Ethics Committee for research with medicinal products (CEIm) of the HSCSP Healthcare Management Foundation is an independent body that, according to the laws that accredit it, has the mission of ensuring the protection of the rights, safety and welfare of the subjects involved in a research study and providing public assurance of that protection by reviewing the protocol, the suitability of the researchers, facilities, equipment and methods to be used in obtaining and documenting the informed consent of the subjects.

Its specific functions are:

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

CEIm Technical Office

Head of the Technical Office:
Milagros Alonso
malonsoma@santpau.cat

Administrative Staff:
Robert Caballero
Marisol Mogollón
Albert Querol

The CEIm Technical Office is an independent agency whose mission is to protect the rights, safety and wellbeing of persons participating in HSCSP research projects that may entail physical or psychological harm. The CEIm Technical Office evaluates the methodological, ethical and legal aspects as well as any other relevant information regarding all research projects listed in the minutes of the committee's meetings. It also advises researchers at HSCSP and the HSCSP Research Institute regarding the preparation and presentation of clinical research projects.

Functions:

- Receive, log and validate documentation for clinical research projects submitted to the committee for evaluation.
- Arrange and call committee meetings, inform members of the agenda and provide them with copies of protocol summaries and patient informed consent and information sheets.
- Prepare and submit reports to the committee containing a methodological, ethical and legal description and analysis (and any other relevant information) of the research projects listed in agendas.
- Act as a reference point in communications with and between researchers, sponsors, medical administrators and managers and healthcare authorities regarding all aspects of the activities of the committee and of the research projects evaluated by the committee.
- Prepare and sign the reports of the committee and communicate its decisions to the corresponding sponsors and researchers.
- Prepare the minutes of meetings and distribute them to committee members within the established period.
- Manage all documentation associated with the operations and activities of the committee and with the research projects evaluated by the committee.
- Manage contracts for all clinical studies to be performed at HSCSP.
- Certify the actions of the committee.
- Prepare the annual report of the committee.
- Ensure compliance with the SOPs of the committee.

Finance Department

Coordinator:
Hilda Herrero
hherrero@santpau.cat

Staff:
Lorena Bustamante
Carles Caparrós
Ana Espallargas
Rafael Fernández
Núria García
Rosa M. Garcia
Soraya González
Gerard Marimón
Sandra Parera
Laura San Martín
Héctor Sánchez
David Sanfeliu

Functions:

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

Projects Unit

Coordinator:
Fabiola Fernández

Staff:
Eva de la Vara
Amanda García
Eva José
Marta Lorente

Functions:

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

Knowledge Management Unit

Coordinator:
Montserrat Campmany
Mcampmany@santpau.cat

Staff:
Cati Pérez

Functions:

- Manage information of IIB Sant Pau research groups staff and some information of the clinical trials.
- Suport the IIB Sant Pau researchers in the use of the sofware of the IIB Sant Pau Intranet and elaborate proposals for its improvement based on the detection of new needs.
- Work up monitoring indicators of IIB Sant Pau research for evaluation, according to specific requirements, and answer requests regarding IIB Sant Pau scientific activity.
- Advise on bibliometrics, scientific publications and open access.

Quality Assurance Unit (QA)

Coordinator:
Marta Mitjà
Mmitja@santpau.cat

Staff:
Agostina Robledo

Functions:

- Establish mechanisms to assess quality and best scientific practices at IIB Sant Pau, focusing on continuous improvement and excellence goals.
- Implement policies to improve quality under GMP, GCP, GLP, ISO 9001 and UNE 166002 standards.
- Lead the quality assurance program at IIB Sant Pau, including:
  - Advanced therapy research at the clean room.
  - Scientific platforms services.
  - Clinical trials at CIM Sant Pau-Phase I unit.
- Quality system management monitoring.
- Perform internal regulatory compliance audits.
- Coordinate, oversee and follow up of the external Inspections /audits from:
  - Public administration (eg: Catalan government, Spanish Medicines and Medical Devices Agency, etc.).
  - Clinical trial promoters.
  - Certification entities.
- Provide support for the implementation of a quality management system in other areas.
- Coordinate GMP and ISO quality committees.
- Provide technical support in the design of the IR-HSCSP new clean room.

Legal Advice and Public Procurement Unit

Coordinator:
Sílvia Ribas
sribas@santpau.cat

Staff:
Uxue Moreno

Functions:

The Legal Advice and Public Procurement Unit of IR Sant Pau is responsible for overseeing and supporting the institute in all its areas, in order to ensure the correct compliance with established legal regulations, offering advice both at a preventive and resolutive level, in all branches of public and private law (civil, commercial, administrative, labor law, criminal compliance, the transparency law, etc.).

With regard to the General Data Protection Regulation (GDPR), the unit ensures correct data processing, both, internal and external, and validates the functions of the protection delegate. Before this unit was created, both these tasks were outsourced.

The legal unit is also responsible for contracting works, services and supplies required by the foundation, in accordance with the procedures and regulation of the Public Sector Contracts Act.

Transfer and Innovation Unit

innovacio@santpau.cat

Coordinator:
Miriam Ors
mors@santpau.cat

Staff:
Daniel Callau
Lourdes Gaig
Natalia Ichaso

Functions:

- Facilitate collaboration between institute's research groups and industry.
- Support to public and private funding of technology development projects.
- Support the submission of European projects.
- Analysis of the business viability of technological projects.
- Intellectual property protection.
- Technology transfer.
- Support the creation of spinoffs and startups.
- Legal support for agreements with third parties.

Infrastructure, Scientific and Technical Services Platforms

Coordinator:
Jordi Virgili
jvirgili@santpau.cat

Staff:
Pau Escartín

Functions:

- Coordination of scientific platforms.
- Evaluation of the use of spaces by research groups, platforms and support units.
- Management of spaces and infrastructures to respond to the needs of groups and support units.
- Coordination of the Biosafety Committee.
- Building management. Monitoring of maintenance and repair incidents.

microscopia@santpau.cat

Coordinator:
Esther Peña
epena@santpau.cat

Microscopy

Equipment:

The Microscopy Unit covers the entire spectrum of advanced microscopy applications. The unit is equipped with two confocal multispectral microscopes: Leica SP22 and Leica SP5 AOBS with high-resolution scanning systems and high-speed tandem scanning, FLIM/FCS modules and time-lapse incubation systems.

The service also includes:

- Zeiss digital time-lapse epifluorescence microscope equipped with a polarizing system.
- Olympus inverted fluoresce microscope set up for side-by-side viewing.

We provide advice in the initial experiment planning, training of researchers on the instruments, and assistance with the subsequent data analysis.

The facility is certified to ISO 9001:2015.

Animal Experimentation Service

estabulari@santpau.cat

Director of Animal Research Facilities:
Laura Casaní
lcasani@santpau.cat

Manager of Animal Research Facilities:
Sergi Florit (Animal Welfare Advisor)

Staff:
Fanny Cevallos
Ángel Juncosa
Lorena Masiá
Jeanneth Saltos

The Animal Experimentation Service is the area dedicated to the housing and care of experimental laboratory animals and to performing the experimental procedures that use them. The SEA has ISO 9001: 2015 certification and guarantees compliance with legal and ethical laws relating to the use of animals for experimentation and for other scientific purposes. It is officially registered as a center for the breeding, supply and use of experimental animals (B9900067 and REGA ES080190036528), and it is authorized to house and work with genetically modified organisms (A / ES / 08/21 and A / ES / 08 / I-14). The staff of the SEA are officially trained and accredited in the following specialties: Welfare and Animal Health Specialist, Advisor on Animal Welfare, Animal Technicians and Caregivers.

Translational research requires the responsible use of experimental animals and reproducibility of results. The use of animals of high genetic and health quality and their use, maintenance and wellbeing in appropriate facilities are essential to obtaining these results. The SEA provides its services to house the animals in the right conditions and also to advise and give specialized support to the researchers in the performance and design of experimental procedures and techniques. The SEA has recently acquired a new in vivo imaging system (Spectrum CT) with a FEDER grant and a software solution that will help to improve the management of the animal facility and animals, thus facilitating the activities of researchers and ensuring the traceability of data.

The SEA consists of two separate buildings:

> Conventional Facility, with a single floor with an area of 650 m^2, designed according to the provisions of Decree Law 214/1997 and Royal Decree 53/2013. It has the necessary rooms to house up to 40 pigs, 114 rabbits, 350 rats and 2,500 mice in conventional conditions, and 90 rats and 2200 mice in SPF or Special Pathogen-Free conditions (individually ventilated cages in a positive-pressure room).

The SEA facility has work rooms for rodents and rabbits, and 4 experimental operating theaters for pigs. It also has advanced medical equipment for small animals: live fluorescence and bioluminescence (IVIS Spectrum), high-frequency ultrasound (Vevo2100), intravital microscope, flow measurement equipment and probes, ECG monitor, NIP equipment, mechanical ventilators, anesthesia equipment with sevoflurane/ isoflurane, surgical microscopes, etc. For the large animals, the SEA has multiparameter monitors, defibrillators, anesthesia equipment with sevoflurane/ isoflurane, mechanical ventilators, x-ray equipment (Philips and Siemens), trans-echocardiography and transesophageal echocardiography equipment (Philips iE33), intravascular echocardiography (Siemens Acuson), real-time 3D imaging equipment (CartoXP), radiofrequency ablation equipment, 12-lead ECG, etc.

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

> The Biomodule-SPF is a barrier area of 30 m^2 that can house up to 400 immunosuppressed mice. The entrance to the installation is through an air shower for people or an SAS of peroxide for materials. Work with animals is carried out under a biosafety hood, and it has a preclinical in vivo imaging system for fluorescence and/or bioluminescence with computed tomography (IVIS Spectrum CT) and inhalation anesthesia equipment.

In 2020, 3,244 laboratory animals were used in research at the SEA: 103 pigs, 269 rats, and 2872 mice. The main areas of research that used these animals were human cardiovascular diseases, oncology, human respiratory diseases, human nervous and mental diseases, metabolic syndromes, and neuromuscular diseases.

The facility is certified to ISO 9001:2015.

President:
Laura Casaní

Secretary:
Sergi Florit

Members:
Sandra Camino
José M. Guerra
Esther Peña
Cristina Rodríguez
Elisabet Sánchez
Gemma Vilahur

Ethics Committee for Animal Research (CEEA)

The Ethics Committee for Animal Research (CEEA) of the HSCSP Research Institute is an independent body that, according to the current legislation on laboratory research animals (European Directive 2010/63/EU, Spanish RD 53/2013 and Catalan Decree 214/1997), serves as an expert and advisory committee in the area of animal experimentation, with members drawn from various disciplines – basic research, veterinary medicine, animal welfare, and human medicine. No animal research can be carried out at the IRHSCSP animal facilities without CEEA approval.

The working guiding principles of this committee are good science and good animal welfare, based on the 3Rs principle: replacement, refinement, and reduction.

The functions of the Ethics Committee for Animal Research are the following:

- Reporting favorably on the implementation verifying the suitability of the procedure in relation to the objectives of the study, the possibility of achieving valid results with the minimum number of animals, the consideration of alternative methods to animal use and the suitability of the selected species.
- Ensuring that animals do not suffer unnecessarily and that, when needed, they are given analgesics, anesthetics or other methods to eliminate pain, suffering or distress.
- Supervising that humanitarian euthanasia methods are used.
- Ensuring that personnel involved in the procedure are qualified to perform the assigned tasks.
- Reviewing already assessed procedures or suspending those procedures already initiated that do not comply with the requisites established by the protocol.

In 2020, the CEEA evaluated 14 new research projects using laboratory animals and reviewed modifications, fulfilled requirements and assessed retrospective evaluations in a further 24 pre-evaluated research projects.

Biobank and Immunohistochemistry Platform

Elena Serrano
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Biobank Scientific Director and Immunohistochemistry Platform Coordinator

IR-HSCSP Node:

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Staff:
Daniel Carbajosa
Sabina Cisa
Iris Rodríguez
Iván Samblas
Alba Sanchez

Fundació Puigvert Node:

Node Coordinator:
Elisabet Ars

Staff:
Laura Lorente

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

It is composed of five main sections:

- Blood and fluids: samples of hematological neoplasias, respiratory, psychiatric, and neurological diseases. Processing is performed in the biobank's BSL2 laboratory at IR-HSCSP's node of the IIB Sant Pau Biobank.
- COVID19 biobank. Samples from COVID-19 patients. Processing is performed in the biobank's BSL2 laboratory at IR-HSCSP's node of the IIB Sant Pau Biobank.
- Urological, nephrological, and andrological diseases. Processing is performed in the F. Puigvert node of the IIB Sant Pau Biobank.
- Tumor bank: Tumoral and non-tumoral tissue samples from patients with neoplasia.
- Histopathology laboratory: tissue processing, paraffin and OCT-block preparation, block cutting (microtome and cryostat), automatic immune-staining, histological staining, special staining, FISH staining, tissue microarray, high-resolution slide scan.

Equipment:

- BSL-2 II A cabinet, inverted microscope, TC automated cell counter, refrigerated centrifuge, refrigerated microfuge, computer system for managing samples and data, automated molecular extraction (Qiacube, Qiagen), controlled freezing ramp
- Liquid nitrogen tanks, -20ºC freezer, -80ºC freezers with safety systems
- Tissue processor VIP Jr (Sakura), paraffin tissue embedding console system (Sakura), microtome (Microm), cryostat (Leica), Automated Immunostaing System (DAKO AS 48), Semiautomatic tissue arrayer (Galileo), Digital slide scanner Pannoramic Midi (3DHistech), microwave tissue processor (KOS).

Grants:

- ICO Agreement (Oncology Director Plan for members of the Catalan Network of Tumour Banks) € 14,000.

citometria@santpau.cat

Coordinator:
Marta Soler
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Staff:
Lia Ros

Cytomics Platform

At present, flow cytometry is a fundamental tool for research groups. Flow cytometry studies the morphological characteristics of cells and their antigenic, biophysical, or biochemical characteristics. A cell sorter is also equipped with sorting and collection modules for particles of interest. The most important applications of flow cytometry include those relating to the study of cell surface receptors, nuclear and cytoplasmic antigens, DNA content, enzyme activity, cell integrity and membranes permeability and calcium flows.

The facility is certified to ISO 9001:2015.

Equipment:

- Cytometer analyser:
  - Miltenyi Biotec MacsQuant 10: 3L, 8 fluorescence parameters
  - Miltenyi Biotec MacsQuant 16: 3L, 14 fluorescence parameters
  - Miltenyi Biotec VYB: 3L (1YG), 8 fluorescence parameters
  - BD FACSCanto II: 3 lasers, 8 fluorescence parameters
  - BD FACSCalibur: 2 lasers, 4 fluorescence parameters
- Cytometer cell sorter:
  - BD FACSARIA I: 3 lasers, 9 fluorescence parameters
  - Miltenyi Biotec Automacs Pro: magnetic cell separator
- Luminex Technology:
  - MAPGIX: up to 50 analytes

Functions:

- Train new users in the use of the equipment.
- Help with the experimental design, supervision and monitor the experiments when necessary.
- Ensure that the equipment is in good condition (calibration/verification/maintenance).
- Carry out private projects.
- Authorize access to platform areas and ensure compliance with regulations in the facility.

Genomics and Transcriptomics Platform

The Genomics and Transcriptomics (GT) Platform is a core facility that offers service, assistance, and equipment to provide support to researchers for developing several projects related to:

- Nucleic acids quality control and quantification
- Gene Expression
- Epigenetic profiling
- Cytogenetics
- Genotyping
- Sequencing
- DNA Fragment Analysis
- Cell line authentication

The facility is certified to ISO 9001:2015.

Specific equipment:

- Hybridization Microarrays: Affymetrix array platform (upgrade 7G) (Thermo Fisher Sci).
- qPCR: 7900HT Fast Real time PCR system (Applied Biosystems, Thermo Fisher Sci).
- Next Generation Sequencing. Ion GeneStudio S5 sequencer, Ion OneTouch ™ System (Thermo Fisher Sci).
- Sanger Sequencing: 3130xl Genetic Analyzer capillary electrophoresis sequencer (Thermo Fisher Sci).
- Nucleic acids quality and quantity assessment: Bioanalyzer 2100 (Agilent Tech), Nanodrop 2000 (Thermo Fisher Sci), Qubit 3.0 (Invitrogen. Thermo Fisher Sci).

General equipment:

- Precision weighing scales (Sartorius).
- Infinite M200 (Tecan) microplate reader: spectrophotometer, fluorometer, luminometer.

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transcriptomica@santpau.cat

Coordinator:
Sandra Camino
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Clean Room Platform

The objective of the clean room platform is the development and manufacture of advanced therapy drugs. All operations are carried out under the correct manufacturing standard (GMP).

Equipment:

- BSL-2 cabinets, inverted microscope, TC automated cell counter, refrigerated centrifuge, microfuge, hypoxia incubators, fridge and -20 ºC combi.

Functions:

- Development of GMP drugs for patient treatment under clinical assays.

Coordinator:
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Coordinator:
Estefania Segalés
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Staff:
Margarita Domingo

Cell Culture Service

Currently, in vitro cell techniques are a fundamental tool for research carried out by a wide array of scientific groups. The IR Cell Culture Service offers a suitable infrastructure for producing primary cultures and cell lines at different biosafety levels (BSL2 or BSL3), as well as bacterial cultures at biosafety level I.

The facility is certified to ISO 9001:2015.

In order to ensure proper operation and attention to researchers, the service includes the following:

- Maintenance of equipment (biosafety cabinets, CO_2 incubators, centrifuges, thermostatic baths, inverted microscopes, etc.).
- Sterilization of solid and liquid material.
- Removal and management of waste.
- Detection of mycoplasma in samples.
- Control of surface contamination.
- Supervision of periodic cleaning procedures.
- Control of personnel access.

The service is structured in several experimental areas that are in separate locations, with an approximate extension of 400 m^2. The BSL1 room is available for bacterial cultures with laminar flow cabinets, ovens, spectrophotometer, centrifuge, and agitators. There are two BSL2 laboratories and one BSL3 laboratory for eukaryotic cell cultures, equipped with biosafety cabinets, CO_2 incubators, thermostatic baths, centrifuges, refrigerators and freezers. There are inverted, binocular and fluorescence microscopes equipped with image capture systems, automated cell counters, a particle counter (Coulter MSIII) and hypoxia workstations. One of the BSL2 laboratories has a room with a cabinet equipped for working with radioactive sources and another one for working with cytostatic products. Washing and sterilization of material is done within the same or adjacent areas.

Coordinator:
Javier Crespo
jcrespo@santpau.cat

Common Spaces Management

The aim of the common spaces management unit is to regulate work in the shared spaces, ensuring their proper use in a safe and quality environment.

The objective of this unit is to provide technical support to research groups. For this purpose, PST a equipment and facilities to researchers that allow them to perform the most modern and state-of-the-art techniques in different research areas. Its organization as a transversal service promotes cooperation and interaction between the different research groups.

This platform is organized in different units and services that offer solutions to different requirements.

The facility is certified to ISO 9001:2015.

Functions:

- To ensure that the equipment in common spaces is clean and in good condition (calibration/verification/maintenance).
- Regulation of the entry and exit of equipment into and out of the IR building.
- To authorize access to shared areas and ensure compliance with regulations in the common spaces.

Equipment:

- The common areas of the IR are equipped with all types of material and facilities to provide researchers of the center with the best experience when performing their work.

Radioactivity Unit

Supervisor in charge:
Javier Crespo
jcrespo@santpau.cat

Functions:

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

Facilities:

The Radioactivity Unit has the following facilities:

- 1 room for radioactive material storage.
- 7 equipped laboratories.
- 1 room for gamma- and beta- counters.
- 1 room for radioactive waste storage.
- 1 room for controlled disposal of radioactive waste.
- Radioactive liquid waste containers for controlled radioactive waste disposal.
- Shielding accessories for radiation safety (table top shields, shielded containers, protective equipment, etc)
- Portable radiation and environmental contamination detectors.
- 1 ventilated rack for in vivo studies.
- 1 chemical safety cabinet for gas extraction.
- 2 vertical laminar air flow cabinets for cell cultures.
- 2 CO_2 incubators for cell cultures.

Areas of Research

56

Area 1
Cardiovascular Diseases

96

Area 2
Genetic, Metabolic and Inflammatory Diseases

150

Area 3
Haematological and Oncological Diseases

170

Area 4
Neurological, Mental Disorders and Ageing

216

Area 5
Uronephrology and Experimental Surgery

242
Area T1
Epidemiology, Public Health and Healthcare Services

268
Area T2
Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

278
Associated Groups

AREA 1

Cardiovascular Dis

58 Clinical and Translational Cardiology

67 Thrombosis and Haemostasis

71 Cardiovascular Biochemistry

74 Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases

80 Biomarkers for Cardiovascular Disease

83 Regulation of Cardiac Rhythm and Contraction

85 Lipids and Cardiovascular Pathology

88 Genomics of Complex Diseases

92 Regulatory Mechanisms of Cardiovascular Remodelling

eases

AREA 1 · Cardiovascular Diseases

Clinical and Translational Cardiology

Coordinator
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Members
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Álvarez García, Jesús (FGS)
Amorós Figueras, Gerard (CIBERCV)
Anglí Ferrándiz, Laia (IR)
Arzamendi Aizpurua, Dabit (FGS)
Barros Membrilla, Antonio José (FGS)
Carreras Costa, Francesc (FGS)
Cinca Cuscullola, Juan (UAB)
Fernández Martínez, Ana (IR)
Garcia-Moll Marimon, Xavier (FGS)
Herráez Nieto, Sílvia (IR)
Ibáñez Carne, Yaiza (IR)
Jiménez Sábado, Verónica (CIBERCV)
Jorge Vizuete, Esther (IR)
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Serra Peñaranda, Antoni (FGS)
Sionis Green, Alessandro (FGS)
Vilades Medel, David (FGS)
Viñolas Prat, Xavier (FGS)
Zegri Reiriz, Isabel (FGS)

Main Lines of Research

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

Scientific Challenges

Electrophysiology

- New experimental models of atrial fibrosis.
- Description of the mechanisms and clinical significance of electrocardiographic changes in patients with acute myocardial infarction, using translational research in porcine heart models.
- Develop animal models for the study of the left bundle branch block.
- Develop clinical applications of myocardial impedance.

Heart failure

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

Ischemic heart disease

- Prognosis for patients with left circumflex coronary occlusion.
- Multidisciplinary treatment of sudden cardiac death.
- Treat complex atherosclerotic coronary artery lesions using interventional techniques.

Valvular heart disease

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

Cardiac imaging

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Vicenta Llorente Cortés - Lipids and Cardiovascular Pathology.
- Leif Hove Madsen - Regulation of Cardiac Rhythm and Contraction.
- Lina Badimon Maestro - Molecular Pathology and Therapeutic of Ischaemich and Atherotrombotic Diseases.
- Jordi Ordóñez Llanos - Cardiovascular Biochemistry. IP: Francisco Blanco Vaca.
- María Poca Sans - Digestive Diseases. IP: Carlos Guarner Aguilar.
- Jordi Surrallés Calonge - Genome Instability and DNA Repair Syndromes.
- Enric Álvarez Martínez - Clinical Psychiatry. IP: Maria Jesús Portella Moll.
- Antoni Capdevila - Radiodiagnostics HSCSP.
- Rafael Serra - Anaesthesiology HSCSP.

External Collaborations

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

- Lisardo Boscá Gomar. Instituto de Investigaciones Biomédicas Alberto Sols (Madrid)
- Juan F. Delgado Jiménez. Hospital 12 de Octubre (Madrid)
- Javier Díez Martínez. Centro de Investigación Médica Aplicada de Navarra
- José Ramón González-Juanatey. Hospital Clínico de Santiago de Compostela
- Julián Pérez Villacastín. Hospital Clínico San Carlos (Madrid)
- Luis Martínez Dolz. Hospital La Fe (Valencia)
- Antoni Bayés Genís. Hospital Germans Trias i Pujol de Badalona
- Pablo García Pavía. Hospital Puerta de Hierro (Madrid)
- Manuel Martínez Sellés. Hospital Gregorio Marañón (Madrid)
- Julio Núñez Villota. Hospital Clínico de Valencia
- Domingo Pascual Figal. Hospital Virgen de la Arrixaca (Murcia)
- Alfredo Bardají Ruiz. Hospital Universitari Joan XXIII (Tarragona)
- Fernando Worner Diz. Hospital Universitari Arnau de Vilanova (Lleida)
- Antonio Ordóñez Fernández. Hospital Virgen del Rocío (Sevilla)
- Pedro Luis Sánchez Fernández. Hospital Universitario de Salamanca
- María Generosa Crespo Leiro. Hospital Universitario de A Coruña

ELEM Biotech

- Blanca Rodríguez. University of Oxford (United Kingdom)
- David Filgueiras Rama. Centro Nacional de Investigaciones Cardiovasculares, CNIC - IISCIII (Madrid)
- Cristóbal Langdon. Hospital Clínic i Provincial de Barcelona
- Paul Iaizzo. University of Minnesota (USA)
- Oscar Camara. Universitat Pompeu Fabra, Barcelona

CompBioMed Project

- Paul Best. CBK SciCon, Somerset (United Kingdom)
- Philippe Bijlenga. Geneva University Hospitals (Switzerland)
- Mike Bodkin. EvoTec, Hamburg (Germany)
- Brendan Bouffler. Amazon AWS, Seattle (USA)
- Enrico Gianluca Caiani. Politecnico di Milano (Italy)
- David Filgueiras. Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC)
- Malcolm Finlay. NHS and UCL, London (United Kingdom)
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TEAM

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Euro CTO Club (chronic total occlusions, CTOs): formed by 60 members, spread among all European countries

Registro Nacional de Trasplante Cardiaco

- Clínica Universitaria de Navarra
- Hospital Universitario Puerta de Hierro (Madrid)
- Hospital Universitario Marqués de Valdecilla (Cantabria)
- Hospital Universitario Reina Sofía (Córdoba)
- Hospital Universitario y Politécnico La Fe (Valencia)
- Hospital General Universitario Gregorio Marañón (Madrid)
- Fundación Jiménez Díaz (Madrid)
- Hospital Universitario Virgen del Rocío (Sevilla)
- Hospital Universitario 12 de Octubre (Madrid)
- Hospital Universitario A Coruña
- Hospital Universitari de Bellvitge
- Hospital Central de Asturias
- Hospital Clínic i Provincial de Barcelona
- Hospital Universitario Virgen de la Arrixaca (Murcia)
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RITMOCORE - Arrhythmias monitoring and comprehensive care

- Liverpool Heart and Chest Hospital NHS (United Kingdom)

GREAT: Global Research on Acute Conditions Team: International Network between 308 experts operating in the management of acute clinical conditions in the field of Emergency Medicine

Other collaborators

- Xavier Rosell. Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya (UPC) (Barcelona)
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- Karim Lekadir. UB - Grupo de investigación en inteligencia artificial aplicada al reconocimiento de imágenes (CRM)
- Gianluca Pontone. Centro Cardiologico Monzino

Active Grants

- Maria Eulàlia Roig Minguell. Adrenergic agonist Treatment in Patients with Chronic Heart Failure and Secondary Pulmonary Hypertension: a Randomized Placebo-Controlled Phase 2 Clinical Trial. MARATO 20151732. Fundació La Marató de TV3. Duration: 2016-2020. 119,500 €.
- Juan María Cinca Cuscullola. Desarrollo de un modelo preclínico para la caracterización electrofisiológica y estructural del infarto de miocardio auricular. PI17/00069. Instituto de Salud Carlos III. Duration: 2018-2021. 66,000 €.
- José María Guerra Ramos. Caracterización Genética del Síndrome del QT Largo Asociado a Fármacos. PI17/00980. Instituto de Salud Carlos III. Duration: 2018-2022. 122,000 €.
- Juan María Cinca Cuscullola. Grup de Recerca Clínica i Translacional en Cardiologia - RCTCAR. 2017 SGR 984. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 35,185.92 €.
- Xavier Viñolas. - Arrhythmias monitoring and comprehensive care. H2020-SCI-2016-CNET: RITMOCORE Horizon 2020. European Commission. Agència de Qualitat i Avaluació Sanitària (AQuAS) – Hospital Sant Pau. Duration: 2016-2020. 903,875 €.
- Xavier Viñolas. Proyecto STOP&GO (Sustainable Technologies for Older People – Get Organised). European Commission. Duration: 2015-2020.
- Juan María Cinca. Collaboration Agreement. Biosense Webster. Duration: 2018-2021. 32,210 €.
- Jesús Álvarez García. Sinai Heart - Advanced Heart Failure Department. Daniel Bravo Private Foundation Grant. Fundación Privada Daniel Bravo. Duration: 2019-2020. 3,000 €/month.

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

Grants Awarded in 2020

- José María Guerra Ramos. Estudio traslacional para caracterizar las alteraciones estructurales y moleculares subyacientes a la reversibilidad de la miocardiopatía inducida por taquicardia. PI20/01702. Instituto de Salud Carlos III. Duration: 2021-2023. 155,000 €.
- Cristian Moreno Lozano. Adaptación y validación al contexto de urgencias de la nursing intensive care-satisfaction scale. PR-430/2020. Fundació Infermeria i Societat, Duration: 2021-2023. 4,000 €.
- Laura Rodriguez Sotelo. Papel pronóstico del número de líneas B mediante ecografía pulmonar en pacientes con infarto agudo de miocardio con elevación del segmento ST. SEC 2020-3, Sociedad Española de Cardiología. Duration: 2020-2021. 22,500 €.
- TIQUE - 965356 - InnovaTIve care services, enhanced with technology, to deliver QUick rEsponses for individuals with advanced heart failure and complex care needs through integrated care. Horizon 2020. European Commission. Duration: 2020-2026. 454,8678.70 €.
- Víctor García Hernando. Beca 2020 - Fellowship Electrofisiología Cardiaca; Asociación Ritmo Cardiaco (Sociedad Española Cardiología) and Johnson & Johnson. Duration: 2020-2021 . 30,000 €.

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

Awards

- Gerard Amorós Figueras. Special Award for Doctoral Studies corresponding to academic year 2017-2018. Academic Committee doctoral programme in Medicine, Governing Council. 14/02/2020.
- RITMO 2020 – Virtual 22-26 Jun 2020:
  - Runner-up 1: Maite Grande Osorio, Carlos Eduardo González Matos, Francisco Méndez Zurita, Maite Bote Collazo, Enrique Rodríguez Font, Concepción Alonso Martín, José María Guerra Ramos, Xavier Viñolas Prat. Evaluación de un protocolo local de clasificación de alertas en la monitorización remota de dispositivos cardíacos implantables. Hospital de la Santa Creu i Sant Pau, Barcelona.
  - Runner-up 2: Desafíos en la adherencia al seguimiento remoto de marcapasos sin cable. Isabel Ramírez de Diego, Santiago García Mancebo, Francisco Méndez Zurita, Maite Grande Osorio, Enrique Rodríguez Font, Bieito Campos García, Zoraida Moreno Weidmann, Xavier Viñolas Prat. Hospital de la Santa Creu i Sant Pau, Barcelona.

Patents

- Amorós Figueras, Gerard; Bragós Bardia, Ramón; Cinca Cuscullola, Juan; García Sánchez, Tomàs; Jorge Vizuete, Esther; Rosell Ferrer, Francesc Xavier; Sánchez Terrones, Benjamín. Devices to assess infarcted myocardial tissue by measuring electrical impedance during the cardiac cycle. EP3435858. PCT/EP2016/056933. International. 27/02/2020.

Transfer Products

- 3D Printing Platform. Technique - Sanitary procedure. Cardiology, Cardiac Surgery and Vascular Surgery Services. IP: José Guerra - Abdel Hakim Moustafa.

Scientific Production

Total Impact Factor: 590.925 · Mean Impact Factor: 7.480

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Diffusion Activities

Dissemination activities to society

- Isabel Zegrí. Grup de Treball d'Insuficiència Cardiaca de la Societat Catalana de Cardiologia. Optimització "acadèmica" del tractament diurètic més enllà de l'art en el maneig de la congestió. Jornada Científica Congestió: Diana en el maneig del pacient amb IC i en la prevenció de les hospitalitzacions. Barcelona, 13 Oct 2020.
- GICCAT (Grup de Treball d'Insuficiencia Cardiaca de la Societat Catalana de Cardiologia). Coordinator: Sònia Mirabet
- Isabel Zegrí. Opciones de tratamiento en la Resistencia Diurética. IV Cardioren Meeting. Madrid 29-30 January 2021.
- Sònia Mirabet. Avançant en pràctiques d'excel·lència en insuficiència cardíaca: com apliquem els nous coneixements? Congrés de la Societat Catalana de Cardiologia 2020.
- Sònia Mirabet¿Qué debe conocer el cardiólogo de un paciente con trasplante cardiaco? Sociedad Aragonesa de Cardiologia. June 2020.
- Sònia Mirabet. Entrevistes #EnTempsDeCovid. Gencat.
- Proyecto "Respuestas en diabetes". Proyecto colaborativo de formación piramidal entre cinco sociedades científicas Fundación redGDPS Dr Josep Franch SEMERGEN-Diabetes presidenta Dra Lopez Simarro Associació Catalana de Diabetis presidente Dr Joan Vendrell Societat Catalana de Endocrinología presidente Dr Manuel Pérez

Maraver Societat Catalana de Cardiología presidente Dr Nicolás Manito. Características diferenciales de la enfermedad CV en la persona con diabetes Dra Sonia Mirabet, Cardiología, Hospital Sant Pau. October 2019

- Seminari de Cardiologia de Les Terres de l'Ebre . Set 2019. "Actualització en insuficiència cardíaca". Epidemiologia de la malaltia al segle XXI. Causes de la insuficiència cardíaca i eines actuals per al diagnòstic Sònia Mirabet Pérez. GRUP DE TREBALL D'INSUFICIÈNCIA CARDÍACA DE LA SOCIETAT CATALANA DE CARDIOLOGIA – GICCAT. Nov 2020. Reptes i nous escenaris clínics en insuficiència cardíaca. Moderadora: Dra. Sònia Mirabet

Scientific dissemination activities

Congresses

- ESC Congress 2020 – Virtual, 29 Aug -1 Sept
  - Alessandro Sionis, Discussant. "Meet the Experts - Mechanical Support Devices in Cardiogenic Shock Following Myocardial Infarction". ESC Congress 2020 – The Digital Experience (27 August - 30 August 2020).
  - I Zegri Reiriz, D Garcia-Cosculella , T Moreno, R Ortega, A Ruiz, N Mesado, F Aran, V Brossa, M Camprecios, L Lopez, E Roig, S Mirabet. Urinary chlorine: a potential biomarker of diuretic resistant patients. European Heart Journal 2020; 41(2):1208.
  - F Mendez Zurita, M Grande Osorio, C Gonzalez Matos, E Rodriguez Font, J Guerra Ramos, C Alonso Martin, B Campos Garcia, Z Moreno Weidmann, I Ramirez De Diego, M Bote Collazo, E Paz Jaen, A Velasco Nieves, J Mogro Carranza, S Garcia Mancebo, X Vinolas Prat. The value of a novel model of remote monitoring alert classification of cardiac implantable devices. Session New Digital Approaches in Cardiology. Session type: Best ePosters.
- Heart Failure Congress. Heart Failure Discoveries – Virtual, June 2020
  - Zegrí Reiriz, A. Ruiz López, R. Ortega Chuela, T. Moreno López, D. García Cosculluela, F. Aran Aran, N. Mesado Batalla, V. Brossa Loidi, L. López López, M. Campreciós Crespo, E. Roig Minguell, S. Mirabet Pérez. Efficacy and safety of initial adjusted high dose of intravenous furosemide bolus in outpatients with acute heart failure. European Journal of Heart Failure 2020; 22(S1):1-242.
  - Zegrí Reiriz, D. García Cosculluela, T. Moreno López, R. Ortega Chuela, A. Ruiz López, N. Mesado Batalla, F. Aran Aran, V. Brossa Loidi, L. López López, M. Campreciós Crespo, E. Roig Minguell, S. Mirabet Pérez. Urinary electrolyte assessment in patients with decompensated heart failure managed on an outpatient basis: clues to identify diuretic resistant patients. European Journal of heart Failure 2020; 22(S1):1-242.
  - M Cobo Marcos, IZR Isabel Zegri Reiriz, PR Paloma Remior Perez, SGG Sergio Garcia Gomez, DGR Daniel Garcia Rodriguez, ARC Alejandra Restrepo Cordoba, FDR Fernando Dominguez Rodriguez, DCC Daniel De Castro Campos, PVM Paula Vela Martin, FHT Fernando Hernandez Terciado, APH Antonio Portoles Hernandez, PGP Pablo Garcia Pavia, JSC Javier Segovia Cubero. Natriuretic response in elderly patients with acute heart failure. European Journal of Heart Failure 2020; 22(S1):1-242.
  - A Antonio Portoles Hernandez, M Cobo Marcos, I Zegri Reiriz, J Vazquez Lopez-Ibor, T Soria Gomez, F Dominguez Rodriguez, LE Escobar, A Restrepo Cordoba, E Montero Hernandez, P Garcia Pavia, A Cortazar Gonzalez, J Segovia Cubero. Effectiveness and safety of intravenous furosemide plus hypertonic saline solution in ambulatory patients with heart failure. European Journal of heart Failure 2020; 22(S1):1-242.
- 81 Congresso Nazionale de la Società Italiana di Cardiologia (SIC) - 17-20 December 2020
  - Alessandro Sionis. "Management of cardiogenic shock in COVID-19 patients". Management Tips in Acute Heart Failure. 81 Congresso Nazionale de la Società Italiana di Cardiologia (SIC). 17-20 December 2020.
- Acute Cardiovascular Care 2020 - 16 December 2020
  - •Alessandro Sionis "Post-ACS Management of Dyslipidaemia: Tips and Tricks from Real World Experiences". Webinar European Society of Cardiology Association for Acute Cardiovascular Care.
- Congreso SEC 2020 – Virtual, 28-31 Oct 2020
  - José Guerra Ramos Funcionalidad y disponibilidad del chaleco desfibrilador cardioversor (WCD) en España. Simposio Satélite. El chaleco desfibrilador cardioversor (WCD): protegiendo a sus pacientes con riesgo de muerte súbita cardíaca.
  - José Luis Martínez Sande, M. Gracia Sandín Fuentes, Xavier Viñolas Prat. Pregunta al Experto. Escenarios para marcapasos sin cables: infección de dispositivo transvenoso, tras ablación del NAV, pacientes nonagenarios. Nuevos modos de estimulación.
  - Armando Pérez de Prado, Concepción Alonso Martín. Panel de expertos. Casos Interactivos. Decisiones difíciles en la prevención tromboembólica en sujetos con fibrilación auricular.
  - Amine Elamrani Rami, Xavier Viñolas Prat, Miguel A. Arias Palomares, Óscar Palazón Molina, Víctor Bazán Gelizo y Josep Mª Alegret Colomé. Efectividad de los fármacos antiarrítmicos tras cardioversión farmacológica o eléctrica de la fibrilación auricular persistente. Comunicaciones Mini Orales.
  - Sem Briongos Figuero, Álvaro Estévez, Luisa Pérez Álvarez, José Bautista Martínez-Ferrer, Enrique García, Xavier Viñolas Prat, Ángel Arenal Maíz, Francisco Javier Alzueta Rodríguez y Roberto Muñoz Aguilera. Impacto de los desfibriladores bicamerales en el riesgo de descargas inapropiadas: análisis específico del papel de los discriminadores. Comunicaciones Orales.
  - Sem Briongos Figuero, Álvaro Estévez, María Luisa Pérez, Enrique García Campo, Xavier Viñolas Prat, Xavier Viñolas Prat, Ángel Arenal Maíz, Francisco Javier Alzueta Rodríguez, Nuria Basterra Sola, Ignacio Fernández Lozano, Roberto Muñoz Aguilera. Influencia de la clase funcional NYHA en el pronóstico a largo plazo de portadores de DAI en prevención primaria de muerte súbita. Comunicaciones Orales.
  - Sem Briongos Figuero, Arcadio García Alberola, Jerónimo Rubio, José María Segura, Anibal Rodríguez, Rafael Peinado Peinado, Francisco Javier Alzueta Rodríguez, José Bautista Martínez Ferrer, Xavier Viñolas Prat, Joaquín Fernández de la Concha, Ignasi Anguera Camos, María Martín, Laia Cerdá Olmos, Roberto Muñoz Aguilera y María Luisa Pérez. Hospital de la Santa Creu i Sant Pau, Barcelona. Seguimiento a largo plazo de una población de 4296 pacientes tras implante de DAI en España: principales resultados del estudio UMBRELLA. Comunicaciones Mini Orales.
  - Adrián Ruiz López, Isabel Zegrí Reiriz, Ricardo Ortega Chuela, Dánae García Cosculluela, Teresa Moreno López, Álvaro Rodríguez Pérez, Fina Aran Aran, Nuria Mesado Batalla, Vicens Brossa Loidi, Laura López López, Marta Campreciós Crespo, Eulàlia Roig Minguell, Sonia Mirabet Pérez. Hospital de la Santa Creu i Sant Pau, Barcelona Eficacia y seguridad de dosis altas de furosemida intravenosa en pacientes con insuficiencia cardiaca aguda manejados en el entorno ambulatorio. 6065-481 - Póster. Rev Esp Cardiol. 2020;73 (Supl 1):923
  - Dánae García Cosculluela, Isabel Zegrí Reiriz, Teresa Moreno López, Adrián Ruiz López, Ricardo Ortega Chuela, Álvaro Rodríguez Pérez, Fina Aran Aran, Nuria Mesado Batalla, Vicens Brossa Loidi, Laura López López, Marta Campreciós Crespo, Eulàlia Roig Minguell, Sonia Mirabet Pérez. Hospital de la Santa Creu i Sant Pau, Barcelona. La evolución de los iones en orina como marcador para identificar a los pacientes con congestión persistente manejados en un entorno ambulatorio. Póster. Rev Esp Cardiol. 2020;73(Supl 1):947
  - Ángela López Sainz, Manuel Azqueta Molluna, Antonio José Barros Membrilla, Jordi López Ayerbe, Francisco Calvo Iglesias, Francisco Arregui Montoya, Víctor X. Mosquera Rodríguez, Rubén Fernández Tarrío, Ana Revilla Orodea, Violeta Sánchez Sánchez, Eva María Cantero Pérez, Carlos Ferrera, David Toral Sepúlveda, Augusto Sao y Arturo Evangelista Masip. Hospital de la Santa Creu i Sant Pau, Barcelona. Registro Español del Síndrome Aórtico Agudo (RESA- III). Los cambios en el manejo terapéutico se reflejan en una disminución significativa de la mortalidad. Comunicaciones Orales. Rev Esp Cardiol. 2020;73(Supl 1):140
  - Ángela López Sainz, Víctor X. Mosquera Rodríguez, Manel Castells, J. Francisco Nistal Herrera, Rafael Rodriguez-Lecoq, Rubén Fernández Tarrío, José Miguel Barquero Aroca, Julio Lugo Adan, Eva María Cantero Pérez, Francisco Arregui Montoya, Antonio José Barros Membrilla, Jorge Centeno Rodríguez, David Toral Sepúlveda, Emiliano Rodríguez Caulo, Arturo Evangelista Masip. Hospital de la Santa Creu i Sant Pau, Barcelona. Tratamiento quirúrgico de la disección tipo A en el registro español del síndrome aórtico agudo. Una mejora continuada. Comunicaciones Orales. Rev Esp Cardiol. 2020;73(Supl 1):140

- 32 Congrés Societat Catalana de Cardiologia – Barcelona, 16-18 Sept 2020
  - Rodríguez Pérez, Álvaro; Zegrí Reiriz, Isabel; Tauron Ferrer, Manel; Pijoan, Tonya; Dos, Laura; Brossa Loidi, Vicens; Lopez Lopez, Laura; Campreciós Crespo, Marta; Mirabet Pérez, Sònia. Hospital de la Santa Creu i Sant Pau, Barcelona. Trasplantament cardíac en cardiopaties congènites de l'Adult, bons resultats a pesar de l'alta complexitat. Póster (P-49).
  - Adrián Ruiz, Ricardo Chuela, Dánae García, Teresa Moreno, Fina Aran, Nuria Mesado, Vicens Brossa, Sònia Mirabet, Isabel Zegrí. Póster (35). Eficàcia i seguretat de dosis altes de furosemida intravenosa en pacients amb insuficiència cardíaca aguda tractats a l'entorn ambulatori.
  - D. García Cosculluela, T. Moreno López, R. Ortega Chuela, A. Ruiz López, N. Mesado Batalla, F. Aran Aran, V. Brossa Loidi, L. López López, M. Campreciós Crespo, E. Roig Minguell, S. Mirabet Pérez. I. Zegrí Reiriz. Hospital de la Santa Creu i Sant Pau. Póster (39). L'evolució dels ions en orina com a marcador de resistència diürètica en pacients ambulatoris amb insuficiència cardiaca aguda.
- RITMO 2020 – Virtual 22-26 Jun 2020
  - Xavier Viñolas: Definición de candidatos para estimulación sin cables en nuestro medio, ¿por qué se implantan tan poco? El futuro de la estimulación: de la estimulación sin cables a la estimulación sin baterías.
  - Jose Guerra Modalidades del abordaje "single shot" para ablación de venas pulmonares. Sesiones "Lo mejor de este año y será noticia el próximo en...".
  - Concepción Alonso Martín Manifestaciones clínicas y manejo de las arritmias en la mujer. ¿Existen diferencias? Expresión clínica diferencial de las arritmias según el sexo.

Press releases

- Web CIBERCV, 20/01/2020: La ecografía pulmonar, clave para prevenir futuras complicaciones en pacientes con insuficiencia cardíaca aguda. Juan Cinca. Reference article: Mercedes Rivas-Lasarte, Jesús Álvarez-García, Juan Fernández-Martínez, Alba Maestro, Laura López-López, Eduard Solé-González, Maria J. Pirla, Nuria Mesado,Sonia Mirabet, Paula Fluvià, Vicens Brossa, Alessandro Sionis, Eulàlia Roig and Juan Cinca Lung ultrasound-guided treatment in ambulatory patients with heart failure: a randomized controlled clinical trial (LUS-HF study). Eur J Heart Fail. 2019 Dec;21(12):1605-1613. doi: 10.1002/ejhf.1604.
- ARA.Cat, 01/06/2020: Què se n'ha fet dels respiradors que van sorgir durant la pandèmia? Jose Guerra

Courses

- Máster en Técnicas Avanzadas de Diagnóstico por Imagen en Cardiología (10a edición). Universitat Autònoma de Barcelona - Hospital Santa Creu i Sant Pau. Barcelona, oct 2020 - jun 2021. Coord: Jose Guerra.
- RETAC 2020 - Annual Workshop. Hospital Santa Creu i Sant Pau, Barcelona 30-31 Jan 2020. Coord: Xavier Viñolas.
- ESADE - Màster en Direcció Pública (EMPA), Programa en Direcció Estratègica de la Col·laboració Publicoprivada. Guest speaker: Xavier Viñolas.
- Tratamiento farmacológico de la IC avanzada: más allá del tratamiento inotrópico ambulatorio. VIII Curso internacional de asistencia circulatoria mecánica Bellvitge 2020. Sònia Mirabet
- XXXIX Curso de ecocardiografía y doppler cardíaco xxxi jornadas de actualización en imagen cardíaca, 18-23 November de 2019. Avances en la insuficiencia cardiaca. Nuevos fármacos en el tratamiento de la IC. Sònia Mirabet
- IV Curso sobre la prevención de transmision de enfermedades y control de riesgos en la donación y trasplante. La visión del trasplantador. Trasplante cardiaco. February 2020. Sònia Mirabet
- Webinar IRISCAT- Efectes cardiovasculars de la COVID-19. 16 December 2020 José M. Guerra
- Máster Enfermo Crítico y Emergencias (XVI edición). Universitat de Barcelona (Facultat Medicina i Ciències de la Salut, Campus Clínic) and Universidad Autónoma de Madrid (Facultad de Medicina, La Paz). 1 October 2020
- Máster en hemodinámica e intervencionismo endovascular 2020 (3a edición). Fundación IMAS, Universidad Rey Juan Carlos. Nov 2020. Dabit Arzamendi - Antoni Serra
- Curso CSC Estructural 2020. Virtual. 5-6 March 2020. Director: Dabit Arzamendi
- Curso CSC 2020. Virtual. 15-16 Sept 2020. Director Committee: Antoni Serra
- Curso CSC WEEK 2020. Virtual. 9-12 Nov 2020. Director: Antoni Serra
- Cumbre Internacional virtual de Temas de Cardiología e Intervencion Cardiovascular en el contexto de la pandemia de COVID-19 - COMECITE. 22 May 2020. Scientific Committee: Antoni Serra

AREA 1 · Cardiovascular Diseases

Thrombosis and Haemostasis

Coordinator
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Romero Román, Lidia (FGS)
Tirado Garcia, Isabel (FGS)
Vallve Fornieles, Cristina (FGS)
Vilalta Setó, Noelia (FGS)

Main Lines of Research

- Investigation of the genetic basis of venous and arterial thrombosis. GAIT-1 and GAIT-2 projects.
- Research on the involvement of platelet adhesiveness and related phenotypes and their genetic determinants in venous thrombosis risk. RETROVE3 Project.
- Investigation of new antithrombotic drugs: thrombin inhibitors, molecules against activated factor X, low molecular weight heparin with oral activity, among others. MACACOD Registry.
- Biomarkers of prothrombotic states in patients under 55 years with venous thromboembolic disease, acute ischaemic stroke, or acute myocardial infarction. VEREMA project.
- Applied clinical development of the self-management model of oral anticoagulant treatment. ORION project. Retrospective analysis of the clinical outcomes from patient self-management of antivitamin-K treatment at the Hospital de Sant Pau. NCT3532724.
- Mathematical models of prediction of the individual risk of thromboembolic disease in the general population (RETROVE Project).
- CARAVAGGIO Clinical trial. Apixaban for the treatment of venous thromboembolism in patients with cancer: a prospective randomized open blinded endpoint (probe) study - the Caravaggio Study. Promotor: Fondazione FADOI (Italian Federation of Hospital Internists), Via F. Grossi Gondi, 49. Rome, Italy. PI Coordinator: Giancarlo Agnelli, University of Perugia, Perugia, Italy. EudraCT No.: 2016-003093-40.
- GARFIELD-VTE (Global Anticoagulant Registry in the FIELD). Promotor: The Thrombosis Research Institute, London. PI Coordinator Prof Ajay K. Kakkar. Code TRI08889. EudraCT No.: 2013-004758-55.
- PredictIA Study. Management of venous thromboembolism in patients with active cancer in Spain using electronic health records and big data techniques. Bleeding and recurrence risk - cancer study.
- CORONA Project. Impact of pre-admission antithrombotic therapy on disease severity and mortality in patients hospitalized for COVID-19. Code IIBSP-COV-2020-24.
- KIR_HLA SARS-CoV-2_INM Study on HLA and KIR genes variation in Spanish patients with COVID-19. With Stanford University California, USA).
- FANHDI Study. Post-Authorization Study to Assess the Safety and Efficacy of Fanhdi® (Double-inactivated Human Antihemophilic Factor) in Subjects with Von Willebrand Disease". Study Number: IG1403 from GRIFOLS S.A.

Scientific Challenges

- Study QTL detected in GAIT-1 families in relation to phenotypes of haemostasis with thrombosis risk (resistance to activated protein C, factor VIII, homocysteine, factor XII, body mass index and others).
- Replicate QTL related to thrombosis in GAIT-1 families by means of the linkage analysis using new GAIT-2 families.
- Conduct genome-wide association study (GWAS) of phenotypes involved in GAIT-1 and GAIT-2.
- Analyse RNA expression in GAIT-2 families.
- Investigate miRNA associated with thromboembolic disease in GAIT-2 and RETROVE.
- Explain the mechanisms underlying the relationship between platelet function and venous thrombosis risk.
- Develop risk prediction models for venous thromboembolism in the general population and in cancer patients.
- Research plasma proteins associated with the risk of venous thromboembolism by using high affinity proteomics developed at Karolinska Institutet. VEREMA project, joint collaboration between the European case-control studies VEBIOS (Sweden), RETROVE (from our unit) and MARTHA (France).
- Investigate laboratory and clinical management of DOACs.
- Search for new universal laboratory methods for the assessment of any kind of oral anticoagulant (AVK and DOACs).
- Immunotherapy for solid tumours (ITACA Project). Neutrophils as anti-tumorals. Clinical trial on sustained neutrophilia in advanced head and neck cancer (trial approved, awaiting financial support).
- Relationship between antithrombotic therapies and clinical outcomes in patients with COVID-19.
- Use of artificial intelligence and big data in predicting the risk of bleeding in patients with cancer and venous thromboembolism.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Genomics of Complex Diseases (GAIT1, GAIT2, RETROVE, VEREMA and MIRTO Project).
- Vascular Surgery (GAIT2, genetics of venous insufficiency).
- Gynecologic and Peritoneal Oncology Group (ITACA Project, on immunotherapy of solid cancer).
- CIM (Centre d'Investigació de Medicaments) in the investigation of COVID-19 outcomes realted to antithrombotic therapies.

External Collaborations

- Karolinska Institutet, Stockholm, Sweden: GAIT2 and VEREMA.
- La Timone Hospital, Marseille, France: GAIT2 and VEREMA.
- Pierre and Marie Curie University, INSERM, UMR-S 1166, Paris, France: GAIT2 and VEREMA.
- Université de Genève, Switzerland: GAIT2.
- Texas Research Institute (formerly Southwest Foundation for Biomedical Research), San Antonio, USA: GAIT1 and GAIT2.
- Universitat Politècnica de Catalunya, Barcelona, Spain. Centre for Biomedical Engineering Research: RETROVE project.
- Thrombosis Group of the Spanish Medical Oncology Society (SEOM): ONCOTHROMB.
- Institut of Biological Psychiatry, Mental Health Snc. Hans. Roskilde (Denmark).
- Servicio de Hematología del Hospital Sant Joan de Déu (Clinical modeling for the management of haemophilic patients and patiens under self-management of VKA therapy).
- Hematopathology, Pathological Anatomy. Hospital Clínic de Barcelona, Biomedical Diagnosis Centre (CDB), Institute of Biomedical Research August Pi i Sunyer (IDIBAPS), University of Barcelona. RETROVE 3 Project.
- Barcelona Endothelium Team. Hospital Clínic/University of Barcelona Campus; Barcelona. RETROVE 3 Project.
- RE Congenital coagulopathy. Blood and Tissue Bank (BST) of Catalonia. Barcelona. RETROVE 3 Project.

Active Grants

- Joan Carles Souto Andrés. Implicación de la adhesividad plaquetaria y fenotipos relacionados, y sus determinantes genéticos, en el riesgo de ETV. RETROVE 3. PI18/00434. Instituto de Salud Carlos III. Duration: 2019-2021. 82,000 €.
- Collaborative agreement With Daiichi-Sankyo to develop the MACACOD Registry (NCT 04042155). IIBSP

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

Doctoral Theses

- Lluis Prats Sánchez. Hemorragia remota secundaria al tratamiento fibrinolítico endovenoso en el ictus isquémico: frecuencia, factores de riesgo y pronóstico, UAB. Directors: Joan Martí Fábregas, Juan Carlos Souto Andrés. Date of defense 10/01/2020
- Dolors Llobet i Lorente. L'Hemostàsia primària en la Trombosi. Biomolècules implicades en la formació del coàgul plaquetar: paper de VAMP8, SERT, Serotonina, ADAMTS13 i Factor von Willebrand. Barcelona (UB). Directors: Juan Carlos Souto Andrés, Jordi Fontcuberta Boj. Date of defense 06/11/2020

Patents

- José Manuel Soria, Alba Rodríguez Rius, Juan Carlos Souto, Micro RNAs markers of thrombosis conditions. European patente application, Patent No 20382151.7 - 1118, European patente application, 02/03/2020.

Scientific Production

Total Impact Factor: 97.284 · Mean Impact Factor: 13.898

Agnelli G, Becattini C, Meyer G, Muñoz A, Huisman MV, Connors JM, Cohen A, Bauersachs R, Brenner B, Torbicki A, Sueiro MR, Lambert C, Gussoni G, Campanini M, Fontanella A, Vescovo G, Verso M; Caravaggio Investigators. N ENGL J MED 2020;382:1599-1607. PMID: 32223112. **IF: 74.699**

Benito N, Filella D, Mateo J, Fortuna AM, Gutierrez-Alliende JE, Hernandez N, Gimenez AM, Pomar V, Castellvi I, Corominas H, Casademont J, Domingo P. Pulmonary thrombosis or embolism in a large cohort of hospitalized patients with COVID-19. FRONT MED 2020;7:557. PMID: 32984388. **IF: 3.297**

Borras N., Garcia-Martinez I., Batlle J., Perez-Rodriguez A., Parra R., Altisent C., Lopez-Fernandez M.F., Costa Pinto J., Batlle-Lopez F., Cid A.R., Bonanad S., Cabrera N., Moret A., Mingot-Castellano M.E., Navarro N., et al. Unraveling the Influence of Common von Willebrand factor variants on von Willebrand Disease Phenotype: An Exploratory Study on the Molecular and Clinical Profile of von Willebrand Disease in Spain Cohort (2020) THROMB HAEMOSTASIS, 120 (3), 437-448. **IF: 4.3790**

Corrochano M., Jimenez B., Millon J., Gich I., Rambla M., Gil E., Caparros P., Macho R., Souto J.C., Patient self-management of oral anticoagulation with vitamin K antagonists in everyday practice: Clinical outcomes in a single centre cohort after long-term follow-up (2020) BMC CARDIOVASC DISOR, 20 (1), 166-. **IF: 2.0780**

Rodriguez-Rius A, López S, Martínez-Pérez A, Souto JC, Soria JM. Identification of a plasma microRNA profile associated with venous thrombosis. ARTERIOSCLER THROMB VASC BIOL 2020; 40:1392-1399. PMID: 32160777. **IF: 6.604**

Rodriguez-Rius A, Martínez-Pérez A, López S, Sabater-Lleal M, Souto JC, Soria JM. Expression of microRNAs in human platelet-poor plasma: analysis of the factors affecting their expression and association with proximal genetic variants. EPIGENETICS 2020; 2020;5:1396-1406. PMID: 32543954. **IF: 4.173**

Weitz JI, Haas S, Ageno W, Goldhaber SZ, Turpie AGG, Goto S, Angchaisuksiri P, Nielsen JD, Kayani G, Farjat AE, Schellong S, Bounameaux H, Mantovani LG, Prandoni P, Kakkar AK; GARFIELD-VTE investigators. Cancer associated thrombosis in everyday practice: perspectives from GARFIELD-VTE. J THROMB THROMBOLYSIS. 2020;50:267-277. PMID: 32583306. **IF: 2.054**

Books or Chapters with ISBN

- Marina Carrasco Expósito. Consultas relacionadas con la reversión de la anticoagulación. In: Consultas frecuentes en coagulopatías. Editorial Ambos Marketing Services SL. 2020. ISBN: 978-84-121337-2-1.

Diffusion Activities

Scientific Dissemination

Comunications to National Congresses

- Congreso Nacional de la AEHH y XXXVI Congreso Nacional de la SETH 2020. Virtual Congress, 26-30 October 2020
  - Corrochano M, Acosta R, Miqueleiz S, Rodriguez D, Quijada MA, Fraga E, Jimenez I, Martínez V, Castillo M, Amaro K, Albiol N, Souto JC. ¿Es la anticoagulación crónica un factor protector en la infección por coronavirus-19? Estudio CORONA. Comunicación oral CO-216LXII.
  - Martínez-Sánchez J, Díaz-Ricart M, Jerez-Dolz D, Arus M, Torramade-Moix S, Molina P, Carrasco M, Vilalta N, Martínez V, Llobet D, Sánchez P, Palomo M, Martín-Fernández L, Vidal F, Escolar G, Souto JC. Implicación de la adhesividad plaquetaria en el riesgo de enfermedad tromboembólica venosa. Comunicación oral CO-179.
  - Martín-Fernández L, Garcia-Martínez I, Martínez-Pérez A, Lopez S, Muñoz C, Vilalta N, Arús M, Corrales I, Souto JC, Vidal F, Soria JM. Implicación de la variación en el número de copias de un gen candidato en los niveles de DNA libre en plasma como fenotipo intermediario en la enfermedad tromboembólica venosa. PO-406.
  - Tirado I, Vilalta N, Romero L, Corrales I, Vallvé C, Gich I, Souto JC, Mateo J. Automatización del test de generación de trombina: valores normales para bleedscreen. PO-362.
  - Arús M, Jiménez-Peinado B, Martínez-Pérez V, Acosta FR, Carrasco M, Millón J, Mateo J, Souto J.C. Correlación entre los niveles plasmáticos de edoxabán y la actividad aXa en vida real. Resultados del estudio MACACOD. PO-363.
  - Jiménez-Peinado B, Acosta FR, Martínez-Pérez V, Arús M, Carrasco M, Millón JA, Vilalta N, Mateo J, Souto JC. Motivos de persistencia en TAO con AVK a pesar de tiempo en intervalo terapéutico (TTR) <65%. Resultados del estudio MACACOD. PO-379.
  - Llobet D, Vallvé C, Oliver A, Carrasco M, Vilalta N, Mateo J, Souto JC. Relación del factor von Willebrand y el ADAMTS13 con el riesgo de trombosis venosa. Resultados del proyecto RETROVE. PO-396.
  - Romero L, Vilalta N, Martínez V, Mateo J. Perfil de generación de trombina en pacientes con hemofilia adquirida. PO-348.
  - Mateo J, Marzo C, Carrasco M, Gómez C, Vilalta N, Vicente E, Villanueva C. Hemorragia digestiva grave refractaria por angiodisplasia intestinal en un paciente con enfermedad de Von Willebrand de tipo 2a resuelta con pazopanib. Comunicación oral CO-124.
  - Martín-Fernández L, Closa L, García-Martínez I, Ferrero A, Marzo C, Rubio M, Solanich X, Mitjavila F, González-Porras JR, Bastida JM, Astigarraga I, Carrasco M, Mateo J, Bernardo A, Corrales I, Pardos-Gea J, Vidal F. Estudio del papel de las variantes genéticas de los receptores de las células Natural Killer en la predisposición a padecer hemofilia a adquirida. Comunicación oral CO-226.
  - García-Martínez I, Martín-Fernández L, Enrich E, Ferrero A, Marzo C, Rubio M, Solanich X, Mitjavila F, González-Porras JR, Bastida JM, Astigarraga I, Carrasco M, Mateo J, Bernardo A, Corrales I, Vidal F, Pardos-Gea J. Caracterización del perfil clínico de una cohorte de 42 pacientes con hemofilia a adquirida y asociación con alelos de riesgo del complejo HLA. Comunicación oral CO-227
  - Sánchez-Peña D, García-Martínez I, Martín-Fernández L, Ferrero A, Marzo C, Rubio M, Solanich X, Mitjavila F, González-Porras JR, Bastida JM, Astigarraga I, Carrasco M, Mateo J, Ramírez L, Comes N, Corrales I, Pardos-Gea J, Vidal F. Aplicación de herramientas de análisis de datos masivos y aprendizaje automatizado para identificar patrones genéticos subyacentes a coagulopatías adquiridas. Comunicación oral CO-230
  - Benito N, Mateo J, Filella D, Fortuna AM, Giménez-Palleiro AM, Carrasco M, Castellví I, Domingo P. Tromboembolismo pulmonar en una cohorte de pacientes con COVID-19. Utilidad de la determinación al ingreso de dímero-D y proteína C reactiva en la clasificación de los pacientes de riesgo. PO-470

Comunications to International Congresses

- XXVIII Virtual Congress of the ISTH. Milan, july 12-14, 2020
  - Jerez-Dolz D, Diaz-Ricart M, Arús M, Torramadé-Moix S; Molina P, Ramos A, Carrasco M, Martínez V, Vilalta N, Llobet D, Martín-Fernández L, Sánchez P, Palomo M, Vidal F, Escolar G, Souto JC. Implication of Platelet Adhesiveness in the Risk of Venous Thromboembolic Disease. Abstract PB1687.
  - Llobet D, Vallvé C, Oliver A, Carrasco M, Vilalta N, Mateo J, Souto JC. Relation of von Willebrand Factor and ADAMTS13 with venous thrombosis risk. Results from the RETROVE Project. Unitat d'Hemostàsia i Trombosi. Hospital de la Santa Creu i Sant Pau. Barcelona. Abstract PB2239.
  - Huffman J, CHARGE Hemostasis and TOPMed Hematology and Hemostasis Working Groups . Multiethnic Whole Genome Sequence Analysis of Plasma Fibrinogen in over 150,000 Samples [abstract]. Res Pract Thromb Haemost. 2020; 4 (Suppl 1). https://abstracts.isth.org/abstract/multi-ethnic-wholegenome-sequence-analysis-of-plasma-ibrinogen-in-over-150000-samples. Abstract PB0733.
  - De Vries PS, Brown MR, Trans-Omics for Precision Medicine (TOPMed) Hematology and Hemostasis Working Group and the Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE) Hemostasis Working Group . Whole Genome Sequencing Study of Coagulation Factor VIII and von Willebrand Factor Reveals New Genetic Associations [abstract]. Res Pract Thromb Haemost. 2020; 4 (Suppl 1). https://abstracts.isth.org/abstract/whole-genome-sequencing-study-of-coagulation-factor-viii-and-von-willebrand-factor-reveals-new-genetic-associations. Abstract PB0233.
  - Cohen O, Ageno W, Farjat AE, Turpie AGG, Weitz JI, Haas S, Goto S, Goldhaber SZ, Angchaisuksiri P, Gibbs H, MacCallum P, Dalsgaard Nielsen J, Kayani G, Schellong S, Bounameaux H, Mantovani LG, Prandoni P, Kakkar AK, on Behalf of the GARFIELD-VTE Investigators . Management Strategies and Clinical Outcomes in Patients with Inferior Vena Cava Thrombosis: Data from the GARFIELD-VTE Registry [abstract]. Res Pract Thromb Haemost. 2020; 4 (Suppl 1). Abstract PB2308.
  - Megías-Vericat JE, Bonanad S, Martínez García MF, Berrueco R, Mingot-Castellano EM, Rodríguez López M, Canaro Hirnyk M, Mateo Arranz J, Calvo Villas JM, Haya S, Benitez O, Mesegué Medea M, Albo López C, Palomero-Massanet A, Vilalta Seto N, Larrodé Leciñena I, Cid AR, Poveda JL. Pharmacokinetic and Clinical Improvements after PK-guided Switch from Standard Half-life to Extended Half-life Factor VIII Products [abstract]. Res Pract Thromb Haemost. 2020; 4 (Suppl 1). https://abstracts.isth.org/abstract/pharmacokinetic-and-clinical-improvements-after-pk-guidedswitch-from-standard-half-life-to-extended-half-life-factor-viii-products.
  - Mingot-Castellano ME, Bastida-Bermejo JM, Haya S, Pardos-Gea J, Fernández-Sánchez de Mora MDC, Lluch R, Núñez R, Álvarez-Roman MT, Soto-Ortega I, Martín-Antoran JM, Rodríguez-García JA, Carrasco-Expósito M, Rodríguez-Alen JA, Cervero-Santiago C, Pérez-Sánchez M, Rodríguez-González R, Fernández-Mosteirin N, Alonso-Escobar MN, Moreto-Quintana A, Marco-Vera P, Registro Español de Hemolia Adquirida. Acquired Haemophilia Spanish Registry, First Five Years of Activity [abstract]. Res Pract Thromb Haemost. 2020; 4 (Suppl 1). https://abstracts.isth.org/abstract/acquired-haemophiliaspanish-registry-rst-ve-years-of-activity.

- ESHG 2020. Virtual Conference
  - Tirado, L. Romero, N. Vilalta, M. Carrasco, J. Souto, E. Martínez-Sánchez, V. Criado, M. Simón, L. Alías, S. Quero, J. Mateo. Next-generation sequencing for the diagnosis of Spanish patients affected by congenital fibrinogen defects. E-Poster E-16.10.
- Virtual Congress of the ASH, 2020
  - Pujol-Moix N, Corrochano M, Badell I, Souto JC, Nomdedeu JF. Platelet ultrastructure in familial platelet disorder with associated myeloid malignancy (FPDMM). Blood2020;136 (Suppl 1):37–38. doi: https://doi.org/10.1182/blood-2020-142248.

Conferences

- Marina Carrasco. Reversión AVK. VIII Jornada de actualización multidisciplinar en el manejo del sangrado. 20 October 2020. Octapharma
- Marina Carrasco. Manejo terapéutico en hemofilia en el entorno COVID. Reunión regional Takeda. 24 November 2020.
- Joan Carles Souto. Webinar moderator: ¿Es el autocontrol del tratamiento anticoagulante oral (TAO) una alternativa en tiempos de COVID-19? Organized by SETH and sponsored by Roche Diagnostics. 20 October 2020. With the participation of Drs. Juan Carlos Reverter, Eduardo Tamayo, Isabel Gutiérrez and nurse Montserrat Rambla.
- Joan Carles Souto. V Reunión Ampliando Horizontes, under the auspices of SETH and organized by Laboratorios Rovi. Participation in the debate: ¿Es una buena opción el tratamiento domiciliario de la EP para un gran número de pacientes? In favor. Against, Dr. Pedro Ruiz-Artacho. Virtual meeting, 6-7 October 2020.
- Joan Carles Souto. Resultados preliminares del proyecto RETROVE. Expert meeting on Thrombin Generation. Stago. Madrid, 19 November 2020.

Courses Organization

- Joan Carles Souto. Teacher. Módulo 2: Fisiopatologia y Epidemiologia de la enfermedad tromboembólica. Venosa. Máster sobre Medicina Genómica y de Precisión en Trombosis Venosa. Título de "Experto Universitario en Bioinformática aplicada a tromboembolismo venoso". Tech University. Year 2020-2021.
- Joan Carles Souto. Teacher. Course "Experto en Enfermedad Tromboembólica" - Daiichi Sankyo Cátedra de Trombosis UAH (Universidad de Alcalá de Henares). Year 2020-2021.
- Joan Carles Souto. Chapter: Anticoagulantes Clásicos; Authors: JA Millón, JC Souto.
- Joan Carles Souto. Student tutor for the Master's Thesis.
- Marina Carrasco. Teacher. Módulo 2: Riesgo Hemorrágico. Curso online Hematología Pediátrica. Novartis (Profármaco-2, S.L.). Year 2020-2021
- Marina Carrasco. XVII Curso de Formación continuada (Puesta al día en tratamiento antitrombótico. De la evidencia científica a la práctica clínica). SETH and FETH. 23-24 April 2020. Directors: José Mateo, Ramón Lecumberri.

AREA 1 · Cardiovascular Diseases

Cardiovascular Biochemistry

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Rivas Urbina, Andrea Patricia (IR)
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Main Lines of Research

Atherosclerosis mechanisms

- Mechanisms leading to lipoprotein aggregation in the arterial wall.
- Use of apoJ-derived mimetic peptides as therapeutic tools.
- Involvement of LDL(-) in lipid accumulation in cardiomyocytes associated with diabetes, obesity and heart failure.
- LDL(-)induced Inflammatory mechanisms in monocytes from patients with diabetes.
- Analysis of the adipose tissue secretome from cardiac surgery patients.
- Alterations of lipoprotein properties in patients with Alzheimer's disease and cerebral amyloid angiopathy.

Diagnosis and biomarkers

- Analysis of apolipoprotein J (apoJ) as a marker of CVR.
- Development of algorithms for ruling out acute coronary disease.
- Assessment of new biomarkers of acute cardiovascular disease: cardiac troponins, natriuretic peptides, ST-2.
- Development of methods for point-of-care biomarker measurement.
- Vulnerability markers in atheromatous plaque: electronegative LDL, LDL size, HDL function, myeloperoxidase, phospholipase.
- Lipoprotein-related biomarkers to assess carotid plaque inflammation in ischaemic stroke.
- Lipoprotein alterations as biomarkers of CVR in HIV patients.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Metabolic Bases of Cardiovascular Risk (Dr. F. Blanco Vaca). La Marató de TV3 303/C/2016, CIBERDEM CB07/08/0016.
- Endocrinology, Diabetes and Nutrition (Dr. A. Pérez). PI16/00471, PI20/00334, CIBERDEM CB07/08/0016.
- Cerebrovascular Diseases (Dr. J. Martí Fàbregas). La Marató de TV3. 158/C/2017, PI19-00421.
- Image Cardiology Unit (Dr. D. Vilades). PI16/00471, PI20/00334.
- Angiology, Vascular Biology and Inflammation (Dr. M. Camacho). PI16/00471.
- Lipids and Cardiovascular Pathology (Dr. C. Llorente).
- Regulatory Mechanisms of Cardiovascular Remodelling (Dr. Cristina Rodríguez).
- Research in Perinatal Health (Dr. E. Llurba). PI19-00702

External Collaborations

Research into atherosclerosis mechanisms

- Dr. Olga Gursky, Boston University School of Medicine, Boston, USA. NIH R01 GM067260.
- Dr. Kati Öörni, Wihuri Research Institute, Helsinki, Finland.
- Dr. Sandra Villegas Hernández, Biochemistry and Molecular Biology Department, UAB, Barcelona, Spain.
- Dr. Ferdinando Mannello. Department of Biomolecular Sciences, Section of Clinical Biochemistry and Molecular Genetics, University "Carlo Bo", Urbino, Italy.
- Dr. Mar Hernández-Guillamon. Neurovascular Research Laboratory, Vall d´Hebron Research Institute; Universitat Autònoma de Barcelona, Spain.
- Dr. Ana Reis. Facultade de Ciencias da Universidade do Porto, Portugal

Research into diagnosis

- Dr Daniel Podzamczer, HIV Unit, Infectious Disease Service, Bellvitge University Hospital, Barcelona, Spain. PATHER and ATADAR clinical trials. Fundació Clínic Recerca/NEAT Study NEAT 22/SSAT 060
- Dr. Josep Maria Gatell, Dr. Esteban Martínez, Infectious Disease Service, Hospital Clinic, Barcelona, Spain. Fundació Clínic Recerca/NEAT Study NEAT 22/SSAT 060
- Dr. Anna Rull Aixa, Hospital Universitari de Tarragona Joan XXIII, IISPV, Universitat Rovira i Virgili, Tarragona, Spain. PI20/00326.

IFCC Task Force on Clinical Applications of Cardiac Biomarkers

- Dr. Fred S. Apple, Department of Laboratory Medicine and Pathology, University of Minnesota, USA.
- Dr. Paul O. Collinson, Cardiovascular and Laboratory Departments, St. George's Hospital, London, UK.
- Dr. Alan S. Jaffe, Mayo Clinic, Cardiovascular Division, Rochester, New York, USA.
- Dr James L. Januzzi, Cardiology Division, Massachusetts General Hospital, Boston, USA.

Active Grants

- José Luis Sánchez Quesada. Relación de la grasa epicárdica, la función lipoproteica y la inflamación con el desarrollo de arteriosclerosis y miocardiopatía diabética. PI16/00471. Instituto de Salud Carlos III. Duration: 2017-2021. 131,500 €.
- Sonia Benítez González. Lipoproteínas modificadas y marcadores inflamatorios asociados con vulnerabilidad de placa carotídea e ictus isquémico. PI19/00421. Instituto de Salud Carlos III. Duration: 2020-2022. 108,000 €.
- Jordi Ordóñez Llanos. Combur 5 HC Lay use study. Roche Diagnostics, S.L. Duration: 2018-2020. 22,000 €.
- Jordi Ordóñez Llanos, Álvaro García Osuna. Clinical and analytical evaluation of the high-sensitive troponin assay on the Clarity instrument. Singulex Inc. Duration: 2016-2020. 120,000 €.
- José Luis Sánchez-Quesada. An open label study examining the efficacy and cardiovascular risk of immediate versus deferred switch from a boosted PI to dolutegravir (DTG) in HIV infected patients with stable virological suppression. NEAT Study NEAT 22/SSAT 060/Fundació Clínic Recerca. Duration: 2018-2020. 25,000 €.
- Jordi Ordóñez Llanos, Álvaro García Osuna. Analytical Performance Evaluation of Combur Test Strips (visual and Urisys 1100) REACH and software update, ref. CIM RD003541. Roche Diagnostics. Duration: 2019-2020. 25,000 €.
- Antonio Pérez, José Luis Sánchez-Quesada.Relación de la grasa epicárdica, la función lipoproteica y la inflamación con el desarrollo de arteriosclerosis y miocardiopatía diabética. Menarini Diagnostics. Duration: 2019-2021. 36,000 €.

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

Grants Awarded in 2020

- José Luis Sánchez Quesada, Tejido adiposo epicárdico en obesidad y diabetes. Mecanismos moleculares de riesgo cardiovascular y búsqueda de nuevos biomarcadores., PI20/00334, Instituto de Salud Carlos III, 2021-2023, 122.000 €.

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

Scientific Production

Total Impact Factor: 70.698 · Mean Impact Factor: 5.050

Álvarez-García J, Valero MJ, Solé-González E, Andreu Ferrero-Gregoria, Miquel Vives-Borrás, Rafael Vázquez-García, José Ramón González-Juanatey, Pablo García-Pavía, Domingo Pascual Figal, Ramón Bover, Ramón Bascompte, Juan Delgado, Alfredo Bardají, Félix Pérez-Villa, José Luis Zamorano, María G.Crespo-Leiro, Pedro Luis Sánchez, Álvaro García-Osuna, Luis Alberto Robledo-Escobar, Antonio Bayés de Luna, Manuel Martínez-Sellés, Juan Cinca, on behalf of investigators of the Spanish Heart Failure Network (REDINSCOR II). Prevalence, clinical profile and prognostic implications of interatrial block in patients admitted for heart failure. REC CARDIOCLINICS. 2020;55(3):155-164. DOI:10.1016/j.rccl.2020.03.011. **IF: 4.642**.

Apple FS, Collinson PO, Kavsak PA, Body R, Ordóñez-Llanos J, Saenger AK, Omland T, Hammarsten O, Jaffe AS; IFCC Committee Clinical Application of Cardiac Biomarkers. The IFCC Clinical Application of Cardiac Biomarkers Committee's Appraisal of the 2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-segment Elevation: Getting Cardiac Troponin Right. CLIN CHEM. 2020 Dec 30:hvaa337. doi: 10.1093/clinchem/hvaa337. Epub ahead of print. PMID: 33377906. **IF: 7.292**

Cedo L., Metso J., Santos D., Garcia-Leon A., Plana N., Sabate-Soler S., Rotllan N., Rivas-Urbina A., Mendez-Lara K.A., Tondo M., Girona J., Julve J., Pallares V., Benitez-Amaro A., Llorente-Cortes V., Perez A., Gomez-Coronado D., Ruotsalainen A.-K., Levonen A.-L., Sanchez-Quesada J.L., Masana L., Kovanen P.T., Jauhiainen M., Lee-Rueckert M., Blanco-Vaca F., Escola-Gil J.C., LDL receptor regulates the reverse transport of macrophage-derived unesterified cholesterol via concerted action of the HDL-LDL Axis: Insight from mouse models (2020) CIRC RES, 127 (6), 778-792. **IF: 14.4670**

De Gonzalo-Calvo D, Barroeta I, Nan MN, Rives J, Garzón D, Carmona-Iragui M, Benejam B, Videla L, Fernández S, Altuna M, Valldeneu S, Blesa R, Lleó A, Blanco-Vaca F, Fortea J, Tondo M. Evaluation of biochemical and hematological parameters in adults with Down syndrome. SCI REP. 2020 Aug 13;10(1):13755. doi: 10.1038/s41598-020-70719-2. PMID: 32792619; PMCID: PMC7426851. **IF: 3.998**.

Di Yacovo S., Saumoy M., Sanchez-Quesada J.L., Navarro A., Sviridov D., Javaloyas M., Vila R., Vernet A., Low H., Penafiel J., Garcia B., Ordonez-Llanos J., Podzamczer D., Lipids, biomarkers, and subclinical atherosclerosis in treatment-naive HIV patients starting or not starting antiretroviral therapy: Comparison with a healthy control group in a 2-year prospective study (2020) PLOS ONE, 15 (8 August), e0237739-. **IF: 2.7400**

Genua I., Ramos A., Caimari F., Balague C., Sanchez-Quesada J.L., Perez A., Minambres I., Effects of Bariatric Surgery on HDL Cholesterol (2020) OBES SURG, 30 (5), 1793-1798. **IF: 3.4120**

Jayaraman S., Chavez O.R., Perez A., Minambres I., Sanchez-Quesada J.L., Gursky O., Binding to heparin triggers deleterious structural and biochemical changes in human low-density lipoprotein, which are amplified in hyperglycemia (2020) BBA-MOL CELL BIOL L, 1865 (8). **IF: 4.5190**

Mendez Fernandez AB, Ferrero-Gregori A, Garcia-Osuna A, Mirabet-Perez S, Pirla-Buxo MJ, Cinca-Cuscullola J, Ordonez-Llanos J, Roig Minguell E. Growth differentiation factor 15 as mortality predictor in heart failure patients with non-reduced ejection fraction. ESC HEART FAIL. 2020 Oct;7(5):2223-2229. doi: 10.1002/ehf2.12621. Epub 2020 Jun 26. PMID: 32589369; PMCID: PMC7524215. **IF: 3.902**.

Permanyer E., Munoz-Guijosa C., Padro J.-M., Ginel A., Montiel J., Sanchez-Quesada J.L., Vila L., Camacho M., Mini-extracorporeal circulation surgery produces less inflammation than off-pump coronary surgery (2020) EUR J CARDIO-THORAC, 57 (3), 496-503. **IF: 3.4860**

Puig N, Jiménez-Xarrié E, Camps-Renom P, Benitez S. Search for Reliable Circulating Biomarkers to Predict Carotid Plaque Vulnerability. INT J MOL SCI. 2020 Nov 3;21(21):8236. doi: 10.3390/ijms21218236. PMID: 33153204; PMCID:PMC7662861. **IF: 4.556**.

Puig N, Miñambres I, Benítez S, Gil P, Grau-Agramunt M, Rivas-Urbina A, Pérez A, Sánchez-Quesada JL. Familial Combined Hyperlipidemia (FCH) Patients with High Triglyceride Levels Present with Worse Lipoprotein Function Than FCH Patients with Isolated Hypercholesterolemia. BIOMEDICINES. 2020 Jan 6;8(1):6. doi: 10.3390/biomedicines8010006. PMID: 31935793; PMCID: PMC7168323. **IF: 4.717**.

Puig N, Montolio L, Camps-Renom P, Navarra L, Jiménez-Altayó F, Jiménez-Xarrié E, Sánchez-Quesada JL, Benitez S. Electronegative LDL Promotes Inflammation and Triglyceride Accumulation in Macrophages. CELLS. 2020 Mar 1;9(3):583. doi: 10.3390/cells9030583. PMID: 32121518; PMCID: PMC7140452. **IF: 4.366**.

Rivas-Urbina A, Rull A, Aldana-Ramos J, Santos D, Puig N, Farre-Cabrerizo N, Benitez S, Perez A, de Gonzalo-Calvo D, Escola-Gil JC, Julve J, Ordoñez-Llanos J, Sanchez-Quesada JL. Subcutaneous Administration of Apolipoprotein J-Derived Mimetic Peptide d-[113-122]apoJ Improves LDL and HDL Function and Prevents Atherosclerosis in LDLR-KO Mice. BIOMOLECULES. 2020 May 29;10(6):829. doi: 10.3390/biom10060829. PMID: 32485898; PMCID: PMC7356811. **IF: 4.082**.

Rivas-Urbina A., Rull A., Montoliu-Gaya L., Perez-Cuellar M., Ordonez-Llanos J., Villegas S., Sanchez-Quesada J.L., Low-density lipoprotein aggregation is inhibited by apolipoprotein J-derived mimetic peptide D-[113–122]apoJ (2020) BBA-MOL CELL BIOL L, 1865 (2). **IF: 4.5190**

Books or Chapters with ISBN

- Ana Reis, José Luis Sanchez-Quesada, Sílvia O Diaz, Victor de Freitas, Adelino Leite-Moreira and António S Barros. Lipidomics in Cardiovascular Diseases. In Systems Medicine: Integrative Qualitative and Computational Approaches. Editor in Chief: Olaf Wolkenhauer. Elsevier. https://doi.org/10.1016/B978-0-12-801238-3.11598-3

Diffusion Activities

Conferences

- José Luis Sánchez Quesada. Tejido Adiposo Epicárdico. Round table: Grasa Ectópica y Diabetes. XXXI Congreso Nacional de la Sociedad Española de Diabetes. 22-24 June 2020.
- José Luis Sánchez Quesada. Epicardial adipose tissue secretome from type 2 diabetic patients contains more ceramides and induce inflammation and cytotoxicity in cardiomyocytes. Reunión anual CIBERDEM 2020. 3-5 November 2020.
- Alvaro García Osuna. Simposio "Labnews": Novedades en Bioquímica Cardiovascular. XIV Congreso Nacional del Laboratorio Clínico. Sociedad Española de Química Clínica y Patología Molecular. 8-14 November 2020.

Congress presentations

- Sara Rocha, Ana Reis, José Luis Sánchez-Quesada, Víctor de Freitas. Hyperglycemia alters the cargo of polyphenols in lipoprotein subclasses. Iberphenol International Conference. 26-27 March 2020.
- Ana Reis, Sara Rocha, Irundika Dias, José Luis Sánchez-Quesada, Víctor de Freitas. Lipid environments in the polyphenol metabolome in diabetes mellitus. XXX International Conference on Polyphenols 2020. 13-15 July 2020.
- Shobini Jayaraman, José-Luis Sánchez-Quesada, Inka Miñambres, Antonio Pérez, Olga Gursky. Impact of weight loss after a bariatric surgery on the quantity and quality of lipoproteins. 88th European Atherosclerosis Society Congress, 4-7 October 2020.
- Nuria Puig, Elena Jiménez-Xarrie, Pol Camps-Renom, Francesc Jiménez, José Luis Sánchez-Quesada, Sonia Benitez. Electronegative LDL (LDL(-)) induces cell differentiation and inflammatory response in THP1-CD14 macrophages. 88th European Atherosclerosis Society Congress, 4-7 October 2020.
- Nuria Puig, Ariadna Creus, Inka Miñambres, Pedro Gil, Antonio Pérez, José Luis Sánchez-Quesada, Sonia Benítez. Epicardial adipose tissue from type 2 diabetic patients displays features ascribed to metabolic alterations and inflammation. 88th European Atherosclerosis Society Congress, 4-7 October 2020.
- Sonia Benítez, Nuria Puig, Lara Montolio, Laia Navarra, Pol Camps-Renom, José Luis Sánchez-Quesada, Elena Jiménez-Xarrie. Electronegative LDL promotes triglyceride-enriched lipid droplet accumulation in macrophages by inducing the expression of genes related to lipid metabolism. 88th European Atherosclerosis Society Congress, October 4-7 2020.
- Andrea Rivas-Urbina, Anna Rull, Joan Carles Escolà, Maija Atuegwu, Lauri Äikäs, Katariina Öörni, José Luis Sánchez-Quesada. Apolipoprotein J ablation triggers atherosclerosis in a chow diet-fed LDLR-KO mice. 88th European Atherosclerosis Society Congress. 4-7 October, 2020.
- Pedro Gil, Nuria Puig, Ariadna Creus, Inka Miñambres, Antonio Pérez, José Luis Sánchez-Quesada, Sonia Benitez. Alteraciones metabólicas e inflamación El en el tejido adiposo epicárdico de pacientes con diabetes tipo 2 presenta características atribuidas a alteraciones metabólicas e inflamación. XXXI Congreso Nacional de la Sociedad Española de Diabetes. 22-24 June 2020.
- José Rives Jiménez, Álvaro García-Osuna, Assumpta Antonijuan Parés, Margarida Grau Agramunt, Vanesa Orantes Gallego, Marina Canyelles Vich, Madalina Nicoleta Nan, Josefina Mora Brugués. Serial NSE measurements to assess poor neurological outcome alter sudden cardiac arrest. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- Laura Casas Martín, Álvaro García-Osuna. Intercambiabilidad de resultados de procalcitonina entre dos analizadores (Cobas e601 y Alinity i) y un dispositivo point-of-care testing (AQT90 FLEX). XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- Lidia Martínez Martos, Montse Font Firvida, Álvaro García-Osuna. Intercambiabilidad de resultados de lactato en líquido cefalorraquídeo entre el analizador Architect c16000 de Abbott y el dispositivo point-of-care ABL90 FLEX de Radiometer. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- J. Rives Jiménez, M. Grau Agramunt, A. Antonijuan Parés, V. Orantes Gallego, S. Terzán Molina, M.N. nan, M. Canyelles Vich, J. Mora Brugués. Clinical use of alpha-fetoprotein-concanavalin a (AFP-ConA) binding to discriminate between germinal and hepatic origin of AFP. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- J. Rives Jiménez, M.N. Nan, R. Pérez Calleja, S. Terzán Molina, P. Sardà Vidal, C. Pérez Bolancel, E. Zapico Muñiz, E. Urgell Rull. Interferencia en la medida de vitamina D con un método de LC-MS/MS en pacientes que reciben soporte nutricional. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- M. N. Nan, J. Rives Jimenez, S. Terzán Molina, R. Pérez Calleja, A. Antonijuan Parés, M. Grau Agramunt, Á. García Osuna, E. Urgell Rull. Valoración de la monitorización intraoperatoria de pth (PTHio) en pacientes con hiperparatiroidismo primario (HPP) en dos métodos de inmunoanálisis. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- M.N. Nan, A. Antonijuan Parés, V. Orantes Gallego, M. Grau Agramunt, J. Rives Jiménez, M. Canyelles Vich, J. Mora Brugués. Utilidad del CEA y las mutaciones de KRAS y GNAS en el diagnóstico de los quistes pancreáticos mucinosos. XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.
- E. Urgell Rull, M.N. Nan, S. Terzán Molina, R. Pérez Calleja, J. Rives Jiménez, A. Antonijuan Parés, M. Grau Agramunt, P. Sardà Vidal. Detección de macroprolactina en suero mediante precipitación con polietilenglicol (PEG) y confirmación con cromatografía de filtración en gel (CFG). XIV Congreso Nacional del Laboratorio Clínico. 8-14 November 2020.

AREA 1 · Cardiovascular Diseases

Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases

Coordinator
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Members
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Sutelman, Pablo (IR)
Traver Tejero, Susanna (IR)
Velasco Murcia, María Ángeles (IR)
Vilahur Garcia, Gemma (IR)

Main Lines of Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Acute and Intensive Cardiac Care Unit (Sionis A, Sans-Roselló J, Sánchez-Martínez M, Vila-Perales M, Duran-Cambra A).
- Radiology Unit (Capdevila A, Hidalgo A).
- Biomarkers for Cardiovascular Disease (Padro T).
- Clinical and Translational Cardiology (Carreras F).
- Pharmacological Research in Humans (Antonijoan RM).
- Lipids and Cardiovascular Pathology (Llorente-Cortés V, de Gonzalo-Calvo D).
- Metabolic Basis of Cardiovascular Risk (Escola-Gil JC, Cedo L).
- Internal Medicine Department, Infectious Diseases Unit (Domingo P).

External Collaborations

National Collaborations

- Department of Internal Medicine, Hospital Clínic, Barcelona, Spain (R. Estruch)
- Lipid Clinic, Endocrinology and Nutrition Service, Hospital Clinic, Barcelona, Spain (A. Sala-Vila, E. Ros)
- Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona, Barcelona, Spain (S. Brugaletta, V. Martín-Yuste, C. Cola, M. Sabaté, G. Mendieta).
- Fundación Hipercolesterolemia Familiar. Madrid, Spain (P. Mata, R. Alonso, L. Pérez-Isla).
- Department of Cardiology, Hospital Universitario de San Juan, Alicante, Spain (V. Bertomeu-Martínez, V. Bermoteu-González, J. Moreno-Arribas)
- Department of Cardiology, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain (M.A. Esteve-Pastor, F. Marín)
- Department of Cardiology, Hospital La Paz, Madrid, Spain (I. Roldan-Rabadan)
- Instituto Universitario de Ciencias de la Salud, Instituto de Investigación Biomédica de A Coruña (INIBIC), Universidade da Coruña, La Coruña, Spain (J. Muñiz)
- Hospital General Universitario Gregorio Marañón, Instituto de Investigación Sanitaria Gregorio Marañón, Universidad Complutense, Madrid, Spain (F. Fernández-Aviles, A.M. Climent, L. Grigorian Shamagian, R. Sanz-Ruiz)
- Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain (V. Fuster, B. Ibañez)
- Clínica Teknon, Barcelona, Spain (F. Moscatiello, C. Ballesta)
- Unitat de Lípids i Risc Vascular, Department of Medicine, Hospital del Mar, Barcelona, Spain (J. Pedro-Botet)
- Lipid and Atherosclerosis Unit, Department of Internal Medicine (J. López-Miranda)/ Department of Cardiology (M. Ruiz-Ortiz, M. Anguita) / IMIBIC/Reina Sofia University Hospital/University of Cordoba, Cordoba, Spain

- Unidad de Lípidos, Hospital Universitario Miguel Servet, IIS Aragón, Universidad de Zaragoza, Zaragoza, Spain. (F. Civeira)
- Internal Medicine Unit, University Hospital Alcorcon Foundation, Rey Juan Carlos University, Madrid, Spain (C. Guijarro)
- Lipid Unit, Department of Internal Medicine, Hospital Universitario General Gregorio Marañón, Universidad Complutense, Madrid, Spain (J. Millán)
- Internal Medicine Service, Hospital Carlos III, Madrid, Spain (J.M. Mostaza)
- Lipids and Vascular Risk Unit, Internal Medicine (X. Pintó) / Department of Cardiology (A. Cequier) / Hospital Universitario de Bellvitge, Hospitalet de Llobregat, Barcelona, Spain
- Department of Medicine and Dermatology, Lipids and Atherosclerosis Laboratory, CIMES, University of Málaga, Virgen de La Victoria University Hospital, IBIMA, Málaga, Spain (P Valdivielso)
- Unitat de Medicina Vascular i Metabolisme, Hospital Universitari Sant Joan, Universitat Rovira i Virgili, IISPV, CIBERDEM, Reus, Spain (L. Masana)
- Cell Therapy Network (TerCel), RD16/0018
- CIBER Cardiovascular Diseases CB16/11

International Collaborations

- Experimental, Diagnostic and Speciality Medicine, University of Bologna, Bologna, Italy (Raffaele Bugiardini, Edina Cenko)
- School of Healthcare Science, John Dalton Building, Manchester Metropolitan University, UK (Mark Slevin)
- Atherothrombosis Research Unit, Zena and Michael A. Wiener Cardiovascular Institute, Mount Sinai School of Medicine, New York, USA (Juan José Badimon)
- Department of Clinical Biochemistry and Immunohematology, Faculty of Health Sciences, University of Talca, Chile (Ivan Palomo)
- Centre for Clinical Heart Research, Department of Cardiology, Oslo University Hospital Ullevål, Oslo, Norway (Ingebjørg Seljeflot)
- Department of Food and Nutrition, Universidade Federal de Santa Maria, Palmeira das Missões, Brazil; Program of Postgraduate in Gerontology, Universidade Federal de Santa Maria, Santa Maria, Brazil. (Patricia Chagas)
- Department of Pharmacology, Catholic University School of Medicine, Rome, Italy (Carlo Patrono)
- Department of NeuroFarBa, C.I.M.M.B.A., University of Florence, Florence, Italy (Elisabetta Cerbai)
- Department of Epidemiology and Prevention, IRCCS Istituto Neurologico Mediterraneo Neuromed, Pozzilli, Italy (Giovanni de Gaetano)
- Cardiology Department, University of Medicine and Pharmacy "Carol Davila" of Bucharest, Emergency Clinical Hospital of Bucharest, Bucuresti, Romania (Maria Dorobantu)
- Cardiovascular and Metabolic Diseases, Innovative Medicines and Early Development Biotech Unit, AstraZeneca, Mölndal, Sweden (Leif Carlsson)
- Cardiology Unit, Department of Medicine, Solna, Karolinska Institute and Karolinska University Hospital, Stockholm, Sweden (Francesco Cosentino, Rosa Suades)
- Institute of Cardiovascular Sciences, University of Birmingham, Birmingham, United Kingdom (Gregory Y.H. Lip)
- Department of Experimental, Diagnostic, and Specialty Medicine, University of Bologna, Bologna, Italy (Raffaele Bugiardini)
- Department of Pharmacological and Biomolecular Sciences, University of Milan and MultiMedica IRCCS, Milano, Italy (Alberico L. Catapano)
- TACTICS - Transnational Alliance for Regenerative Therapies in Cardiovascular Syndromes (Fernández-Avilés F, Sanz-Ruiz R, Climent AM, Charron D, Fuster V, Janssens S, Kastrup J, Kim HS, Lüscher TF, Martin J, Menasché P, Simari R, Stone GW, Terzic A, Willerson JT, Wu J)

Active Grants

- Lina Badimon Maestro. Red de Terapia Celular (TerCel). RD16/0011/0018. Instituto de Salud Carlos III. Duration: 2017-2021. 166,255 €.
- Sonia Huertas Segarra. Participació de la via de senyalització WNT en l'hemostàsia i la funcionalitat de les plaquetes. SLT006/17/00089. Departament de Salut. Duration: 2018-2020. 65,709.06 €.
- Maria Montserrat Borrell Pagès. Aterotrombosis y su inhibicion: lrp5/wnt en la respuesta aguda a la lesión vascular. PI16/02014. Instituto de Salud Carlos III. Duration: 2017-2021. 53,500 €.
- Gemma Arderiu Marquès. Enfermedad arterial periférica: potenciar la capacidad angiogénica de las células madre mesenquimales. PI17/01321. Instituto de Salud Carlos III. Duration: 2018-2020. 74,000 €.
- Lina Badimon Maestro. Factor tisular no-coagulante y angiogenesis terapéutica para reparar el tejido isquémico. SAF2016-76819-R. Ministerio de Economía y Competitividad. Duration: 2016-2020. 320,000 €.
- Lina Badimon Maestro. TRANSBIOLINE. 821283 H2020. European Union. Duration: 2019-2024. 146,080 €.
- Lina Badimon Maestro. Patologia Molecular i Terapèutica de les malalties aterotrombótiques. 2017 SGR 1480. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 61,192 €.
- Alexandre Gallinat O'Callaghan. Factor tisular no-coagulante y angiogénesis terapéutica para reparar el tejido isquémico. BES2017-081378. Ministerio de Economía y Competitividad. Duration: 2018-2022. 88,250 €.
- Lina Badimon Maestro. Apo J-Glyc en la isquemia cardiovascular (AGLIC). RTC-2017-6710-1. Ministerio de Economía y Competitividad. Duration: 2018-2021. 251,381 €.
- Gemma Vilahur García. Estrategias innovadoras para restaurar la actividad cardioprotectora de las HDL: perfil molecular y caracterización fenotípica de HDL disfuncionales y restauradas. PGC2018-094025-B-I00. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 150,000 €.
- Lina Badimon Maestro. Moderate beer intake effects on the inflammasome pathway and TLR-mediated immunomodulation in humans. EA 1659. European Foundation for Alcohol Research. Duration: 2017-2020. 65,000 €.
- Lina Badimon Maestro. Centro de Investigación Biomédica en Red de Enfermedades Cardiovasculares (CIBERCV). CB16/11/00411. Ministerio de Economía y Competitividad. Duration: 2017-2020. 400,702.94 €.
- Maria Montserrat Borrell Pagès. PCSK9 como cofactor de miembros de la superfamilia de los LDLR y su interacción con las distintas estirpes celulares presentes en las lesiones ateroscleróticas. SEC 2019. Sociedad Española de Cardiología. Duration: 2019-2020. 15,000 €.
- Gemma Vilahur Garcia. Reconstitución de las HDL: bioingeniería para restaurar la función perdida por hipercolesterolemia. FEA 2019. Fundación Española de Arteriosclerosis. Duration: 2020-2021. 10,909.09 €.
- Lina Badimon Maestro. CARDIATEAM-IMI2-821508. AMD-821508-11. Centro de Investigación Biomédica en Red. Duration: 2019-2024. 40,000 €.
- Lina Badimon Maestro/Gemma Vilahur Garcia. Administration of APT-102 on top of ticagrelor provides additional cardioprotective benefits to that of ticagrelor alone. Astra Zeneca. Duration: 2017-2021. 520,770 €.
- Lina Badimon Maestro/Teresa Padró Capmany. Efectos del probiótico "AB-Life" sobre la cantidad y perfil de ácidos biliares, y el perfil lipídico y metabólico en sujetos sanos con sobrepeso moderado. AB-BIOTICS. Duration: 2019-2021. 250.592,4 €

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

Grants Awarded in 2020

- Lina Badimon Maestro. Nuevas terapias avanzadas para mejorar la disfunción microvascular y regenerar tejido isquémico. PID2019-107160RB-I00. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2023 400,000 €.
- Lina Badimon Maestro. Network of excellence for the development of advanced therapies for the treatment of myocardial infarctionsbased on regenerative medicine and 3D printing. SOE4/P1/E1063. European Union Duration: 2020-2023. 111,375 €.
- Gemma Arderiu Marquès, Reprogramación directa de las ASCs a células endoteliales mediante factores de transcripción para inducir la regeneración vascular en la enfermedad arterial periférica. PI20/01517. Instituto de Salud Carlos III. Duration: 2021-2023. 122,000 €.
- Maria Montserrat Borrell Pagès. Progresión de la aterosclerosis: nuevas funciones del PCSK9 y los LRPs. PI20/01282. Instituto de Salud Carlos III. Duration: 2021-2023. 112,000 €.
- Alba Maestro Benedicto. Contratos Rio Hortega 2020. CM20/00220. Instituto de Salud Carlos III. Duration: 2021-2023. 53,732 €.
- Gemma Vilahur Garcia. Nueva aproximación terapéutica para prevenir el desarrollo de cardiomiopatía diabética a través de la inhibición funcional de la HMGCoA-reductasa y la activación de la vía de señalización de la AMPK., SEC 2020. Sociedad Española de Cardiología. Duration: 2020-2021. 15,000 €.
- Lina Badimon Maestro. Prevención del deterioro cognitivo de origen vascular (VCI) mediante la activación del tráfico de colesterol y la reducción de la oxidación cellular. AC20/00054. Instituto de Salud Carlos III. Duration: 2021-2023. 144,610 €.
- Lina Badimon Maestro. Medical technologies, digital tools and artificial intelligence analytics to improve surveillance and care at high technology readlines. 101016072. European Union. Duration: 2020-2022. 200,000 €.
- Lina Badimon Maestro. Compuesto para su uso en la prevención y/o reducción del daño por isquemia. DTS19/00131. Instituto de Salud Carlos III. Duration: 2020-2021. 66,000 €.

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

Awards

- Board Member of the European Society of Cardiology (ESC) (2020-2022) (L. Badimon)
- Chair of the of the Working Group of Thrombosis of the European Society of Cardiology (ESC) (2020-2022) (G. Vilahur)
- Board Member of the Council on Basic Cardiovascular Science- European Society of Cardiology (ESC) (2018-2020) (G. Vilahur)
- Councillor de la European Society for Clinical Investigation (ESCI) (2019-2024) (G. Vilahur)
- Member of the Scientific Advisory Board of the Berlin Institute of Health (BIH), Berlin, Germany (L. Badimon)
- Member of the External Sounding Board (ESB) BIH Center for Regenerative Therapies (BCRT) (2020) (L. Badimon)
- Chair of the Advisory Board del Berlin Institute of Health (BIH) (2020) (L. Badimon)
- Supervisory Board del BIH, nombrada por el Senado del Estado de Berlin (2020) (L. Badimon)
- Expert Reviewer – Biology and Psychobilogy Area of the National Agency for Quality Assessment and Accreditation (L. Badimon)
- Visiting Professorship Université Paris-Est Créteil (France) (2020-) (L. Badimon)
- Membre of the Advisory Scientific Board of the Centro de Investigación en Trombosis – Universidad de Talca, Chile (2020-) (L. Badimon)
- Membre of the External Advisory Board of the Department of Cardiovascular Sciences at the University of Leuven (2020-) (L. Badimon)

Doctoral Theses

- Soumaya Ben-Aicha González. New therapeutic strategies to protect against cardiovascular disease: impact of hypercholesterolemia. University of Barcelona. Directors: Badimon L, Vilahur G. Date of defense: 18/06/2020
- Lina Guiomar Mendieta Badimon, Ischemic heart disease: Identification of novel mechanisms to achieve cardiac protection. University of Barcelona. Directors: Vilahur G, Sabaté M. Date of defense: 10/07/2020

Patents

- Lina Badimon Maestro, Gemma Vilahur García. Prevention and/or treatment of ischemia/reperfusion injury, 14382190.8-1464. European. 18/07/2014
- Badimon Maestro, Judit Cubedo Ràfols, Gemma Vilahur, Teresa Padró Capmany. Prevention and/or treatment of ischemia or ischemia/reperfusion injury. WO/2017/157958. International. 14/03/2019
- Lina Badimon Maestro, Judit Cubedo Ràfols, Teresa Padró Capmany. Methods and kits for the diagnosis and risk stratification of patients with ischemia. WO2017/178521. International. 19/10/2017
- Lina Badimon Maestro, Gemma Vilahur García. Statin for prevention/reduction of ischemia-related damage. WO/2018/178275. European. 04/10/2018
- Lina Badimon Maestro, Judit Cubedo Ràfols, Gemma Vilahur García. Methods and compositions for the prevention and/or treatment of ischemia and of ischemia/reperfusion injury., 18382897.9-1112. European. 28/01/2019
- Lina Badimon Maestro, Judit Cubedo Ràfols, Teresa Padró Capmany. Antibodies specific for glycosylated APOJ and uses thereof, WO/2020/083979 A1. International. 30/04/2020

Transfer Products

- Co-founder ot the Spin-Off "Glycardial Diagnostics SL" Septembre 2017

Scientific Production

Total Impact Factor: 273.260 · Mean Impact Factor: 9.658

Alessandro E, Becker C, Bergmeier W, Bode C, Bourne JH, Brown H, Buller HR, Ten Cate-Hoek AJ, Ten Cate V, van Cauteren YJM, Cheung YFH, Cleuren A, Coenen D, Crijns HJGM, de Simone I, Dolleman SC, Klein CE, Fernandez DI, et al., Scientific Reviewer Committee. Thrombo-Inflammation in Cardiovascular Disease: An Expert Consensus Document from the Third Maastricht Consensus Conference on Thrombosis. THROMBOSIS AND HAEMOSTASIS. Apr; 120 (4); 538-564; 2020. DOI: 10.1055/s-0040-1708035. PMID: 32289858. **IF: 4.379**

Andreadou I, Schulz R, Badimon L, Adameová A, Kleinbongard P, Lecour S, Nikolaou PE, Falcão-Pires I, Vilahur G, Woudberg N, Heusch G, Ferdinandy P. Hyperlipidaemia and cardioprotection: Animal models for translational studies. BRITISH JOURNAL OF PHARMACOLOGY Dec; 177(23):5287-5311; 2020. DOI: 10.1111/bph.14931. PMID: 31769007. **IF: 7.730**

Andreadou I, Tsoumani M, Vilahur G, Ikonomidis I, Badimon L, Varga Z, Ferdinandy P, Schulz R. PCSK9 in Myocardial Infarction and Cardioprotection: Importance of Lipid Metabolism and Inflammation. FRONTIERS IN PHYSIOLOGY Nov 12; 11; 605497; 2020. DOI: 10.3389/fphys.2020.602497. PMID:33262707. **IF: 2.067**

Anguita Sanchez M., Bertomeu Martinez V., Ruiz Ortiz M., Cequier Fillat A., Roldan Rabadan I., Muniz Garcia J., Badimon Maestro L., Esteve Pastor M.A., Marin Ortuno F., Direct oral anticoagulants versus vitamin K antagonists in real-world patients with nonvalvular atrial fibrillation. The FANTASIIA study Anticoagulantes orales directos frente a antagonistas de la vitamina K en pacientes del «mundo real» con fibrilación auricular no valvular. Estudio FANTASIIA (2020) REV ESP CARDIOL, 73 (1), 14-20. **IF: 4.6420**

Arauna D, Chiva-Blanch G, Padro T, Fuentes E, Palomo I, Badimon L. Frail older adults show a distinct plasma microvesicle profile suggesting a prothrombotic and proinflammatory phenotype. JOURNAL OF CELLULAR PHYSIOLOGY Aug 4; 236(3): 2099-2108, 2020. DOI: 10.1002/jcp.29996. PMID:32749745. **IF: 5.546**

Arderiu G, Lambert C, Ballesta C, Moscatiello F, Vilahur G, Badimon L. Cardiovascular Risk Factors and Differential Transcriptomic Profile of the Subcutaneous and Visceral Adipose Tissue and Their Resident Stem Cells. CELLS Oct 3; 9(10); 2235; 2020. DOI: 10.3390/cells9102235. PMID:33022994. **IF: 4.366**

Badimon L, Devaux Y. Transcriptomics research to improve cardiovascular healthcare. EUROPEAN HEART JOURNAL Sep 14; 41(35); 3296-3298; 2020. DOI: 10.1093/eurheartj/ehaa237. PMID:33033839. **IF: 22.673**

Badimon L, Luquero A, Crespo J, Peña E, Borrell-Pages M. PCSK9 and LRP5 in macrophage lipid internalization and inflammation. CARDIOVASCULAR RESEARCH. Sep 29:cvaa254. 2020. DOI: 10.1093/cvr/cvaa254. PMID:32991689. Online ahead of print **IF: 8.168**

Badimon L., Suades R., Vilella-Figuerola A., Crespo J., Vilahur G., Escate R., Padro T., Chiva-Blanch G., Liquid Biopsies: Microvesicles in Cardiovascular Disease (2020) ANTIOXID REDOX SIGN, 33 (9), 645-662. **IF: 6.3230**

Badimon L. ESC Advocacy: contributing to the ESC mission of reducing the burden of cardiovascular disease. CARDIOVASCULAR RESEARCH 1 Oct; 116(12):169-170; 2020. DOI: 10.1093/cvr/cvaa237. PMID:32980874. **IF: 8.168**

Ben-Aicha S, Badimon L, Vilahur G. Advances in HDL: much more than lipid transporters. INTERNATIONAL JOURNAL OF MOLECULAR SCIENCE Jan 22, 21(3):732; 2020. DOI: 10.3390/ijms21030732. PMID: 31979129. **IF: 4.556**

Ben-Aicha S, Escate R, Casani L, Padro T, Peña E, Arderiu G, Mendieta G, Badimon L, Vilahur G. HDL lipoprotein remodelled in hypercholesterolemic blood induce epigenetically driven downregulation of endothelial HIF-1α expression in a preclinical animal model. CARDIOVASCULAR RESEARCH. June 1; 116 (7):1288-1299; 2020. DOI: 10.1093/cvr/cvz239. PMID: 31504272. **IF: 8.168**

Bertomeu-Gonzalez V., Moreno-Arribas J., Esteve-Pastor M.A., Roldan-Rabadan I., Muniz J., Rana-Miguez P., Ruiz-Ortiz M., Cequier A., Bertomeu-Martinez V., Badimon L., Anguita M., Lip G.Y.H., Marin F., Association of Body Mass Index With Clinical Outcomes in Patients With Atrial Fibrillation: A Report From the FANTASIIA Registry (2020) J AM HEART ASSOC, 9 (1), e013789-. **IF: 4.6050**

Bertomeu-Gonzalez V, Moreno-Arribas J, Esteve-Pastor MA, Roldan-Rabadán I, Muñiz J, Otero García D, Ruiz-Ortiz M, Cequier A, Bertomeu-Martínez V, Badimon L, Anguita M, Lip GYH, Marín F; FANTASIIA Study Investigators. Peripheral artery disease and clinical outcomes in patients with atrial fibrillation: A report from the FANTASIIA registry. EUROPEAN JOURNAL OF CLINICAL INVESTIGATION OCT 16; E13431; 2020. DOI: 10.1111/ECI.13431. PMID:33065765 online ahead of print. **IF: 11.846**

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Diffusion Activities

Conferences

- L. Badimon. Moderator. Mesa 1: Modelización de enfermedades mediante edición génica. Reunión técnica TerCel; 17 January 2020
- L. Badimon. Taller. El efecto del consumo moderado de bebidas fermentadas en la salud cardiovascular. Congreso SEMERGEN-SEFAC; 25 January 2020
- L. Badimon. Special lecture: Research in new antithrombotic agents. What's in the pipeline? EUROIMAT2020-SEC; 21 February 2020
- G. Vilahur. Nuevas estrategias destinadas a favorecer la cardioprotección tras un infarto limitar la progresión hacia la insuficiencia cardiaca. Centro Investigaciones Medicina Aplicada, Pamplona, February 2020
- G. Vilahur. Investigación en tratamiento antitrombotico. Nuevas dianas terapéuticas y fármacos en desarrollo. Master de postgrado en prevención secundaria. Sociedad Española de Cardiología, Madrid; January-May 2020
- G. Vilahur. Novel approaches to protect the ischemic heart: blocking the pathway to heart failure. 84th Annual Scientific Meeting Japanese Circulation Society, July 2020
- L. Badimon. Stress sensor protein DJ-1 and myocardial injury after myocardial infarction. 4th JCS Council Forum on Basic Cardiovascular Research (BCVR2020); September 2020
- L. Badimon. Microvesicles and endothelial activation. EAS Webinar "Lipids and atherosclerosis in COVID era"; 4 October 2020
- L.Badimon. Moderator. Valoración del riesgo CV en la HF: De la genética a los predictores biológicos. V Symposium virtual sobre Hipercolesterolemia Familiar: "Cómo reducir la carga clínica y de salud pública"; On-line 8 October 2020
- L. Badimon. Efectos lipídicos y no lipídicos de los ácidos omega 3. Encuentros Virtuales. Sociedad Española de Arteriosclerosis. 29 October 2020
- G. Vilahur. HDL: el eterno rookie. e-Congreso de la Sociedad Española de Cardiologia 2020 de la Salud Cardiovascular. October 2020
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- L. Badimon ¿En busca de nuevos fármacos o de nuevas indicaciones para medicamentos existentes? e-Congreso de la Sociedad Española de Cardiología 2020 de la Salud Cardiovascular. October 2020
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- G. Vilahur. Alteraciones hemostáticas en la diabetes tipo II y síndrome metabólico. Hospital Universitari de la Vall d'Hebron, November 2020
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Abstracts

- Vilahur G, Arzanauskaite M, Sutelman P, Ben-Aicha S,Gutiérrez M, Casaní L, Hidalgo A, Fjellström O, Carlsson L, Badimon L. Administration of a soluble ADPase, AZD3366, on top of ticagrelor confers additional cardioprotective benefits to that of ticagrelor alone. European Society of Cardiology Congress (Virtual Experience). August 2020
- Sutelman P, Vilahur G, Casaní L, Badimon L. The role of nutritional additives in prevention: dietary supplementation with Spirulina reduces myocardial damage and improves cardiac function post-myocardial infarction in swine. European Society of Cardiology Congress (Virtual Experience). August 2020

AREA 1 · Cardiovascular Diseases

Biomarkers for Cardiovascular Disease

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Main Lines of Research

- The main line of research refers to the identification and characterization of key molecular and cellular biomarkers of atherothrombosis and ischaemic heart disease, with potential use in prevention, disease diagnosis, risk stratification, and treatment. In general, the research activities focus on cardiovascular disease, vascular remodelling and atherosclerosis, thrombosis, risk factors, and ischaemic and heart disease, covering studies at cellular, pre-clinical and clinical level. Moreover, current experimental studies focus on myocardial remodelling post-infarction and its association with scar evolution following ischaemic events.

Scientific Challenges

- Advance research aiming to identify and characterize new biomarkers of tissue remodelling, vascular injury, atherothrombotic disease and/or ischaemic, coronary and cerebrovascular syndromes, using postgenomic techniques.
- Generate new information on extracellular vesicles (microvesicles / exosomes) due to their specific features as carriers of RNAs (miRNA, lncRNAs and mRNAs) and proteins derived from parental cells, providing precise bioprints of defined pathophysiological scenarios and consequently their being ideal candidates for biomarkers of disease evolution.
- Identification of cardiovascular disease-associated soluble (serum, plasma, urine) and microvesicles or lipoprotein-related molecular biomarkers using proteomic technologies based on liquid chromatography / bidimensional electrophoresis and mass spectrometry, lipidomic approaches via mass spectrometry coupled with ultra-performance liquid chromatography, and transcriptomic (mRNA, miRNA) studies based on array-systems and real-time PCR.
- Validate biomarkers identified in the diagnosis and prognosis of cardiovascular and/or cerebrovascular disease using specific quantitative techniques (confocal microscope, ELISA, multiplex assays, etc).
- Characterize molecular and functional mechanisms for selected biomarkers in cardiovascular pathology and myocardial remodelling (biology of systems).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Molecular Pathology and Therapeutic of Ischemic and Atherothrombotic Diseases (PI: Lina Badimon; Gemma Vilahur)
- Pharmacological Research in Humans (PI: Rosa M Antonijoan)
- Clinical and Translational Cardiology (Xavier Garcia-Moll, Alessandro Sionis; Laura López)
- Molecular Basis Cardiovascular Risk (PI: Francisco Blanco Vaca; Joan Carles Escolà)
- Internal Medicine Department, Infectious Diseases Unit (PI: Pere Domingo)

External Collaborations

National Collaborations

- CIBER in the specific area of Cardiovascular Diseases (CIBERCV). CIBER-CB16/11/00411. Instituto de Salud Carlos III. CIBER. Since 2017 (Member of the Research Team 02)
- "Red Terapia Celular" - TERCEL - (RD16/0011/018). Instituto de Salud Carlos III - European Regional Development Fund. Since 2017.
- Fundación Hipercolesterolemia Familiar. Madrid. (Pedro Mata, Rodrigo Alonso, Leopoldo Pérez-Isla and other members of SAFE-HEART).
- Department of Rheumatology, Consorci Sanitari de Terrassa (CST). Terrassa, Barcelona (Carmen García-Gómez).
- Internal Medicine Department Lipids and Vascular Risk Units, University Hospital of Bellvitge, Hospitalet de Llobregat, Barcelona (Xavier Pinto).
- UCERV-UCAMI, Hospital Virgen del Rocío, Sevilla (Ovidio Muñiz).
- Department of Internal Medicine, Hospital Abente y Lago, A Coruña (José Luis Díaz-Díaz).
- Department of Internal Medicine. Hospital Clinic, Barcelona (Ramon Estruch).
- Lipids Clinic, Department of Endocrinology, Hospital Clinic, Barcelona (Daniel Zambon).
- Internal Medicine Department, University Hospital of Bellvitge, Hospitalet de Llobregat, Barcelona (Francesc Formiga).
- Department of Cardiology, Thorax Institute, Hospital Clínic, University of Barcelona (Salvatore Brugaletta, Victoria Martin-Yuste, Clarissa Cola, Manel Sabaté).

International Collaborations

- Platelet Research Center, Faculty of Health Sciences, University of Talca, Chile (Ivan Palomo, Eduardo Fuentes).
- TransBioLine consortium (IMI-Project).
- COVIRNA consortium (EU-Project).
- School of Healthcare Science, Manchester Metropolitan University, Manchester, United Kingdom (Mark Slevin).

Active Grants

- Maria Teresa Padró Capmany. Reparación de la matriz estructural miocárdica en el corazón infartado: Papel regulador de la Adipsina, una proteína de inmunidad innata asociada al matrisoma de la matriz extracelular. PI19/01687. Instituto de Salud Carlos III. Duration: 2020-2022. 147,000 €.
- Lina Badimon, Teresa Padró. Translational Safety Biomarker Pipeline Project (TRansBioLine). European Commission. IMI-JU (IMI2-2017-13-11). Duration: 2019-2024. 182,600 €.
- Lina Badimon, Teresa Padró, Gemma Vilahur. Prevention of Vascular Cognitive Impairment through Early. Detection of Cardiovascular Diseases (ERA-CVD Joint Transnational Call 2020). Instituto de Salud Carlos III. Duration: 2021-2023. 174,978.10 €.
- Lina Badimon, Teresa Padró. Efectos del probiótico "AB-Life" sobre la cantidad y perfil de ácidos biliares, y el perfil lipídico y metabólico en sujetos sanos con sobrepeso moderado. AB-BIOTICS. Duration: 2019-2021. 250,592.4 €

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

Grants Awarded in 2020

- Lina Badimon, Teresa Padro, Gemma Vilahur, Gemma Arderiu. COVIRNA: A diagnostic test to improve surveillance and care of COVID-19 patients. EU-Commission. H2020-SC1-PHE-CORONAVIRUS-2020-2 / H2020-SC1-PHECORONAVIRUS-2020-2-CNECT. 101016072. Duration: 2020-2022. 250,000 €.
- Lina Badimon, Gemma Vilahur, Gemma Arderiu, Teresa Padró. Network of excellence for the development of advanced therapies for the treatment of myocardial infarctionsbased on regenerative medicine and 3D printing. European Commission - Interreg Sudoe (SOE4/P1/E1063). Duration: 2021-2023. 174,978.10 €

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

Awards

- Maria Teresa Padró Capmany. Protecting immunomodulation in healthy adults: effects of beer intake on the inflammasome. Award of The Dutch Beer Institute (Research Grant 2020). Award: 5,000€
- Maria Teresa Padró Capmany. Chairperson-Elect (2020-2022) of the Working Group on Microcirculation and Coronary Pathophysiology at the European Society of Cardiology (ESC).
- Maria Teresa Padró Capmany. General Secretary (2020-2024) of the European and Mediterranean League against Thrombotic Diseases (EMLTD)

Patents

- Lina Badimon Maestro, Judit Cubedo Ràfols, Teresa Padró Capmany. Methods and kits for the diagnosis and risk stratification of patients with ischemia. WO2017/178521. International. 19/10/2017.
- Lina Badimon Maestro, Judit Cubedo Ràfols, Gemma Vilahur, Teresa Padró. Prevention and/or treatment of ischemia or ischemia/reperfusion injury. WO/2017/157958. International. 23/01/2019.
- Lina Badimon, Judit Cubedo, Teresa Padró. Apolipoprotein J isoforms as biomarkers of organ damage. EP16382167.1. National – Spain. 12/04/2016.
- Lina Badimon, Judit Cubedo, Teresa Padro, Antibodies specific for glycosylated APOJ and uses thereof. PCT/EP2019/078855. Internacional. 30/04/2020.

Transfer Products

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

Scientific Production

Total Impact Factor: 109.400 · Mean Impact Factor: 9.117

Badimon L, Luquero A, Crespo J, Peña E, Borrell-Pages M. PCSK9 and LRP5 in macrophage lipid internalization and inflammation. (2020) CARDIOVASC RES. 2020 Sep 29:cvaa254. DOI: 10.1093/cvr/cvaa254. Online ahead of print. PMID: 32991689 **IF: 8.188**

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Ben-Aicha S, Escate R, Casaní L, Padró T, Peña E, Arderiu G, Mendieta G, Badimón L, Vilahur G. High-density lipoprotein remodelled in hypercholesterolaemic blood induce epigenetically driven down-regulation of endothelial HIF-1α expression in a preclinical animal model. (2020) CARDIOVASC RES. 2020 Jun 1;116(7):1288-1299. DOI: 10.1093/cvr/cvz239. PMID: 31504272. **IF: 8.188**

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HIV-1 Matrix Protein p17. (2020) INT J MOL SCI. 2020 Mar 16;21(6):2022. DOI: 10.3390/ijms21062022. PMID: 32188077. **IF: 4.556**

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Escate R, Padró T, Suades R, Camino S, Muñiz O, Diaz-Diaz JL, Sionis A, Mata P, Badimon L. High miR-133a levels in the circulation anticipates presentation of clinical events in familial hypercholesterolaemia patients. (2020) CARDIOVASC RES. 2021 Jan 1;117(1):109-122. DOI: 10.1093/cvr/cvaa039 .(Published on line 2020). PMID: 32061123.**IF: 8.188**

Padro T., Manfrini O., Bugiardini R., Canty J., Cenko E., De Luca G., Duncker D.J., Eringa E.C., Koller A., Tousoulis D., Trifunovic D., Vavlukis M., De Wit C., Badimon L., ESC Working Group on Coronary Pathophysiology and Microcirculation position paper on 'coronary microvascular dysfunction in cardiovascular disease' (2020) CARDIOVASC RES, 116 (4), 741-755. **IF: 8.1680**

Padro T, Muñoz-Garcia N, Peña E, Badimon L. Sex differences and emerging new risk factors for atherosclerosis and its thrombotic complications. (2020) CURR PHARM DES. 2020 Nov 17. DOI: 10.2174/1381612826666201118094209. Online ahead of print. PMID: 33213315. **IF: 2.412**

Perez de Isla L., Arroyo-Olivares R., Alonso R., Muniz-Grijalvo O., Diaz-Diaz J.L., Zambon D., Fuentes F., Mata N., Piedecausa M., Manas M.D., Sanchez Munoz-Torrero J.F., Miramontes-Gonzalez J.P., De Andres R., Mauri M., Aguado R., et al. Incidence of cardiovascular events and changes in the estimated risk and treatment of familial hypercholesterolemia: the SAFEHEART registry Incidencia de eventos cardiovasculares y cambios en el riesgo estimado y en el tratamiento de la hipercolesterolemia familiar: registro SAFEHEART (2020) REV ESP CARDIOL, 73 (10), 828-834. **IF: 4.6420**

Rothenbacher D., Rehm M., Iacoviello L., Costanzo S., Tunstall-Pedoe H., Belch J.J.F., Soderberg S., Hultdin J., Salomaa V., Jousilahti P., Linneberg A., Sans S., Padro T., Thorand B., Meisinger C., Kee F., McKnight A.J., Palosaari T., Kuulasmaa K., Waldeyer C., Zeller T., Blankenberg S., Koenig W., Contribution of cystatin C- and creatinine-based definitions of chronic kidney disease to cardiovascular risk assessment in 20 population-based and 3 disease cohorts: the BiomarCaRE project (2020) BMC MED, 18 (1). **IF: 6.7820**

Vaccarino V., Badimon L., Bremner J.D., Cenko E., Cubedo J., Dorobantu M., Duncker D.J., Koller A., Manfrini O., Milicic D., Padro T., Pries A.R., Quyyumi A.A., Tousoulis D., Trifunovic D., Vasiljevic Z., de Wit C., Bugiardini R., Depression and coronary heart disease: 2018 position paper of the ESC working group on coronary pathophysiology and microcirculation (2020) EUR HEART J, 41 (17), 1687-1696. **IF: 22.6730**

Books or Chapters with ISBN

- Padro T, Vilahur G, Badimon L. Hypercholesterolemia, lipid-lowering strategies and microcirculation. (Chapter 16). In: Microcirculation. From Bench to Bedside. Edit: Dorobantu M, Badimon L. Ed. Springer Nature Switzerland AG; pp 253-269; 2020. ISBN-13 : 978-3030281984

Diffusion Activities

Invited Presentations: International / Spanish Conferences

Congresses

- Teresa Padró. Cardiovascular y efecto del consumo moderado de bebidas fermentadas. XV Congreso Autonómico SEMERGEN. Cantabria (Santander), 30 January-1 February 2020
- Teresa Padró. La implicación de las ciencias "ómicas" en la medicina personalizada. Simposio Obesidad y Enfermedad Cardiometabólica, e-Congreso de la Sociedad Española de Cardiología (e-CongresoSEC2020). 18-21 October 2020.
- Teresa Padró. Efectos del consumo moderado de bebidas fermentadas en la salud cardiovascular. IV Congreso Virtual FESNAD. Zaragoza. 3-6 November 2020.

Symposiums

- Teresa Padró. MicroRNAS circulantes: Nuevos biomarcadores en la progresión de enfermedad aterotrombótica en la HF. Symposium virtual sobre Hipercolesterolemia Familiar: "Cómo reducir la carga clínica y de salud pública" (Virtual). 8 October 2020

AREA 1 · Cardiovascular Diseases

Regulation of Cardiac Rhythm and Contraction

Coordinator
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Members
Casabella Ramón, Sergi (CSIC)
Izquierdo Castro, Paloma (CSIC)
Llach Martínez, Ana (IR)

Main Lines of Research

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

Scientific Challenges

The goal is to consolidate the group as a leader in research on calcium handling in atrial fibrillation and to establish it within other lines of research by including emerging technology and research fields. Specifically we aim to:

- Develop computational tools and models to improve the analysis and understanding of intracellular calcium handling in cardiac myocytes.
- Incorporate emerging technology, such as stretching and measurements of force development in single cardiomyocytes.
- Consolidate current national and international collaborations and establish new strategic collaborations within emerging fields of research such as the use of super-resolution fluorescence imaging (STORM, STED-techniques) and the detection and role of Reactive Oxygen Species in diseased cardiomyocytes.
- Secure international funding for the incorporation of scientific expertise and participation in multidisciplinary international research projects.

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

National Collaborations

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

International Collaborations

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

Active Grants

- Ana Llach Martínez. Receptors de rianodina com a nova diana per al tractament de la fibril·lació auricular. SLT002/16/00074. Departament de Salut. Duration: 2017-2020. 103,907.80 €.
- Leif Hove-Madsen. Coordinated research project on "Filling the translational gap: Single nucleotide polymorphisms as biomarkers and targets for personalized treatment of electrophysiological defects in atrial fibrillation". SAF2017-88019-C3-1-R. Duration: 2018-2020. 121,000 €.
- Leif Hove-Madsen. Pre Consolidated Reserach Group on "Analysis and Control of Cardiac Rhythm". SGR-2017-1769 GRpreC. Duration: 2018-2020. 15,000 €.

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

Scientific Production

Total Impact Factor: 10.124 · Mean Impact Factor: 3.375

Canes L., Marti-Pamies I., Ballester-Servera C., Herraiz-Martinez A., Alonso J., Galan M., Nistal J.F., Muniesa P., Osada J., Hove-Madsen L., Rodriguez C., Martinez-Gonzalez J., Neuron-derived orphan receptor-1 modulates cardiac gene expression and exacerbates angiotensin II-induced cardiac hypertrophy (2020) CLIN SCI, 134 (3), 359-377. **IF: 5.2230**

Lin E., Shafaattalab S., Gill J., Al-Zeer B., Craig C., Lamothe M., Rayani K., Gunawan M., Li A.Y., Hove-Madsen L., Tibbits G.F., Physiological phenotyping of the adult zebrafish heart (2020) MAR GENOM, 49. **IF: 1.6720**

Soliman H, Nyamandi V, Hove-Madsen L, MacLeod KM. ROCK2 as a novel target for diabetic cardiomyopathy. INT J CARDIOL. 2020 Jan 15;299:206. doi: 10.1016/j.ijcard.2019.10.017. **IF: 3.229**

Diffusion Activities

- Jimenez-Sabado, V; Casabella, S; Izquierdo, P; Tarifa, C; Llach, A; Colino, H; Nolla-Colomer, C; Ramirez, O; Benitez, R; Tauron, M; Rodriguez-Font, E; Cinca, J; Hove-Madsen, L. Treatment with beta-blockers normalizes RyR2 phosphorylation and calcium spark activity in atrial myocytes from patients with atrial fibrillation. EUROPEAN HEART JOURNAL; Vol: 41; pp: 3691-3691 Supl 2; 2020.
- Nolla-Colomer, C; Tarifa, C; Llach, A; Jimenez-Sabado, V; Vallmitjana, A; Casabella, S; Colino, H; Izquierdo, P; Casellas, S; Rodriguez-Font, E; Cinca, J; Chen, SRW; Benitez, R; Hove-Madsen, L. Pathological phosphorylation of the ryanodine receptor at s2808 increases the number of individual clusters activated per calcium spark and the calcium released per cluster. EUROPEAN HEART JOURNAL; Vol: 41; Pp. 3689-3689 Supl. 2; 2020
- Colomer, CN; Vallmitjana, A; Martinez, AH; Lage, HC; Chen, SRW; Hove-Madsen, L; Benitez, R. Detection of Calcium Release from Individual RyR2 Clusters in Cardiomyocites. BIOPHYSICAL JOURNAL; Vol. 118; Nr 3; Pp. 173A-173A Supl. 1; 2020

AREA 1 · Cardiovascular Diseases

Lipids and Cardiovascular Pathology

Coordinator
Llorente Cortés, Concepción Vicenta (CSIC)
cllorente@santpau.cat

Members
Benítez Amaro, Aleyda (CSIC)
Claudi, Lene (External entity)
García Rodríguez, Jesús Eduardo (IR)
Ni, Jiaqui (CSIC)

Main Lines of Research

- Molecular mechanisms involved in the modulation of LRP1 by cardiovascular risk factors.
- Impact of LRP1 functionality on vascular and myocardial cholesterol accumulation.
- Impact of lipoproteins on LRP1-intracellular signalling pathways under normoxic and hypoxic conditions.
- Alterations in LRP1 expression and LRP1-intracellular signalling pathways in hypoxia/ischaemia in in vitro and in vivo models.
- Lipids and diabetic cardiomyopathy.
- Lipids and cancer.
- LRP1 in cardiometabolic alterations.
- Circulating non-coding RNAs as biomarkers of cardiovascular disease.
- Non-coding RNAs as biomarkers of coronary artery disease.
- Non-coding RNAs as biomarkers of cardiomyopathy.

Scientific Challenges

- Integrate genomic and functional in vivo studies to validate LRP1 as a new therapeutical target and potential biomarker in cardiometabolic diseases
- Identify and validate circulating non-coding RNAs as potential biomarkers in cardiovascular diseases
- Maintain and strengthen the relationship with clinicians regarding translation in cardiometabolic diseases.
- Maintain and strengthen national and international collaborations to set up future applications for European funding.
- Establish collaborations with companies with the aim of developing new products useful for the prognosis, diagnosis and treatment of cardiometabolic diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Cardiovascular Biochemistry (PI: José Luís Sánchez-Quesada)
- Molecular Pathology and Therapeutic of Ischaemic and Atherothrombotic Diseases (PI: Lina Badimon)
- Clinical and Translational Cardiology (PI: José María Guerra)
- Metabolic Bases of Cardiovascular Risk (PI: Francisco Blanco, Joan Carles Escolà)
- Molecular Bases of Disease (PI: Pablo Fuentes)
- Clinical Oncology (PI: Agustí Barnadas)
- Molecular Pathology of Gynecologic Cancer (PI: Enrique Lerma)
- Inflammatory Diseases (PI: Cándido Juárez)
- Nuclear Medicine (PI: Albert Flotats)

External Collaborations

National Collaborations

- José Ramón González Juanatey. Hospital Universitario Santiago de Compostela.
- Antonio Zorzano. IRB Barcelona.
- Dolors Serra. Facultad de Farmacia. Universidad de Barcelona.
- Pilar Navarro. IIBB-CSIC. Barcelona.
- Eduard Sabidó. Centro de Regulación Genómica. Barcelona.

International Collaborations

- Colette Lacabanne, Valerie Samouillan. Group Physique des Polymères, Institut Carnot, CIRIMAT, Université Paul Sabatier. Toulouse, France.
- Gustavo Alberto Chiabrando. CIBICI-CONICET/FCQ-Universidad Nacional de Córdoba, Argentina.
- Laurent Duca. Université de Reims Champagne-Ardenne, Reims, France.
- Muriel Laffargue. Institut National de la Santé et de la Recherche Médicale (INSERM), UMR 1048, Institute of Metabolic and Cardiovascular Diseases, Toulouse, France.

Active Grants

- Jose Carlos Fernández-Checa. Red de Investigación Enfermedades Metabóloicas y Cáncer. Ministerio de Economía y Competitividad. RED2018-102799-T (REDEMyC). Duration: 2019-2021. 30,000 €.
- Vicenta Llorente Cortés. The link between myocardial LRP1 and circulating levels of natriuretic peptide ANP as a source of new diagnostic and therapeutic options in type 2 diabetes. PI18/01584. Instituto de Salud Carlos III. Duration: 2019-2022. 168,795 €.
- Rocío Toro. Aplication of transcriptomics on the diagnostic-therapeutic approach of familiar dilated miocardiopathy: Aproximation to the cardiovascular personalized medicine. PI-0048-2017. Subvenciones para la financiacion de la I+D+i biomédica y en ciencias de la salud en la provincia de Cádiz. Duration: 2018-2020.

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

Grants Awarded in 2020

- Concepción Vicenta Llorente Cortés. Translational Molecular Imaging for Detection of Cholesterol Entrapment in the Vasculature with 68Ga-labeled LRP1-derived Peptides (PlaqueCHOL). BBVA 2019, Fundación BBVA. Duration: 2020-2023. 113,637 €.

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

Patents

- Tarragó Clua, María Teresa. IPROTEOS, S.L.
- Prades Cosano, Roger. IPROTEOS, S.L.
- Pallara, Chiara. IPROTEOS, S.L.
- LLORENTE CORTÉS, Vicenta. Instituto Investigaciones Biomédicas de Barcelona (IIBB-CSIC). Vascular Cholesterol Inhibitors and use Thereof. EP3736284. Solicitud de Patente Europea, 19/10/2020

Scientific Production

Total Impact Factor: 79.604 · Mean Impact Factor: 6.123

Actis Dato V, Benitez-Amaro A, de Gonzalo-Calvo D, Vazquez M, Bonacci G, Llorente-Cortés V, Chiabrando GA. LRP1-Mediated AggLDL Endocytosis Promotes Cholesteryl Ester Accumulation and Impairs Insulin Response in HL-1 Cells. (2020) CELLS 10 182. **IF: 4.829**

Belmonte T., Mangas A., Calderon-Dominguez M., Quezada-Feijoo M., Ramos M., Campuzano O., Gomez S., Pena M.L., Cubillos-Arango A.M., Dominguez F., Llorente-Cortes V., de Gonzalo-Calvo D., Toro R., Peripheral microRNA panels to guide the diagnosis of familial cardiomyopathy (2020) TRANSL RES, 218, 1-15. **IF: 5.4110**

Benitez-Amaro A., Revuelta-Lopez E., Bornachea O., Cedo L., Vea A., Herrero L., Roglans N., Soler-Botija C., de Gonzalo-Calvo D., Nasarre L., Camino-Lopez S., Garcia E., Mato E., Blanco-Vaca F., Bayes-Genis A., Sebastian D., Laguna J.C., Serra D., Zorzano A., Escola-Gil J.C., Llorente-Cortes V., Low-density lipoprotein receptor-related protein 1 deficiency in cardiomyocytes reduces susceptibility to insulin resistance and obesity (2020) METABOLISM, 106. **IF: 6.1590**

Bornachea O., Benitez-Amaro A., Vea A., Nasarre L., de Gonzalo-Calvo D., Escola-Gil J.C., Cedo L., Iborra A., Martinez-Martinez L., Juarez C., Camara J.A., Espinet C., Borrell-Pages M., Badimon L., Castell J., Llorente-Cortes V., Immunization with the Gly1127-Cys1140 amino acid sequence of the LRP1 receptor reduces atherosclerosis in rabbits. Molecular, immunohistochemical and nuclear imaging studies (2020) THERANOSTICS, 10 (7), 3263-3280. **IF: 8.5790**

Calderon-Dominguez M., Belmonte T., Quezada-Feijoo M., Ramos-Sanchez M., Fernandez-Armenta J., Perez-Navarro A., Cesar S., Pena-Pena L., Vea A., Llorente-Cortes V., Mangas A., de Gonzalo-Calvo D., Toro R., Emerging role of microRNAs in dilated cardiomyopathy: evidence regarding etiology (2020) TRANSL RES, 215, 86-101. **IF: 5.4110**

Cedo L., Metso J., Santos D., Garcia-Leon A., Plana N., Sabate-Soler S., Rotllan N., Rivas-Urbina A., Mendez-Lara K.A., Tondo M., Girona J., Julve J., Pallares V., Benitez-Amaro A., Llorente-Cortes V., Perez A., Gomez-Coronado D., Ruotsalainen A.-K., Levonen A.-L., Sanchez-Quesada J.L., Masana L., Kovanen P.T., Jauhiainen M., Lee-Rueckert M., Blanco-Vaca F., Escola-Gil J.C., LDL receptor regulates the reverse transport of macrophage-derived unesterified cholesterol via concerted action of the HDL-LDL Axis: Insight from mouse models (2020) CIRC RES, 127 (6), 778-792. **IF: 14.4670**

Dégano IR, Camps-Vilaró A, Subirana I, García-Mateo N, Cidad P, Muñoz-Aguayo D, Puigdecanet E, Nonell L, Vila J, Crepaldi FM, de Gonzalo-Calvo D, Llorente-Cortés V, Pérez-García MT, Elosua R, Fitó M, Marrugat J. Association of Circulating microRNAs with Coronary Artery Disease and Usefulness for Reclassification of Healthy Individuals: The REGICOR Study. (2020) J CLIN MED 9 1402. **IF: 5.583**

De Gonzalo-Calvo D., Barroeta I., Nan M.N., Rives J., Garzon D., Carmona-Iragui M., Benejam B., Videla L., Fernandez S., Altuna M., Valldeneu S., Blesa R., Lleo A., Blanco-Vaca F., Fortea J., Tondo M., Evaluation of biochemical and hematological parameters in adults with Down syndrome (2020) SCI REP-UK, 10 (1). **IF: 3.9980**

López-Canoa JN, Couselo-Seijas M, Baluja A, González-Melchor L, Rozados A, Llorente-Cortés V, de Gonzalo-Calvo D, Guerra JM, Vilades D, Leta R, Martínez-Sande JL, García-Seara FJ, Fernández-López XA, González-Juanatey JR, Eiras S, Rodríguez-Mañero M. (2020) Sex-related differences of fatty acid-binding protein 4 and leptin levels in atrial fibrillation. (2020) EUROPACE 15:euaa284. **IF: 4.045**

Meneses-Salas E, García-Melero A, Kanerva K, Blanco-Muñoz P, Morales-Paytuvi F, Bonjoch J, Casas J, Egert A, Beevi SS, Jose J, Llorente-Cortés V, Rye KA, Heeren J, Lu A, Pol A, Tebar F, Ikonen E, Grewal T, Enrich C, Rentero C. Annexin A6 modulates TBC1D15/Rab7/StARD3 axis to control endosomal cholesterol export in NPC1 cells. (2020) CELL MOL LIFE SCIENCE 77 2839-2857. **IF: 6.496**

Samouillan V, Martinez de Lejarza Samper IM, Benitez Amaro A, Vilades D, Dandurand J, Casas J, Jorge E, de Gonzalo-Calvo D, Gallardo A, Lerma E, Guerra JM, Carreras F, Leta R, Llorente Cortes V. Biophysical and Lipidomic Biomarkers of Cardiac Remodeling Post-Myocardial Infarction in Humans. (2020) BIOMOLECULES 22 1471. **IF: 4.694**

Vilades D., Martinez-Camblor P., Ferrero-Gregori A., Bar C., Lu D., Xiao K., Vea A., Nasarre L., Sanchez Vega J., Leta R., Carreras F., Thum T., Llorente-Cortes V., de Gonzalo-Calvo D., Plasma circular RNA hsa_circ_0001445 and coronary artery disease: Performance as a biomarker (2020) FASEB J, 34 (3), 4403-4414. **IF: 4.9660**

Weber M, Mera P, Casas J, Salvador J, Rodríguez A, Alonso S, Sebastián D, Soler-Vázquez MC, Montironi C, Recalde S, Fucho R, Calderón-Domínguez M, Mir JF, Bartrons R, Escola-Gil JC, Sánchez-Infantes D, Zorzano A, Llorente-Cortes V, Casals N, Valentí V, Frühbeck G, Herrero L, Serra D. Liver CPT1A gene therapy reduces diet-induced hepatic steatosis in mice and highlights potential lipid biomarkers for human NAFLD. (2020) FASEB J. 34 11816-11837. **IF: 4.9660**

Other Publications

- Benitez Amaro A; Pallara C; Nasarre L; Ferreira R; de Gonzalo Calvo D; Prades R; Tarrago T; Llorente Cortes V. Development of Innovative Antiatherosclerotic Peptides through the Combination of Molecular Modeling and a Dual (Biochemical-Cellular) Screening System. (2020) ADVANCED THERAPEUTICS. 3(8): 2000037. doi.org/10.1002/adtp.202000037

Diffusion Activities

Dissemination to Society

- http://www.recercasantpau.cat/es/actualidad/sant-pau-publica-a-theranostics/
- http://www.recercasantpau.cat/es/actualidad/institut-de-recerca-de-sant-pau-publica-a-metabolism/
- http://www.recercasantpau.cat/actualitat/institut-de-recerca-de-sant-pau-publica-a-metabolism/
- https://twitter.com/IIBSantPau/status/1237648532661833729
- https://www.fbbva.es/noticias/concedidas-5-ayudas-a-equipos-de-investigacion-cientifica-en-biomedicina/
- https://www.fbbva.es/equipo/plaquechol-una-nueva-herramienta-para-predecir-el-riesgo-cardiovascular/
- https://webedit.uab.cat/web/news-detail/innovative-antibodies-to-treat-cardiovascular-disease-1345680342044.html?noticiaid=1345830299631

Scientific Dissemination

- Benítez Amaro, Aleyda; Pallara, Chiara; Prades, Roger; Sánchez Quesada, José Luis; Vilades Medel, David; Leta Petracca, Rubén; Carreras Costa, Francesc; Tarragó, Teresa; Escolà Gil, Joan Carles; Llorente Cortés, Vicenta. LRP1 derived peptides as a therapeutic strategy in atherosclerosis. Biochemical, in vitro and in vivo studies. Oral communication. 88th EAS Congress. 4-7 October 2020.

AREA 1 · Cardiovascular Diseases

Genomics of Complex Diseases

Coordinator
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Members
Alcolea Ruiz, Sonia (IR)
Aloy Ortiz, Carme (external entity)
Camacho Pérez de Madrid, María Mercedes (IR)
Cardenas Yebra, Antonio (IR)
Dilme Muñoz, Jaume Felix (FGS)
Escudero Rodríguez, José Román (FGS)
Fité Matamoros, Joan (FGS)
Llonga Tejedor, Natalia (IR)
Lloret Cano, María Dolores (external entity)
López Moreno, Sonia (IR)
Martínez Pérez, Ángel (IR)
Paüls Verges, Ferran (IR)
Rodríguez Rius, Alba (IR)
Romero Carro, Josep Maria (FGS)
Sabater Lleal, Maria (IR)
Soto Carricas, Begoña (FGS)
Temprano Sagrera, Gerard (IR)

Main Lines of Research

Angiology and Vascular Biology

- TAGA Project: Genomic basis of Abdominal Aortic Aneurysm.

Thrombosis and Thrombosis and Cancer

- GAIT Project: Genetic Analysis of Idiopathic Thrombophilia.
- RETROVE Project: Risk of Venous Thromboembolic Disease.
- OncoThromb Project: New biomarkers related with Thrombosis and Cancer.
- AIRTOP and MIRTO Projects: Assessment of the Individual Risk of Thrombosis in Oncology Patients.

Thrombosis and COVID-19

- PRECIS_COVID-19 Project
- SCOURGE_COVID-19 Consortium
- EASI_Genomics Consortium
- Host Genetic Initiative HG_Consortium

Genomics in Sport Medicine

- MMIT Project (Health in sport and its limits): Marathons and Ultra-trail races. Biological, genetic and clinical impact.
- SHERPA_Everest Project. Exposition to extreme environmental hypoxia and its effect on the inflammatory and cardiopulmonary response: Biological, genetic and clinical impact.
- Xtreme-Genetics K2 project. Expedition to K2 peak. Biological, genetic and clinical impact.

Interdisciplinary Research Areas

- Bioinformatics (Data Science)
- Personalized Medicine

Scientific Challenges

- Analysis of Omics data (Genomics, transcriptomics, epigenomics) in the field of complex diseases with a translational approach in cooperation with clinical groups.
- Identify new biomarkers (genetic, epigenetic and/or plasmatic) that determine susceptibility to complex diseases.
- Identify new mechanisms involved in the development and progression of complex diseases.
- Development of predictive algorithms that integrate the genetic, biological and clinical information of the patients (Personalized Medicine).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Thrombosis and Haemostasis, Dr. J.C. Souto: GAIT, MIRTO, RETROVE Projects.
- Stroke Pharmacogenomics and Genetics, IR Sant Pau. "Effect of coagulation on recovery after stroke". Project. Dr. Israel Fernández Cadenas
- Neurology, Dr. J. Martí: MIRTO Project. Elena Jiménez: Lipoproteic biomarkers. ICTUS.
- Clinical Hematology, Dr. J. Sierra: MIRTO Project.
- Otorhinolaryngology. Dr. M Quer and Dr. X Leon. Prediction of response to head and neck cancer.
- Regulatory Mechanisms of Cardiovascular Remodeling. Dra. C Rodríguez. and Dra. Maria Galán
- Participation in CIBERCV, CIBER de Enfermedades Cardiovasculares. Dr. J González
- General and Digestive Surgery. Dra C. Balaguer.
- Clinical Pharmacology, Dra. M.A. Mangues, Mar Gomis: Cancer and Thrombosis Projects.

External Collaborations

- Clinical Oncology Department, Hospital Gregorio Marañón, Madrid. Dr. A. Muñoz: ONCOTHROMB, AIRTOP Projects.
- Clinical Department of Hematology and Hemostasis. University of Wien, Austria. Dra. Ingrid Pabinger. ONCOTHROMB, MIRTO Projects.
- Jochen Schwenk, SciLifeLab, Sweden: GAIT Project.
- Department of Genetics, University of Genève, Switzerland, Dr. M. Dermitzakis and Dr. Ana Viñuela: GAIT Project.
- Institute of Biological Psychiatry, Sankt Hans Hospital. Roskilde, Denmark, Dr. A. Buil: Bioinformatics of Complex diseases, GAIT Project.
- INSERM UMR_S1219 - Bordeaux Public Health Center. Bordeaux, France. Dr. D.A. Tregouet: GAIT, VEREMA Projects.

- Laboratory Haematology, Hospital Timone Marseille, France, Dr. P. Morange: GAIT, VEREMA Projects.
- Haematology Department, Karolinska Hospital, Sweden, Dr. J.Odeberg: VEREMA Project.
- Hospital Clínic de Barcelona. Neumology Service. Dr. O. Sibila. SUMMIT and SHERPA Projects
- Hospital Clínic de Barcelona, Otorhinolaryngology service. Dr. Francesc Xavier Avilés-Jurado
- Hospital Vall d'Hebron. Barcelona. Vascular Surgery Service. Dr. S. Bellmunt.
- Unit of Biophysics. Dpt of Biochemistry and Molecular Biology. Faculty of Medicine, UAB. Dr. Ramón Barnadas Rodríguez.
- Banc de Sang i Teixits (BST). Dr. F Vidal.
- Centre de Recerca en Enginyeria Biomèdica, Universitat Politècnica de Catalunya, Barcelona, Dr. A. Perera: SUMMIT Project.
- CAR, Centre d'Alt Rendiment, Sant Cugat. Dr. Francheck Drobnic: Sport Medicine Projects.
- CEGEN. Dr. Ángel Carracedo, Dra. Inés Quintela. SCOURGE COVID-19 Project
- CNAG. Dr. Ivo Gut. EASI COVID-19 Project
- National Institute of Bioinformatics. ISCIII. Madrid. Dr. Francisco Valencia
- Stanford University, School of Medicine. California. USA. HLA_ COVID-19 Proyect
- Paul de Vries, Nicholas L Smith. Working Haemostasia Group in The Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE) Consortium (US).
- Genetics Consortia GIANT: Global Lipids (GLGC) and AAAgen.
- INVENT consortium of Venous Thrombosis. Nicholas L Smith, David Tregouet
- Dr. Sergi Bellmunt (Hospital Vall d'Hebron) and Dra. Laura Calsina (Hospital del Mar). Novel omics approach to predict abdominal aortic aneurysm growth and rupture (OMIC-AAA) Project.
- Dr Rebecka Hultgren (KI), and Dr. Lars Maegdefessel (TUM), Karolinska Institutet, Stockholm and Technical University of Munich in the IDEA Project: Improving Diagnostic Efficiency in AAA Patients.
- Leo-Pharma Company. Prediction of Thrombosis Risk in cancer patients.
- GenIncode Company. Development of Genetic Diagnostics in Thrombosis.

Active Grants

- Alba Rodríguez Rius. Identificación de Mecanismos de Regulación de la Expresión Génica (microRNAS) en la Enfermedad Tromboembólica Venosa. 2017 FI_B 00673. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2020. 68,913.59 €.
- José Manuel Soria Fernández. Validación del Proyecto MIRTO (Modeling the Individual Risk of Thrombosis in Oncology). PI17/00059. Instituto de Salud Carlos III. Duration: 2018-2021. 112,000 €.
- Maria Sabater Lleal. Identification of novel biomarkers and genetic pathways involved in Abdominal Aortic Aneurysm. CP17/00142(P). Instituto de Salud Carlos III. Duration: 2018-2021. 99,000 €.
- Maria Sabater Lleal. Contratos de investigadores Miguel Servet tipo I 2017. CP17/00142. Instituto de Salud Carlos III. Duration: 2018-2023. 202,500 €.
- María Mercedes Camacho Pérez de Madrid. Laboratorio de Angiología, Biología Vascular e Inflamación. 2017 SGR 01243. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- José Manuel Soria Fernández. Unitat de Genòmica de Malalties Complexes. 2017 SGR 01736. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Josep Maria Romero Carro. Bases Genéticas de la Insuficiencia Venosa Crónica y su implicación en la Enfermedad Tromboembólica. FMM 2018. Fundación Mutua Madrileña. Duration: 2018-2020. 57,142.86 €.
- Maria Sabater Lleal. Population genomic variation, functional biology and the risk of venous thrombosis. HL134894. National Institute of Health (NIH). Duration: 2018-2021. 56,503.06 €.
- José Manuel Soria. KIR_HLA SARS-CoV-2_INM. HLA COVID-19 Consortium. Stanford University, School of Medicine (USA). Duration: 2020-2021.18.835 $.
- José Manuel Soria. European Advanced infraStructure for Innovative Genomics (EASI_Genomics) Consortium. Risk Prediction of Sepsis-Induced Coagulopathy in COVID-19 patients. H2020_EU. No 824110. EASI_19_P1012558. Duration: 2020-2021. 9,991,267 €.
- Mercedes Camacho. Biomarcadors lipoproteics per determinar la inflamació de la placa carotídia en l'ictus isquèmic. Fundació La Marató de TV3 201716. Duration: 2018-2020. 197,575 €.
- Mercedes Camacho. Nuevas estrategias terapéuticas en el manejo de la enfermedad arterial periférica y el aneurisma de aorta abdominal. PI18/00919 Instituto de Salud Carlos III. Duration: 2019-2021. 183,920 €.

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

Grants Awarded in 2020

- Maria Sabater Lleal. Nuevo enfoque ómico para predecir el crecimiento y la rotura del aneurisma aórtico abdominal. PID2019-109844RB-I00. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2023. 110,000 €.
- José Manuel Soria Fernández, Un enfoque genómico de e-Health en la trombosis asociada al cáncer (Proyecto ONCOTHROMB_2). PI20/00325, Instituto de Salud Carlos III. Duration: 2021-2023. 132,000 €.
- José Manuel Soria. Programa de Medicina de Precisión (IMPaCT). Data Science IMP/00019. ISCIII. Duration: 2021-2023. 4.549.380 €.
- Mercedes Camacho. Quantification of the interaction of mixed vesicles of phospholipids and a single chain metallosufactant (with CO releasing properties) with cell cultures. CELLS - ALBA Synchrotron 2020074409. Duration: 2021.

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

Doctoral Theses

- Alba Rodríguez Rius. Estudio de los mecanismos de regulación génica (micro-RNAs) en la Enfermedad Tromboembólica Venosa. Universitat de Barcelona. Director: Soria Fernández, José Manuel. Date of defense: 30/10/2020.
- Efrem González Jabalera. Aplicación clínica de la angiografía de perfusión en la revascularización de la arteriopatía obliterante. Universitat Autònoma de Barcelona. Director: Dilmé Muñoz, Jaume. Date of defense: 27/10/2020.
- Teresa Gallastegui Mozos. Expresión del CD146 en el AAA e identificación de su forma circulante como biomarcador diagnóstico de la enfermedad. Universitat Autònoma de Barcelona. Director: Camacho Pérez de Madrid, Mercedes. Date of defense: 27/11/2020.

Patents

- José Manuel Soria Fernández, Alba Rodríguez Rius, Juan Carlos Souto Andrés. MicroRNAs Markers of Thrombosis Conditions. EP20382151.7. European (UE). 02/03/2020.

Transfer Products

- José Manuel Soria (Co-founder y Chief Scientific Officer). Exheus (Expression in Health for Us). Programa ACCIó. Generalitat de Catalunya (ACE015/20/00034: (Exheus). 2020.

Scientific Production

Total Impact Factor: 171.521 · Mean Impact Factor: 11.435

Bennett J.A., Mastrangelo M.A., Ture S.K., Smith C.O., Loelius S.G., Berg R.A., Shi X., Burke R.M., Spinelli S.L., Cameron S.J., Carey T.E., Brookes P.S., Gerszten R.E., Sabater-Lleal M., de Vries P.S., Huffman J.E., Smith N.L., Morrell C.N., Lowenstein C.J., The choline transporter Slc44a2 controls platelet activation and thrombosis by regulating mitochondrial function (2020) NAT COMMUN, 11 (1). **IF: 12.1210**

Fité J, Gimenez E, Soto B, Artigas V, Escudero JR, Bellmunt S, et al. Systematic review on abdominal aortic aneurysm screening cost-efficiency and methodological quality assessment. INT ANGIOL 2020;39:000-000. DOI: 10.23736/S0392-9590.20.04547-2. PMID: 33086780. **IF: 2.080**

Georgakis MK, Malik R, Gill D, Franceschini N, Sudlow CLM, Dichgans M; INVENT Consortium,CHARGE Inflammation Working Group. Interleukin-6 Signaling Effects on Ischemic Stroke and Other Cardiovascular Outcomes: A Mendelian Randomization Study. CIRC GENOM PRECIS MED. 2020 Jun;13(3):e002872. DOI: 10.1161/CIRCGEN.119.002872. Epub 2020 May 12. PMID: 32397738; PMCID: PMC7299212. **IF: 4.063**

Goumidi L, Thibord F, Wiggins KL, Li-Gao R, Brown MR, van Hylckama Vlieg A, Souto JC, Soria JM, Ibrahim-Kosta M, Saut N, Daian-Bacq D, Olaso R, Amouyel P, Debette S, Boland A, Bailly P, Morrison A, Mook-Kanamori DO, Deleuze JF, Johnson AD, de Vries PS, Sabater-Lleal M, Chiaroni J, Smith NL, Rosendaal FR, Chasman DI, Tregouet D, Morange PE. Association of ABO haplotypes with the risk of venous thrombosis: impact on disease risks estimation. BLOOD. 2020 Dec 22:blood.2020008997. DOI: 10.1182/blood.2020008997. Epub ahead of print. PMID: 33512453. **IF: 17.794**

Kim-Hellmuth S, Aguet F, Oliva M, Muñoz-Aguirre M, Kasela S, Wucher V, Castel S, Hamel A, Viñuela A, Roberts A, Mangul A, Wen X, Wang G, Barbeira A, Garrido-Martín D, Nadel B, Zou Y, Bonazzola R, Quan J, Brown A, Martinez-Perez A, Soria JM, Getz G, Dermitzakis E, Small S, Stephens M, Xi H, Kyung Im H, Guigó R, Segrè A, Stranger B, Ardlie K, Lappalainen T. Cell type specific genetic regulation of gene expression across human tissues. SCIENCE 2020 Sep 11;369(6509):eaaz8528. DOI: 10.1126/science.aaz8528. PMID: 32913075. **IF: 41.846**

Méndez-Lara KA, Letelier N, Farré N, Diarte-Añazco EMG, Nieto-Nicolau N, Rodríguez-Millán E, Santos D, Pallarès V, Escolà-Gil JC, Vázquez Del Olmo T, Lerma E, Camacho M, Casaroli-Marano RP, Valledor AF, Blanco-Vaca F, Julve J. Nicotinamide Prevents Apolipoprotein B-Containing Lipoprotein Oxidation, Inflammation and Atherosclerosis in Apolipoprotein E-Deficient Mice. ANTIOXIDANTS (BASEL). 2020 Nov 21;9(11):1162. DOI: 10.3390/antiox9111162. PMID: 33233455; PMCID: PMC7700561. **IF: 5.014**

Navas-Madroñal M, Castelblanco E, Camacho M, Consegal M, Ramirez-Morros A, Sarrias MR, Perez P, Alonso N, Galán M, Mauricio D. Role of the Scavenger Receptor CD36 in Accelerated Diabetic Atherosclerosis. INT J MOL SCI. 2020 Oct 5;21(19):7360. DOI: 10.3390/ijms21197360. PMID: 33028031; PMCID: PMC7583063. **IF: 4.556**

Oliva M, Muñoz-Aguirre M, Kim-Hellmuth S, Wucher V, Gewirtz A, Cotter D, Parsana P, Kasela S, Balliu B, Viñuela A, Castel S, Mohammadi P, Aguet F, Zou Y, Khramtsova E, Skol A, Garrido-Martín D, Reverter F, Brown A, et al. The impact of sex on gene expression across human tissues. SCIENCE 2020. Sep 11;369(6509):eaba3066. DOI: 10.1126/science.aba3066. PMID: 32913072. **IF: 41.846**

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Peypoch O, Paüls-Vergés F, Vázquez-Santiago M, Dilme J, Romero J, Giner J, Plaza V, Escudero JR, Soria JM, Camacho M, Sabater-Lleal M. The TAGA Study: A Study of Factors Determining Aortic Diameter in Families at High Risk of Abdominal Aortic Aneurysm Reveal Two New Candidate Genes. J CLIN MED. 2020 Apr 24;9(4). pii: E1242. DOI: 10.3390/jcm9041242. PubMed PMID: 32344696. **IF: 3.303**

Rodriguez-Rius A., Lopez S., Martinez-Perez A., Souto J.C., Soria J.M., Identification of a Plasma MicroRNA Profile Associated with Venous Thrombosis (2020) ARTERIOSCL THROM VAS, 1392-1399. **IF: 6.6040**

Rodriguez-Rius A., Martinez-Perez A., Lopez S., Sabater-Lleal M., Souto J.C., Soria J.M., Expression of microRNAs in human platelet-poor plasma: analysis of the factors affecting their expression and association with proximal genetic variants (2020) EPIGENETICS-US, 15 (12), 1396-1406. **IF: 4.2510**

Rykaczewska U., Suur B.E., Rohl S., Razuvaev A., Lengquist M., Sabater-Lleal M., van der Laan S.W., Miller C.L., Wirka R.C., Kronqvist M., Gonzalez Diez M., Vesterlund M., Gillgren P., Odeberg J., Lindeman J.H., Veglia F., Humphries S.E., de Faire U., Baldassarre D., Tremoli E., Lehtio J., Hansson G.K., Paulsson-Berne G., Pasterkamp G., Quertermous T., Hamsten A., Eriksson P., Hedin U., Matic L., PCSK6 Is a Key Protease in the Control of Smooth Muscle Cell Function in Vascular Remodeling (2020) CIRC RES, 126 (5), 571-585. **IF: 14.4670**

Small A.M., Huffman J.E., Klarin D., Sabater-Lleal M., Lynch J.A., Assimes T.L., Sun Y.V., Miller D., Freiberg M.S., Morrison A.C., Rader D.J., Wilson P.W.F., Cho K., Tsao P.S., Chang K.-M., Smith N.L., O'Donnell C.J., De Vries P.S., Damrauer S.M., Mendelian Randomization Analysis of Hemostatic Factors and Their Contribution to Peripheral Artery Disease - Brief Report (2020) ARTERIOSCL THROM VAS, 380-386. **IF: 6.6040**

Other Publications

- León X, García J, Farré N, Majercakova K, Avilés-Jurado FX, Quer M, Camacho M. Predictive capacity of IL-8 expression in head and neck squamous carcinoma patients treated with radiotherapy or chemoradiotherapy. Acta Otorrinolaringol Esp. 2020 Sep 21:S0001-6519(20)30146-1. English, Spanish. DOI: 10.1016/j.otorri.2020.05.003. Epub ahead of print. PMID: 32972719

Diffusion Activities

Congresses, Lectures and Conferences

- Muñoz Martín AJ, Ruiz Zamorano M, Ortega Morán L, Seguí Solís E, Rubio Pérez J, Martínez Galán J, Fernández Pérez, I, Ferrer Pérez A, Martinez de Castro E, García Escobar I, Salgado Fernández M, Pachón Olmos V, Quintanar Verdúguez T, Castellón Rubio V, Agraso Busto S, Moreno Lucente I, Cárdenas Yebra A, Gras Peral I, Salas Pérez-Rasilla E, Soria Fernández JM. Análisis comparativo de scores clínicos de predicción de riesgo de enfermedad tromboembolica venosa (estudio observacional prospectivo). Oral Communication. Virtual Congress SEOM 2020. October 2020.
- Ruiz M, Muñoz AJ, Ortega L, Font C, Rubio J, Martínez J, Fernández I, Ferrer A, Martínez E, García I, Salgado M, Pachón V, Quintanar T, Castellón V, Rupérez AB, Moreno Lucente I, Cárdenas A, Gras I, Salas E, Soria JM. Análisis comparativo de scores clínicos de riesgo en la predicción de trombosis incidental en pacientes en tratamiento quimioterápico ambulatorio: resultados de la segunda cohorte prospectiva oncothromb12-01. XXXVI Congreso Nacional de la SETH. Virtual Congress, October 2020.
- Ruiz M, Muñoz AJ, Ortega L, Font C, Rubio J, Martínez J, Fernández I, Ferrer A, Martínez E, García I, Salgado M, Pachón V, Quintanar T, Castellón V, Boix V, Seguí E, Cárdenas A, Gras I, Salas E, Soria JM. Análisis comparativo de scores clínicos de riesgo de etv sintomática en pacientes con tumores sólidos en tratamiento ambulatorio: resultados en la segunda cohorte prospectiva oncothromb12-01. XXXVI Congreso Nacional de la SETH. Virtual Congress, October 2020.
- Muñoz Martín AJ, Ruiz Zamorano M, Cárdenas Yebra A, Ortega Morán L, Ferrer Pérez AI, Rupérez Blanco AB, Rubio Pérez J, Martínez-Galán J, Font Puig C, Fernández Pérez I, Pachón Olmos V, Martínez de Castro E, Quintanar Verdúgez T, López Moreno S, Rubio Castellón V, Martínez-Pérez A, Seguí E, Salas E, Soria Fernández JM. Comparison of different clinical risk assessment models (RAMs) in ambulatory cancer patients receiving chemotherapy from Oncothromb-02 study. 10th International Conference on Thrombosis and Hemostasis issues in Cancer (ICTHIC). Bergamo 2020.
- Sabater-Lleal M, Ji Y, Temprano G, Wiggins K. L, Brown M, Desch KC, Martinez-Perez A, Kleber ME, Morange PE, Fuchsberger C, Chen MH Cushman M, Tang W, de Vries PS, Huffman J. E, O'Donnell C. J, Morrison AC, Smith NL, CHARGE Consortium Hemostasis Working Group. Genome-wide association analyses of natural anticoagulants using TOPMED reference panel reveal novel loci associated with Antithrombin, Protein C and Protein S. American Society of Human Genetics Meeting. Virtual Meeting. 27-30 October 2020.
- Thibord F, Song C, Chen MH, Rodriguez B, Yanek L, Sabater-Lleal M, Carrasquilla GD, Hampton L, Rotter JI, Desch KC, Morange P, Kleber ME, Smith NL, Morrison AC, Johnson AD. Exome-array Analysis of Plasma Hemostatic Factors D-dimer, tPA and PAI-1 Identifies Novel Genes. American Society of Human Genetics Meeting. Virtual Meeting. 27-30 October 2020.
- Peypoch O, Pauls F, Dilme J, Romero J, Escudero JR, Soria JM, Camacho M, Sabater Lleal M. The TAGA Study: a study of factors determining aortic diameter in families at high risk of Abdominal Aortic Aneurysm. European Society of Vascular Surgery Meeting. 8-10th June 2020. Virtual meeting.
- Dilmé, Jaume. Speaker. Round table: Enfermedad aorto-ilíaca oclusiva. Primer Congreso Virtual SEACV. 10-28 September 2020.
- Dilmé J. SITE Update, On-Air 2020 International Symposium on Endovascular Therapeutics. Sponsored Symposia. Type B Aortic treatment: from PETTICOAT to STABILISE using Medtronic Valiant NavionTM Thoracic stent graft System. Barcelona 18 September 2020.
- Dilmé, J. Patología del arco aórtico. .Abordaje endovascular: ¿Cuándo y Cómo? VIII Jornada Multidisciplinar de Aorta. Hospital Vall d'Hebron, Barcelona. 25 June 2020.
- R. Guerrero, A.P. Corujo, J. Dilmé, B. Soto, J. Villaba Auñon, J. Hernández García, J.P. Martínez Gutiérrez, J. Branera Pujol. VBX stent graft: a new era for iliac endovascular treatment. Poster Online System on the occasion of the online CIRSE 2020 Summit.
- Rovira Safont R, Dilmé Muñoz JF, Arzamendi Aizpurua D, Moustafa AH, Moreno Molina JA, Escudero Rodríguez JR. Coartación aórtica crónica con pseudoaneurismas anastomóticos de bypass de subclavia izquierda a aorta descendente: tratamiento híbrido en unidad aórtica multidisplinar. Poster. 1r Congreso Virtual de la Sociedad Española de Angiología y Cirugía Vascular 2020.
- Rovira Safont R, Dilmé Muñoz JF, Soto Carricas B, Moustafa AH, Montiel Serrano J, Escudero Rodríguez JR. Divertículos de kommerell: anatomía, presentación clínica, tratamiento y utilidad de los modelos 3d en la actualidad. Poster 1r Congreso Virtual de la Sociedad Española de Angiología y Cirugía Vascular 2020.

Dissemination to Society. Talks and Communication Media

- Maria Sabater-Lleal. "Genetics to study complex diseases". Project "Morning of Research 2020", organized by ISGlobal and ACCC. Institut Vedruna Gràcia, 27 November 2020.
- La Vanguardia: https://www.pressreader.com/spain/la-vanguardia/20200331/282059099100939
- "Tot es mou", TV3: https://www.ccma.cat/tv3/alacarta/tot-es-mou/jose-manuel-soria-mentre-el-virus-estigui-en-lanimal-que-lha-transmes-hi-haura-un-reservori-i-pot-tornar/video/6036452/
- https://www.lavanguardia.com/vida/20200429/48819697501/sant-pau-identifica-elementos-reguladores-de-los-genes-que-provocan-trombosis.html
- https://www.ccma.cat/catradio/alacarta/catalunya-migdia-cap-de-setmana/descobreixen-factors-de-risc-de-tenir-trombosi-una-complicacio-important-de-la-covid-19/audio/1069799/
- "Planta Baixa" TV3 (TV programme): http://www.recercasantpau.cat/wp-content/uploads/2020/05/050520-TV3-Planta-Baixa-Dr-Soria-1.mp4
- Diario Médico: https://www.diariomedico.com/investigacion/hay-que-estratificar-el-riesgo-de-trombosis-en-pacientes-con-covid-19.html
- Diari Ara: https://www.ara.cat/societat/Busquen-biomarcadors-genetics-provoquen-covid-19-recerca-investigacio-trombosi-coronavirus_0_2456754464.html
- La Cope: https://www.cope.es/actualidad/sociedad/noticias/coronavirus--hospital-sant-pau-evalua-riesgo-trombosis-pacientes-con-covid-19-20200525_734558
- El Matins de TV3 (TV programme): https://www.ccma.cat/tv3/alacarta/els-matins/biomarcadors-per-preveure-la-trombosi-en-malalts-de-covid-19/video/6046859/
- https://www.elperiodico.com/es/economia/20200626/the-collider-8015733
- https://www.lavanguardia.com/vida/20200910/483398262246/el-sexo-es-una-variable-biologica-a-tener-en-cuenta-en-los-estudios-geneticos.html
- Més_324 (TV programme): https://www.ccma.cat/tv3/alacarta/mes-324/entrevista-a-jose-manuel-soria-director-de-la-unitat-de-recerca-genomica-de-els-malalties-complexes-de-linstitut-dinvestigacio-de-sant-pau-la-recerca-no-es-una-despesa-es-una-inversio/video/6064086/
- Canal Youtube de la Associació ActivaTT por la Salut: https://www.youtube.com/watch?v=LCEXUvV_sAg
- La Vanguardia: https://www.lavanguardia.com/vida/20210312/6371215/foment-activatt-enfermedades-vasculares-alianza.html

AREA 1 · Cardiovascular Diseases

Regulatory Mechanisms of Cardiovascular Remodelling

Coordinator
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Main Lines of Research

- Extracellular matrix remodelling in cardiovascular diseases.
- Nuclear receptors in atherosclerosis and vascular biology.
- Novel therapeutic targets in hypertensive heart disease.

Scientific Challenges

- Analysis of the molecular basis of abdominal aortic aneurysm: Identification of new therapeutic targets.
- Physiopathological mechanisms underlying the development of thoracic aortic aneurysm in syndromic patients.
- Identification of new biomarkers and therapeutic targets in peripheral artery disease and vascular dysfunction.
- Analysis of the molecular mechanisms involving nuclear receptors in the control of vascular calcification.
- Identification and validation of novel pharmacological tools in cardiovascular diseases.
- Development and characterization of new animal models in cardiovascular diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Dr. Dídac Maurici. Coordinator of the Endocrinology, Diabetes and Nutrition Group.
- Dr. Juan Antonio Arroyo Díaz. Group of Multiorganic Damage.
- Dra. Mercedes Camacho. Group of Genomics of Complex Diseases.
- Dr. Leif Hove-Madsen.: Coordinator of the Regulation of Cardiac Rhythm and Contraction Group.

External Collaborations

- Dra. Roxana Carare (University of Southampton).
- Dr. Modar Kassan (University of Iowa, USA).
- Dr. Ziad Mallat, MD, PhD (University of Cambridge).
- Dr. Vicente Andrés (Centro Nacional de Investigaciones Cardiovasculares, CNIC, Madrid).
- Dra. Meritxell Nus (University of Cambridge).
- Dr. Pablo García de Frutos (Instituto de Investigaciones Biomédicas de Barcelona, CSIC).
- Dra. Anna Planas (Instituto de Investigaciones Biomédicas de Barcelona, CSIC).
- Dr. José Antonio Páramo, Dr. José Antonio Rodríguez (Centro de Investigación Médica Aplicada, CIMA).
- Dr. García Dorado, Dr A Rodríguez-Sinovas (Hospital del Vall d'Hebron).
- Dra. Mercedes Salaices, Dra. Ana Briones (Universidad Autónoma de Madrid; UAM).
- Dra. Victoria Cachofeiro (Universidad Complutense de Madrid, UCM).
- Dra. Alicia Arroyo (Centro Nacional de Investigaciones Cardiovasculares, CNIC, Madrid).
- Dr. Lisardo Boscà (Director of Instituto de Investigaciones Biomédicas Alberto Sols, CSIC, Madrid).
- Dr. Francisco Sánchez Madrid (Director of Instituto de Investigación Sanitaria Hospital Universitario de La Princesa, Madrid).
- Dr. Sánchez-Infantes (Institut de Recerca Germans Trias i Pujol, Badalona).
- Dra. Gema Ruiz Hurtado (Hospital 12 de Octubre, Madrid).
- Dr. Gustavo Egea (Universitat de Barcelona; UB).
- Dr. Francisco Nistal (Hospital Uiversitario Marqués de Valdecilla, Santander).

Active Grants

- Maria Galán Arroyo. Contratos Miguel Servet I 2015. MS15/00126. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500 €.
- Maria Galán Arroyo. Nuevas dianas terapéuticas para el tratamiento del AAA y de la cardiopatía hipertensiva: proteínas implicadas en el estrés del retículo y en la disfunción mitocondrial. PI17/01837. Instituto de Salud Carlos III. Duration: 2018-2021. 102,000 €.
- Maria Cristina Rodríguez Sinovas. Nuevas estrategias terapéuticas en el manejo de la enfermedad arterial periférica y el aneurisma de aorta abdominal. PI18/00919. Instituto de Salud Carlos III. Duration: 2019-2021. 152,000 €.
- Lidia Puertas Umbert. Contractes PFIS: Contractes Predoctorals de Formació en Recerca en Salut 2019. FI19/00331. Instituto de Salud Carlos III. Duration: 2020-2023. 82,400 €.
- José Martínez González. Mecanismos que involucran a los receptores NR4A y a LOX en la calcificación vascular. RTI2018-094724-B-100. Duration: 2019-2021. 145,200 €.

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

Grants Awarded in 2020

- Maria Galán Arroyo. Descifrando los mecanismos moleculares subyacentes a la formación del aneurisma de aorta: el estrés del retículo endoplásmico y el estrés oxidativo mitocondrial como nuevas dianas terapéuticas. PI20/01004. Instituto de Salud Carlos III. Duration: 2021-2023. 120,000 €.
- Maria Galán Arroyo. Contratos Miguel Servet II 2020. CPII20/00013. Instituto de Salud Carlos III. Duration: 2021-2024. 101,250 €.
- Maria Cristina Rodríguez Sinovas, La fosfodiesterasa PDE4B en la enfermedad arterial periférica y el aneurisma de aorta abdominal: impacto sobre la fisiopatología y el manejo clínico. SEC 2020-2. Sociedad Española de Cardiología. Duration: 2020-2022. 13,500 €.
- Maria Cristina Rodríguez Sinovas. Estrategias traslacionales basadas en la fosfodiesterasa PDE4B como nueva diana terapéutica en la enfermedad arterial periférica y el aneurisma de aorta abdominal. FEA 2020-1. Fundación Española de Arteriosclerosis. Duration: 2021-2022. 10,909.09 €.

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

Awards

- Saray Varona and Lídia Puertas. "Supercientíficas: la batalla contra el aneurisma de aorta abdominal" (video in the context of the Campaign "Que Siga la Ciencia-CIBER". First Prize.

Patents

- María Galán, Miquel Navas, Cristina Rodríguez, José Martínez, SS-31 for the prevention and/or treatment of aneurysm. PCT/EP2020/071197. International. 28/07/2020.
- José Martínez González, Cristina Rodríguez, Laia Cañes. Use of tyrosine hydroxylase inhibitors for the treatment of aortic aneurysm, 172552677. USA. 15/12/2020.

Scientific Production

Total Impact Factor: 27.885 · Mean Impact Factor: 3.983

Canes L., Marti-Pamies I., Ballester-Servera C., Herraiz-Martinez A., Alonso J., Galan M., Nistal J.F., Muniesa P., Osada J., Hove-Madsen L., Rodriguez C., Martinez-Gonzalez J., Neuron-derived orphan receptor-1 modulates cardiac gene expression and exacerbates angiotensin II-induced cardiac hypertrophy (2020) CLIN SCI, 134 (3), 359-377. **IF: 5.2230**

Galán M, Jiménez-Altayó F. Small Resistance Artery Disease and ACE2 in Hypertension: A New Paradigm in the Context of COVID-19. FRONT CARDIOVASC MED. 2020;7:588692. DOI: 10.3389/fcvm.2020.588692. **IF: 3.995**

González-Ramos S, Fernández-García V, Recalde M, Rodríguez C, Martínez-González J, Andrés V, Martín-Sanz P, Boscá L. Deletion or Inhibition of NOD1 Favors Plaque Stability and Attenuates Atherothrombosis in Advanced Atherogenesis. CELLS. 2020;9(9):2067. DOI: 10.3390/cells9092067. **IF: 4.366**

Jiménez-Altayó F, Ortiz-Romero P, Puertas-Umbert L, Dantas AP, Pérez B, Vila E, D'Ocon P, Campuzano V. Stenosis coexists with compromised alpha-adrenergic contractions in the ascending aorta of a mouse model of Williams-Beuren syndrome. SCI REP. 2020;10(1):889. DOI: 10.1038/s41598-020-57803-3. **IF: 3.998**

Martínez-González J, García de Frutos P. Cells in Cardiovascular Disease: Using Diversity to Confront Adversity. CELLS. 2020;9(10):2192. DOI: 10.3390/cells9102192. **IF: 4.366**

Navas-Madroñal M, Castelblanco E, Camacho M, Consegal M, Ramirez-Morros A, Sarrias MR, Perez P, Alonso N, Galán M, Mauricio D. Role of the Scavenger Receptor CD36 in Accelerated Diabetic Atherosclerosis. INT J MOL SCI. 2020;21(19):7360. doi: 10.3390/ijms21197360. **IF: 4.556**

Nus M, Basatemur G, Galan M, Cros-Brunsó L, Zhao TX, Masters L, Harrison J, Figg N, Tsiantoulas D, Geissmann F, Binder CJ, Sage AP, Mallat Z. NR4A1 Deletion in Marginal Zone B Cells Exacerbates Atherosclerosis in Mice-Brief Report. ARTERIOSCLERTHROMBVASC BIOL. 2020;40(11):2598-2604. DOI: 10.1161/ATVBAHA.120.314607. **IF: 6.604**

Diffusion Activities

Outreach Activities

- Laia Cañes and Carme Ballester. "Nuestro día a día investigando la calcificación vascular". Informative video directed to the general population about the research. Campaign "Que siga la Ciencia" of the CIBER. Link: https://www.youtube.com/watch?v=WXx9ZShBlcE.
- Saray Varona and Lídia Puertas. "Supercientíficas: la batalla contra el aneurisma de aorta abdominal". Informative video directed to the general population about the research. Campaign "Que siga la Ciencia" of the CIBER. Link: https://www.youtube.com/watch?v=UAx-6EhmnGHo
- The study published by Clin Sci 2020 about the role of NOR-1 in cardiac hypertrophy was covered by several digital media and by the institutional websites of CSIC, Sant Pau and CIBER (14/05/2020).
- "La triple A (AAA): El silenciós assassí d'Albert Einstein": Informative seminar about risk factors and preventive measures in abdominal aortic aneurysms. Centre Cívic del barri del Guinardó, Barcelona. Organized by IRHSCSP and Aula 141. Link: http://aula141.cat/xerrada/la-triple-a-aaa-el-silencios-assassi-dalbert-einstein/ (January 2020)
- Dr. Martínez-González. Organizer and moderator. Webinar online. "El receptor de LDL y el eje HDL-LDL en el transporte reverso del colesterol: estudios en modelos experimentales de hipercolesterolemia familiar y en pacientes" Speaker: Dr Escolá. Sociedad Española de Aterosclerosis website.

Membership to Editorial Boards

- Dra C. Rodríguez. Members of the Editorial Board of PLOS One
- Dr J. Martínez. Members of the Editorial Board Scientific Reports.
- Dr. Martínez. Guest Editor of the Special Issue "Cells in Cardiovascular Disease". Journal Cells (2020)
- Dra. Galán. Guest Editor of the Special Issue "Cardiometabolic and Cardiotoxicity Disorders". Journal Int J Mol Sci (2020-2021).

Teaching activities

- Carlos Aguilar. Final Degree Project. Universitat de Vic. Supervisor: Dr José Martínez González. January 2020.
- Attila Tobor. Final Master Project. Master's degree in Pharmacology (UAB). Supervisor: Dra. María Galán Arroyo. June 2020.
- Júlia Caparrós. Final Master Project. Master's degree in Pharmacology (UAB). Supervisor: Dra María Galán Arroyo. September 2020.

AREA 2

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104 Metabolic Bases of Cardiovascular Risk

108 Inflammatory Diseases

112 Endocrinology, Diabetes and Nutrition

119 Pituitary Gland Disorders

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135 Multi-organ Damage

139 Chronic Respiratory Diseases

144 Research Group in HIV and AIDS

147 Genome Instability and DNA Repair Syndromes

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Genetic Diseases

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Rodríguez Santiago, Benjamín (FGS)
Rojas Rodríguez, Ester (FGS)
Sebio García, Ana (FGS)
Serra Juhe, Clara (FGS)
Tejero Laguna, Eudald (IR)

Main Lines of Research

- Congenital myopathies, congenital and adult muscular dystrophies, including limb-girdle muscular dystrophies, and congenital myasthenic syndromes:
  - 1. Identification of mutations and genetic variants.
  - 2. Studies of molecular pathology and disease mechanisms of neuromuscular disease-related genes.
  - 3. Transcriptome analyses by RNA-Seq technology.
  - 4. Functional studies on DMD gene to determine the pathogenic effect of the identified variants.
  - 5. Long-read sequencing by ONT technology to characterize long repeat expansions in size and composition.
- Spinal atrophy and SMN genes:
  - 1. Studies of molecular pathology, disease mechanisms and SMN gene expression.
  - 2. Identification of modifying genes.
  - 3. Study of biomarkers for validation processing in spinal muscular atrophy.
  - 4. Study of the neuromuscular junction in human development.
- Hereditary breast cancer and BRCA mutations:
  - 1. Identification of mutations and genetic variants.
  - 2. Molecular characterization of circulating tumour cells (CTCs) through expression profiles in patients with breast cancer.
  - 3. Analysis of free circulating tumour DNA (cfDNA) as a predictor of response to breast cancer treatment.
- Pharmacogenetics: adverse reactions to medications.
- Congenital coagulopathies: molecular pathology of haemophilias.
- Duchenne and Becker muscular dystrophy: molecular pathology of the DMD gene.
- Identification of the molecular alterations responsible for hereditary hearing loss.
- Studies of the molecular pathologies that cause ataxias.

Scientific Challenges

Pharmacogenetics

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

Muscular dystrophies

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

Hereditary breast/ovarian cancer

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

Hereditary motor neurone diseases

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Neurology Department: Neuromuscular Diseases Group (IIB Sant Pau), headed by Eduard Gallardo.
- Oncology, Cardiology, ORL, Ginecology and Pediatrics Departments.

External Collaborations

Collaborations with Universities

- Several members of the group collaborate with the Universitat Autònoma de Barcelona as teachers in the second year of the Degree in Genetics, the Degree in Biology, the Master's Degree in Care Genetics and the Master of Neuropsychology.
- Tutoring of final master's works:
  - Andrea Valls. In search of a second CAPN3 mutation in a group of patients: elucidating the calpainopathy mode of inheritance. Universitat Autònoma de Barcelona (UAB), Facultat de Biociències. Tutor: Lidia González Quereda. Date of defense: 2020

National Collaborations

- Hospital Sant Joan de Déu, Barcelona: Neuropediatrics Department. Dr. A. Nascimento, Dr. C. Ortez and Dr. D. Natera.
- Hospital Vall d'Hebron, Barcelona: Neuropediatrics Department. Dra. F. Munell.
- Hospital de Navarra, Navarra: Neurology Department. Dra. I. Jericó
- Hospital de Bellvitge, Barcelona: Neuropathology Department. Dra. M. Olivé.
- Hospital de Donostia, San Sebastián: Neurology Department. Dr. A. López de Munáin.
- Hospital 12 de Octubre, Madrid: Neurology Department. Dra. C. Domínguez.

Collaboration with scientific and patients organizations

- Fundació Catalana d'Hemofília
- Federación Española de Hemofilia (FEDHEMO)
- Comisión Científica Real Fundación Victoria Eugenia
- BENE (Asociación de familiares y afectados por enfermedades neuromusculares de Bizkaia)
- FUNDAME (Fundación Atrofia Muscular Espinal)
- AEGH (Asociación Española de Genética Humana)
- AEP (Asociación Española de Pediatría)
- SEN (Sociedad Española de Neurología)
- SEG (Sociedad Española de Genética)
- SEQC (Sociedad Española de Bioquímica Clínica y Patología Molecular)
- SEFF (Sociedad Española de Farmacogenética y Farmacogenómica)
- AERES (Agence d'évaluation de la recherche et de l'enseignement supérieur). Committee: "Laboratoire de génétique médicale"
- Scientific Committee of the Asociación de Enfermedades Neuromusculares, ASEM Catalunya
- Red catalana de diagnóstico y seguimiento de hemoglobinopatías y talasemias (Catglobin)
- PTC Therapeutics Global Advisory Board on Advancing Diagnosis of Duchenne Muscular Dystrophy
- Member of the Scientific Advisory Committee of the Federación Española

Active Grants

- Maria Pia Gallano Petit. Centro de Investigación Biomédica en Red de Enfermedades Raras. CIBERER. CB06/07/0011. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 713,021.73 €.
- Maria Pia Gallano Petit. Servei de Genética. 2017 SGR 00545. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Juliana Salazar Blanco. Millora del tractament amb fàrmacs antidepressius: desenvolupament i implementació de noves intervencions farmacogenètiques en àmbits hospitalaris. SLT006/17/00148. Departament de Salut. Duration: 2018-2020. 51,901 €.
- Benjamín Rodriguez Santiago. Proyecto iDATA-MP. Convocatoria de la Acción Estratégica en Salud 2017-2020, Ministerio de Ciencia e Innovación. IMP/00019.
- Benjamín Rodriguez Santiago. Integración de la farmacogenética y la telemedicina mediante salud móvil para el manejo de los efectos adversos en pacientes con cáncer colorrectal (ePGx study). IIBSP-EPG-2020-84
- Benjamín Rodriguez Santiago Acceleradora de malalties minoritàries de Catalunya (AMMIC). ACCIÓ, Programa Operatiu FEDER de Catalunya 2014-2020. COMRDI15-1-0014.
- Pau Riera. Integració de la Farmàcia Hospitalària i Comunitària per a la integració de la farmacogenètica a la pràctica assistencial. Beca Joaquim Bonal 2019-2021. Societat Catalana de Farmàcia Clínica. Duration: 2019-2021. 14.000,40 €.
- Adriana Lasa. ACCI CIBERER. Nuevo ensayo basado en letalidad sintética para el análisis funcional de variantes de significado incierto en genes implicados en cáncer de mama/ovario familiar.
- Adriana Lasa. La ruta anemia de Fanconi/BRCA: investigación genética y terapéutica. RTI2018-098419-B-I00. Programa Estatal de I+D+i Orientado a los Retos de la Sociedad. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 314,600 €.
- Sara Bernal. Aproximación genómica de la atrofia muscular espinal (AME): estudio de casos especiales con AME-5q y caracterización de pacientes con AME-no-5q. PI18/0687. Instituto de Salud Carlos III. Duration: 2019-2021. 172,183 €.
- Sara Bernal. Biomarcadores precoces pronósticos y de respuesta a tratamiento en la Atrofia Muscular Espinal. Fundación GaliciAME. Duration: 2019-2020. 50,000 €.
- Juliana Salazar. Mejora del tratamiento con fármacos antidepresivos: desarrollo e implementación de nuevas intervenciones farmacogenéticas en ámbitos hospitalarios. SLT006_17_ 00148, PERIS. Generalitat de Catalunya, Departament de Salut. Duration: 2018-2020. 137,581 €.
- Juliana Salazar Blanco. Estudio transversal y multicéntrico para el desarrollo de un modelo de predicción clínico y farmacogenético de la satisfacción del paciente dependiente de heroína con la metadona como un medicamento. SLT_006_17_00179. Generalitat de Catalunya, Departament de Salut. Duration: 2018-2020. 166,627 €.
- Juliana Salazar Blanco, Caracterización genética del síndrome del QT largo asociado a fármacos. PI17/00980. Instituto de Salud Carlos III. Duration: 2018-2020. 197,351 €.
- Ana Sebio García. Evaluación de las alteraciones de la distrofina y proteínas afines como factores pronósticos en pacientes afectos de leiomiosarcoma. FIS PI17/00143. Instituto de Salud Carlos III. Duration: 2018-2020. 76,230 €.

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

Grants Awarded in 2020

- Pau Riera Armengol. Contratos Juan Rodés 2020. JR20/00008. Instituto de Salud Carlos III. Duration: 2021-2024. 180,000 €.
- Benjamín Rodríguez Santiago. Catalan Interhospital Network of Genetic Variants to Improve Genetic Diagnosis in Rare Diseases. MARATO 202040-33. Fundació La Marató de TV3 Convocatòria sobre malalties minoritàries. 2021-2023. 26.250,00 €.

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

Doctoral Theses

- Francesc Bou del Pieri. Genetic approach to unravel the molecular basis of severe early-onset obesity. Pompeu Fabra University. Director: Clara Serra Juhe. Date of defense: 17/12/2020.

Patents

- Antonio Liras; Sara Bernal Noguera, Método In Vitro para recuperar la expresión del gen F5 que codifica el Factor V de la coagulación. Nr of publication: ES2785323 / Nr of application: P202030442, registered industrial property. 14/05/2020.

Scientific Production

Total Impact Factor: 121.817 · Mean Impact Factor: 5.075

Aartsma-Rus A, Hegde M, Ben-Omran T, Buccella F, Ferlini A, Gallano P, Howell RR, Leturcq F, Martin AS, Potulska-Chromik A, Saute JA, Schmidt WM, Sejersen T, Tuffery-Giraud S, Uyguner ZO, Witcomb LA, Yau S, Nelson SF. Evidence-Based Consensus and Systematic Review on Reducing the Time to Diagnosis of Duchenne Muscular Dystrophy. J PEDIATR; 01. 204:305-313.e14. PMID: 30579468. DOI: 10.1016/j.jpeds.2018.10.043. **IF: 3.739**

Alonso-Perez J., Gonzalez-Quereda L., Bello L., Guglieri M., Straub V., Gallano P., Semplicini C., Pegoraro E., Zangaro V., Nascimento A., Ortez C., Comi G.P., Dam L.T., De Visser M., van der Kooi A.J., Garrido C., Santos M., Schara U., Gangfuss A., Lokken N., et al. New genotype-phenotype correlations in a large European cohort of patients with sarcoglycanopathy (2020) BRAIN, 143 (9), 2696-2708. **IF: 11.3370**

Bastos-Oreiro M., Muntanola A., Panizo C., Gonzalez-Barca E., de Villambrosia S.G., Cordoba R., Lopez J.L.B., Gonzalez-Sierra P., Terol M.J., Gutierrez A., Grande C., Ramirez M.J., Iserte L., Perez E., Navarro B., Gomez P., Salar A., Luzardo H., Lopez A., et al. RELINF: prospective epidemiological registry of lymphoid neoplasms in Spain. A project from the GELTAMO group (2020) ANN HEMATOL, 99 (4), 799-808. **IF: 2.9040**

Beecroft SJ, Olive M, Quereda LG, Gallano P, Ojanguren I, McLean C, McCombe P, Laing NG, Ravenscroft G. Cylindrical spirals in two families: Clinical and genetic investigations. NEUROMUSCUL DISORD. 2020 Feb;30(2):151-158. DOI: 10.1016/j.nmd.2019.12.006. Epub 2019 Dec 25. PMID: 31952901. **IF: 3.115**

Bobadilla-Quesada E.J., Natera-de Benito D., Carrera-Garcia L., Ortez C., Exposito-Escudero J., Jimenez-Mallebrera C., Jou C., Codina A., Corbera J., Moya O., Saez V., Gonzalez-Quereda L., Gallano P., Colomer J., Cuadras D., Medina J., Yoldi M.E., Nascimento A., Early and long-term effect of the treatment with pyridostigmine in patients with GMPPB-related congenital myasthenic syndrome (2020) NEUROMUSCULAR DISORD, 30 (9), 719-726. **IF: 3.1150**

Bogliolo M., Pujol R., Aza-Carmona M., Munoz-Subirana N., Rodriguez-Santiago B., Casado J.A., Rio P., Bauser C., Reina-Castillon J., Lopez-Sanchez M., Gonzalez-Quereda L., Gallano P., Catala A., Ruiz-Llobet A., Badell I., Diaz-Heredia C., Hladun R., Senent L., et al. Optimised molecular genetic diagnostics of Fanconi anaemia by whole exome sequencing and functional studies (2020) J MED GENET, 57 (4), 258-268. **IF: 4.9430**

Cuscó I, Bernal S, Blasco-Pérez L, Calucho M, Alias L, Fuentes-Prior P, Tizzano EF. Practical guidelines to manage discordant situations of SMN2 copy number in patients with spinal muscular atrophy. NEUROL GENET. 2020 Nov 18;6(6):e530. DOI: 10.1212/NXG.0000000000000530. eCollection 2020 Dec. PMID: 33324756. **IF: 3.509**

Gonzalez-Quereda L, Rodriguez MJ, Diaz-Manera J, Alonso-Perez J, Gallardo E, Nascimento A, Ortez C, Natera-de Benito D, Olive M, Gonzalez-Mera L, Munain AL, Zulaica M, Poza JJ, Jerico I, Torne L, Riera P, Milisenda J, Sanchez A, Garrabou G, Llano I, Madruga-Garrido M, Gallano P. Targeted Next-Generation Sequencing in a Large Cohort of Genetically Undiagnosed Patients with Neuromuscular Disorders in Spain. GENES (BASEL). 2020 May 11;11(5):539. DOI: 10.3390/genes11050539.PMID: 32403337 **IF: 3.759**

Hernandez I, Gelpi E, Molina-Porcel L, Bernal S, Rodríguez-Santiago B, Dols-Icardo O, Ruiz A, Alcolea D, Boada M, Lleó A, Clarimón J. Heterozygous APOE Christchurch in familial Alzheimer's disease without mutations in other Mendelian genes. NEUROPATHOL APPL NEUROBIOL. 2020 Oct 23. DOI: 10.1111/nan.12670. Online ahead of print. PMID: 33095930. **IF: 7.036**

Matalonga L, Laurie S, Papakonstantinou A, Piscia D, Mereu E, Bullich G, Thompson R, Horvath R, Pérez-Jurado L, Riess O, Gut I, van Ommen GJ, Lochmüller H, Beltran S; RD–Connect Genome-Phenome Analysis Platform and URD-Cat Data Contributors. Improved Diagnosis of Rare Disease Patients through Systematic Detection of Runs of Homozygosity. J MOL DIAGN. 2020 Sep;22(9):1205-1215. doi: 10.1016/j.jmoldx.2020.06.008. Epub 2020 Jun 30.PMID: 32619640. **IF: 5.553**

Montanuy H., Martinez-Barriocanal A., Antonio Casado J., Rovirosa L., Ramirez M.J., Nieto R., Carrascoso-Rubio C., Riera P., Gonzalez A., Lerma E., Lasa A., Carreras-Puigvert J., Helleday T., Bueren J.A., Arango D., Minguillon J., Surralles J., Gefitinib and Afatinib Show Potential Efficacy for Fanconi Anemia-Related Head and Neck Cancer (2020) CLIN CANCER RES, 26 (12), 3044-3057. **IF: 10.1070**

Natera-de Benito D., Muchart J., Itzep D., Ortez C., Gonzalez-Quereda L., Gallano P., Ramirez A., Aparicio J., Dominguez-Carral J., Carrera-Garcia L., Exposito-Escudero J., Pardo Cardozo N., Cuadras D., Codina A., Jou C., Jimenez-Mallebrera C., Palau F., Colomer J., Arzimanoglou A., Nascimento A., San Antonio-Arce V., Epilepsy in LAMA2-related muscular dystrophy: An electro-clinico-radiological characterization (2020) EPILEPSIA, 61 (5), 971-983. **IF: 6.0400**

Páez D. Genetics and adverse events with irinotecan treatment: what do we know? PHARMACOGENOMICS; 04. 20(6):393-395. PMID: 31117929 DOI: 10.2217/pgs-2019-0012. **IF: 2.26**

Ramos-Campoy O., Antonell A., Falgas N., Balasa M., Borrego-Ecija S., Rodriguez-Santiago B., Datta D., Armengol L., Fernandez-Villullas G., Bosch B., Olives J., Munoz-Garcia C., Castellvi M., Tort-Merino A., Sanchez-Valle R., Llado A., Screening of dementia genes by whole-exome sequencing in Spanish patients with early-onset dementia: likely pathogenic, uncertain significance and risk variants (2020) NEUROBIOL AGING, 93, e1-e9. **IF: 4.3470**

Riera P., Artigas-Baleri A., Salazar J., Sebio A., Virgili A.C., Arranz M.J., Paez D., ABCB1 Genetic Variants as Predictors of Irinotecan-Induced Severe Gastrointestinal Toxicity in Metastatic Colorectal Cancer Patients (2020) FRONT PHARMACOL, 11. **IF: 4.2250**

Riera P, Artigas A, Salazar J, Páez D. Comments on: "Clinical utility of ABCB1 genotyping for preventing toxicity in treatment with irinotecan". PHARMACOL RES; 07. 145:104287. PMID: 31141715 DOI: 10.1016/j.phrs.2019.104287. **IF: 5.57**

Riera P, Rodríguez-Santiago B, Lasa A,Gonzalez-Quereda L, Martín B, Salazar J, Sebio A, Virgili AC, Minguillón J, Camps C, Surrallés J, Páez D.

Novel Somatic Genetic Variants as Predictors of Resistance to EGFR-Targeted Therapies in Metastatic Colorectal Cancer Patients. CANCERS (BASEL). 2020 Aug 11;12(8):2245. DOI: 10.3390/cancers12082245.PMID: 32796636. **IF: 6.126**

Rovira-Moreno E, Abuli A, Codina-Sola M, Valenzuela I, Serra-Juhe C, Cuscó I, Borregán M, Cueto-González A, Vendrell T, López-Grondona F, Brun-Gasca C, Brignani E, Martínez-Ribot L, Garci-Espejo R, Cruz J, García-Arumí E, Tizzano EF. Beyond the disease itself: A cross-cutting educational initiative for patients and families with rare diseases. J GENET COUNS. 2020 Nov 3. DOI: 10.1002/jgc4.1354. **IF: 2.149**

Santos C, Azuara D, Viéitez JM, Páez D, Falcó E, Élez E, López-López C, Valladares M, Robles-Díaz L, García-Alfonso P, Bugés C, Durán G,Salud A, Navarro V, Capellá G, Aranda E, Salazar R. Phase II study of high-sensitivity genotyping of KRAS, NRAS, BRAF and PIK3CA to ultra-select metastatic colorectal cancer patients for panitumumab plus FOLFIRI: the ULTRA trial. ANN ONCOL; 05. 30(5):796-803. PMID: 30840064 DOI: 10.1093/annonc/mdz082. **IF: 14.19**

Segui F., Gonzalez-Quereda L., Sanchez A., Matas-Garcia A., Garrabou G., Rodriguez M.J., Gallano P., Grau J.M., Milisenda J.C., Anoctamin 5 (ANO5) muscular dystrophy—three different phenotypes and a new histological pattern (2020) NEUROL SCI, 41 (10), 2967-2971. **IF: 2.4150**

Serra-Juhé C, Martos-Moreno GÁ, Bou de Pieri F, Flores R, Chowen JA, Pérez-Jurado LA, Argente J. Heterozygous rare genetic variants in non-syndromic early-onset obesity. INT J OBES (LOND). 2020 Apr;44(4):830-841. doi: 10.1038/s41366-019-0357-5. Epub 2019 Mar 29. PMID: 30926952. **IF: 4.419**

Serrano C, Vivancos A, López-Pousa A, Matito J, Mancuso FM, Valverde C, Quiroga S, Landolfi S, Castro S, Dopazo C, Sebio A, Virgili AC, Menso MM, Martín-Broto J, Sansó M, García-Valverde A, Rosell J, Fletcher JA, George S, Carles J, Arribas J. Clinical value of next generation sequencing of plasma cell-free DNA in gastrointestinal stromal tumors. BMC CANCER. 2020 Feb 5;20(1):99. doi: 10.1186/s12885-020-6597-x. PMID: 32024476. **IF: 3.150**

Topf A., Johnson K., Bates A., Phillips L., Chao K.R., England E.M., Laricchia K.M., Mullen T., Valkanas E., Xu L., Bertoli M., Blain A., Casasus A.B., Duff J., Mroczek M., Specht S., Lek M., Ensini M., MacArthur D.G., Akay E., Alonso-Perez J., Baets J., Barisic N., et al. Sequential targeted exome sequencing of 1001 patients affected by unexplained limb-girdle weakness (2020) GENET MED, 22 (9), 1478-1488. **IF: 8.9040**

Valenzuela I, Segura-Puimedon M, Rodríguez-Santiago B,Fernández-Alvarez P, Vendrell T, Armengol L, Tizzano E. Further delineation of the phenotype caused by loss of function mutations in PRMT7. Eur J MED GENET; Mar. 62(3):182-185. PMID: 30006058. DOI: . **IF: 2.02**

Other Publications

- López-Fernández A, Serra-Juhé C, Balmaña J, Tizzano EF. Genetic counsellors in a multidisciplinary model of clinical genetics and hereditary cancer. Med Clin (Barc). 2020 Jul 24;155(2):77-81. doi: 10.1016/j.medcli.2020.01.001. Epub 2020 Mar 13. PMID: 32173072

Diffusion Activities

- Pia Gallano member of the committee of experts: PTC Therapeutics Global Advisory Board on Advancing Diagnosis of Duchenne Muscular Dystrophy. Comité Internacional para la elaboración y desarrollo de guías para lograr reducir el tiempo del diagnóstico DMD en los pacientes afectados.
- Pia Gallano. Teacher in the Máster en Genética Asistencial. Universitat Autònoma de Barcelona.
- Lidia González-Quereda. Guest Editor Genes. Special Issue: "Genetic Advances in Neuromuscular Disorders: From Gene Identification to Gene Therapy".
- Lidia González-Quereda. Teacher in the Máster en Genética Asistencial. Universitat Autònoma de Barcelona.
- Lidia González Quereda (teacher); Pía Gallano Petit (moderator). Webinar La genética: una herramienta imprescindible en el diagnóstico de las enfermedades neuromusculares. PTC Therapeutics with the scientific endorsement of the Sociedad Española de Neurología Pediátrica (SENEP).
- Pau Riera Armengol. Webinar: Genotipado del gen UGT1A1 y su relevancia clínica. Sociedad Española de Farmacia Hospitalaria. 10 November 2020.
- Pau Riera Armengol, Joan Francesc Mir Bonnín, Noé Garin Escrivà, Albert Duran Cambra, Anna Feliu Ribera, Mar Gomis Pastor, Guillermo Bagaría de Casanova, Maria Antònia Mangues Bafalluy. Colaboración entre la Farmacia Hospitalaria y Comunitaria para la implementación de la farmacogenética en la práctica asistencial. 65 Congreso Nacional Sociedad Española de Farmacia Hospitalaria (SEFH) 2020 (virtual).
- María Gámez Lechuga, Susana Eroles Morilla, Alba Prat Riera, Adrián Plaza Díaz, Adrià Riera Magallón, Pau Riera Armengol, Maria Antònia Mangues Bafalluy. Adecuación de las unidades de hospitalización post COVID-19: gestión y logística de los medicamentos. 65 Congreso Nacional Sociedad Española de Farmacia Hospitalaria (SEFH) 2020 (virtual).
- Javier Gavira Díaz, Anna Virgili Manrique, Pau Riera Armengol, José Carlos Tapia Tapia, Raul Teres Lleida, Lluís Catasús Cols, Alan González Vidal, Paula Cerdà Serdà, Ana Sebio García, David Páez López-Bravo. Utilidad clínica del análisis molecular mediante NGS en pacientes con cáncer colorrectal metastásico. Estudio retrospectivo unicéntrico. Congreso Sociedad Española de Oncología Médica (SEOM) 2020 (virtual).
- Pau Riera, Benjamín Rodríguez Santiago, Adriana Lasa, Lidia González Quereda, Berta Martín, Juliana Salazar, Ana Sebio García, Anna C. Virgili Manrique, Jordi Surrallés, David Páez. Novel somatic genetic variants as predictors of resistance to EGFR-targeted therapies in metastatic colorectal cancer patients. European Society for Medical Oncology (ESMO) Virtual Congress 2020. Annals of Oncology, Volume 31, Supplement 4, September 2020, Page S434.
- Guillermo Bagaría, Joan Francesc Mir, Cristina Rodríguez-Caba, Maria Estrada-Campmany, Laura Gras-Martín, Laia López-Vinardell, Pau Riera Armengol. Pharmacogenetics in Pharmacy practice: Collaboration between Community and Hospital Pharmacists. International Pharmaceutical Federation (FIP) 2020 (virtual). Pharmacy Education 20(3):104.
- Pau Riera, Jan Thomas De Pourcq, Laia López-Vinardell, Laura Gras-Martín, Joana Cardenete, Esther Rodríguez-Murphy, Daniel Cardona, Noé Garin. Niveles de tiamina en pacientes críticos candidatos a soporte nutricional por vía parenteral. 35 Congreso Nacional de la Sociedad Española de Nutrición Parenteral y Enteral (SENPE), 2020 (virtual).
- Laura Blasco Pérez; I Paramonov; L Iranzo; D Martinez-Cruz; Laura Alias Andreu; Sara Bernal Noguera; C Castiglioni; S Kapetanovic; C Hoi-Hansen; E Garcia-Arumi; Ivon Cuscó Martí; Eduardo Tizzano Ferrari. SMN2enes study by NGS in spinal muscular atrophy: towards identification of new SMA modifiers. European Human Genetics Conference. European Society of Human Genetics. 6-9 June 2020. European Journal of Human Genetics. 28 - suppl1, pp. 444-444. SPRINGERNATURE, 1 December 2020.
- Sara Bernal. XIV Jornada de Actualización en Genética Humana: Genética y Neurología (expediente P-2020-13502). AEGH. Toledo, 1-2 October 2020.
- Sara Bernal. IV Jornada Interhospitalaria de Genética en Cataluña. Hospital Sant Joan de Déu. 9 November 2020.
- Sara Bernal. Teacher in the Máster en Genética Asistencial. Universitat Autònoma de Barcelona. Year 2019-2020.
- Sara Bernal, Pia Gallano, Lidia González-Quereda. Teachers Actualización en Genética Clínica: Habilidades avanzadas para el Asesoramiento Genético. 2ª Parte, 2ª Edición. AEGH. Year 2020-2021.

Communications-posters Adriana Lasa

- Meshoulam E, Teresa R, Camacho D, Bujosa A, Borell M, Gallardo P, Martín B, Calvo N, López C, Alfonso R, Sola C, Cornet M, Cliville N, Lasa A, Ramón y Cajal T. Value of multi-gene panel retesting of families with BRCA1/2 mutation-negative hereditary breast and ovarian cancer (HBOC). Congreso ASCO (American Society of Clinical Oncology). Virtual Congress. May 2020.
- Terés R, Meshoulam E, Riudavets M, Moltó C, Bujosa A, Borrell M, Gallardo P, Martín B, Calvo N, López N, Arqueros C, Tibau A, Cornet M, Lasa A y Ramón y Cajal T. Utilidad del segundo estudio con panel multigen en familias con sospecha de susceptibilidad a cáncer de mama y ovario hereditarios (CMOH) con estudio germinal de los genes BRCA1 y 2 negativo. Congreso Sociedad Española de Oncología Médica (SEOM), October 2020, virtual. Awarded poster.
- Bujosa A, López C, Lasa A, Pineda M, Ramón y Cajal, T. Hipermetilación del promotor de MLH1 como causa del Cáncer Colorrectal No Polipósico Hereditario. Simposium Avances en el Tratamiento de los tumores digestivos TTD. December 2020. Awarded poster.
- Adriana Lasa. Teacher in the Máster en Genética Asistencial. Universitat Autònoma de Barcelona.

Dissemination activities Benjamín Rodríguez Santiago

- Coordinator "Bioinformàtica", Teacher in the Máster en Genética Asistencial. Universitat Autònoma de Barcelona. Year 2019-2021.
- Genetic diagnostics in Sant Pau Hospital. Speech at Master Técnicas Avanzadas de Diagnóstico por Imagen en Cardiología, Universitat Autonòma de Barcelona, 10 February 2020.
- Paper de la genètica en la filiació de les miocardiopaties. Grau de Genètica (UAB). 20 April 2020.
- Bases de dades i formats de seqüències. Grau de Genètica (UAB). October 2020.
- Estadístiques de seqüències. Grau de Genètica (UAB). October 2020.
- Genetic diagnostics in Sant Pau Hospital. Màster de Genètica i Genòmica, Universitat de Barcelona. 12 November de 2020.
- Assemblatge de seqüències. Grau de Genètica (UAB). December 2020.
- Database Resources. Master in Advanced Genetics (UAB). 7 January 2020.
- Array Data Analysis - Galaxy tools. Master in Advanced Genetics (UAB). 8 January 2020.
- Analysis of NGS Data with Galaxy. Master in Advanced Genetics (UAB). 11 January 2020.
- NGS Variant Analysis and Interpretation. Master in Advanced Genetics (UAB). 12 January 2020.
- NGS Clinical Reports Debate/Discussion. Master in Advanced Genetics (UAB). 13 January 2020.

Scientific Dissemination Benjamín Rodriguez Santiago

Oral Communications

- García Melendo, Cristina; Boronat Guerrero, Susana; Rodríguez-Santiago, Benjamín; Baselga Torres, Eulalia; Puig Sanz, Lluís; Roé Crespo Esther. Hiperpigmentación diagnóstica en niñas lineal en áreas intertriginosas. Reunión del Grupo Español de Dermatología Pediátrica. Madrid, 24-25 January 2020.
- González Álvarez, Nuria; Remacha Sevilla, Ángel; Rodríguez-Santiago, Benjamín; Baena Gimeno, Manel; Torrenta Español, M; Serra Ferrer, Marta; Payán-Parnía, Salvador. Diagnóstico molecular de enfermedad de la ferroportina mediante exoma clínico: a propósito de un caso. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. Virtual Congresses, 26-30 October 2020.
- González Álvarez, Nuria; Payán-Pernía, Salvador; Rodríguez-Santiago, Benjamín, Pratcorona Canela, Marta; Nomdedéu Guinot, Josep F; Bussaglia Petrillo, E; Baena Gimeno, M, Remacha Sevilla, Ángel Francisco. Asociación del polimorfismo rs2814778 en la región promotora de darc con neutropenia constitucional. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. Virtual Congresses, 26-30 October 2020.
- Ramil López, Guillermo; Awol, Rahinatu; Remacha Sevilla, Ángel Francisco; Rodríguez-Santiago, Benjamín; Baena Gimeno, Manuel; Mozos Rocafort, Ana; Payán Pernía, Salvador. Diagnóstico molecular de hemocromatosis hereditaria juvenil mediante exoma clínico en un paciente con necesidad de trasplante cardíaco emergente. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. Virtual Congresses, 26-30 October 2020.
- Payán-Pernía, Salvador; Rodríguez-Santiago, Benjamín; Baena Gimeno, Manel; Remacha Sevilla, Ángel F; Torrent Español, Montserrat; Badell Serra, Isabel; Surrallés Calonge, Jordi; Sierra Gil, Jorge. Aplicación del exoma clínico Sant Pau para el diagnóstico de anemias hemolíticas y trastornos del metabolismo del hierro hereditarios. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. Virtual Congresses, 26-30 October 2020.
- Payán-Pernía, Salvador; Rodríguez-Santiago, Benjamín; Badell Serra, Isabel; Hernández Rodríguez, Inés; Serna Berna, José Vicente, Català Temprano, Albert; Bueren Roncero, Juan Antonio, Remacha Sevilla, A; Surrallés Calonge, Jordi; Sierra Gil, Jorge. Aplicación del exoma clínico Sant Pau para el diagnóstico de fallos medulares hereditarios. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. Virtual Congresses, 26-30 October 2020.
- Aplicació de l'exoma clínic al Servei de Genètica del Hospital de Sant Pau. Sessió Servei de Bioquímica. 6 February 2020.
- Desenvolupament prova per realitzar identitat d'ADNs en NGS. Sessió Servei de Genètica. 17 February 2020.

Posters

- Turón Viñas, Eulàlia; Coca Fernández, Elisabet; Díaz Gómez, Asunción; Rodríguez-Santiago, Benjamín; Iglesias Fernández, Sara; Garrido Vicente, María; Espinet Pedrol, Marta; Castillo Gómez, Fatima; Garcia Del Cerro, Gemma; Boronat Guerrero, Susana. Uso del exoma clínico para el diagnóstico y pronóstico precoz de la epilepsia: un caso de mutación por PPP3CA. Jornadas SENEP LIVE de la Sociedad Española de Neurología Pediátrica. Virtual Meeting, 14-23 September 2020.
- Coca, Elisabet; Turón, Eulalia; García Borau, Maria José; Roé, Esther; García Melendo, Cristina; Rodriguez, Benjamín; Brió, Sònia; Salazar, Juan José; Daivinson, Encarnación; Boronat, Susana. Discapacidad intelectual e hiperpigmentación lineal en mujeres. Síndrome de Borjesoon-Frossmann-Lehmann. Jornadas SENEP LIVE de la Sociedad Española de Neurología Pediátrica. Virtual Meeting, 14-23 September 2020.
- Coca, Elisabet; Turón, Eulalia; Diaz, Asunción; Brió, Sònia; Rodriguez, Benjamin; Serna, José Vicente; García, Gemma; Devolder, Adriana; Yeh, Sean; Boronat, Susana. Diagnóstico precoz de enfermedades metabólicas mediante exoma clínico dirigido. Jornadas SENEP LIVE de la Sociedad Española de Neurología Pediátrica. Virtual Meeting, 14-23 September 2020.
- Boronat, Susana; Coca, Elisabet; Díaz, Asunción; Suriñach, Bruna; Roig, Laura; Rodríguez-Santiago, Benjamín; Herrero, Francisco Javier; Tirado, Mireia; Turon, Eulalia. Deteccion de variantes de numero de copia mediante exoma: un caso con implicación de KMT2A. Jornadas SENEP LIVE de la Sociedad Española de Neurología Pediátrica. Virtual Meeting, 14-23 September 2020.
- Boronat, Susana; Coca, Elisabet; Díaz, Asunción; Josa, María; Carbonell, Emma; Quinteiro, María; Rodríguez-Santiago, Benjamín Parra, Juan; Turón, Eulalia. Disgenesia de cuerpo calloso como signo prenatal de bafopatía. Jornadas SENEP LIVE de la Sociedad Española de Neurología Pediátrica. Virtual Meeting, 14-23 September 2020.

Member of working groups

- Grupo de Trabajo de Bioinformática del CIBERER. Since 2019.
- Grup de Treball Dades Òmiques a la Història Clínica Electrònica. BIB and other centers. Since 2018.
- Member of the Grup de Treball de Genètica de la Comissió de Control de Qualitat dels Laboratoris de Genètica (Departament de Salut, Generalitat de Catalunya). Since 2019.
- Comitè Qualitat dels Laboratoris de l'Hospital de Sant Pau. Responsable de qualitat del Laboratori de Genètica. Since January 2019.

Care Committees 2020

- Comité de Enfermedad Rara en Trastornos del Movimiento. Hospital Santa Creu i Sant Pau. Since 06/02/2020. http://www.santpau.cat/es/web/public/unitat-funcional-d-atencio-de-malalties-minoritaries-que-cursen-transtorns-del-moviment
- Comitè de Patologia Neuromuscular. Hospital Santa Creu i Sant Pau. Since 04/02/2020. http://www.santpau.cat/es/web/public/ufmnm
- Comitè de Genodermatosi. Hospital Santa Creu i Sant Pau. Since: 10/03/2014. http://www.santpau.cat/es/web/public/unitat-funcional-genodermatosis-pediatriques
- Comitè Patología Neuromuscular. Servei de Genètica and Servei de Neurologia, Hospital de Sant Pau. Since 2020.
- Comitè de Patologia Aòrtica. Servei de Genètica and Servei de Cardiologia. Hospital de Sant Pau. Since 2019.
- Comitè de Cardiomiopaties Familiars. Servei de Genètica and Servei de Cardiologia. Hospital de Sant Pau. Since 2019.
- Comitè Medicina Fetal: Servei de Genètica, Servei de Ginecologia and Servei de Pediatria. Hospital de Sant Pau. Since 2020.
- Comitè Clínico-Molecular Hospital de Sant Pau and Hospital del Mar: Servei de Genètica i Servei de Pediatria. 2020.

Scientific Dissemination Clara Serra

Scientific Societies

- Member of the Grupo de Trabajo para el Reconocimiento del Asesoramiento Genético de la Sociedad Española de Asesoramiento Genético (SEAGen).
- President of the División de Asesores Genéticos del Board Europeo de Genética Médica (EBMG).

Teaching

- Academic coordinator of the Máster en Genética Asistencial. Universitat Autònoma de Barcelona.
- Teacher. Máster de Psicología de la Reproducción Asistida de la Universidad de Barcelona.
- Teacher. Máster de Human Assisted Reproductive Technologies de EUGIN / UPF-BSM.

Congresses and Meetings

- Speacker. IV Jornada Interhospitalaria de Genética de Cataluña. Hospital Sant Joan de Déu.

Scientific Dissemination Pia Gallano

- Member of the Comité Científico de la Asociación de Enfermedades Neuromusculares ASEM Catalunya.
- Expert member of the Comité Científico de la Federación Nacional de Enfermedades Neuromusculares (ASEM).

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Metabolic Bases of Cardiovascular Risk

Coordinator
Blanco Vaca, Francisco (FGS)
fblancova@santpau.cat

Members
Canyelles Vich, Marina (FGS)
Cedo Gine, Lidia (CIBERDEM)
Escolà Gil, Juan Carlos (IR)
Farràs Mañé, Marta (IR)
Julve Gil, Josep (IR)
Martín Campos, Jesús María (IR)
Martínez Figueroa, Susana (FGS)
Méndez Lara, Karen Alejandra (IR)
Pérez Pérez, Antonio (FGS)
Revilla Senra, Giovanna (IR)
Roig Martínez, Rosa (FGS)
Rotllan Vila, Noemí (IR)
Santos Palacios, David (CIBERDEM)
Tondo Colomer, Mireia (FGS)

Main Lines of Research

- Molecular basis and biomarkers of cardiovascular risk, especially in relation with lipoprotein disorders and hyperhomocysteinemia.
- Molecular basis and biomarkers of the association between cholesterol metabolism dysregulation, obesity, and chronic inflammation, with endocrine-related cancer.
- Identification and impact of novel biomarkers and therapies and obesity/diabetes-related cardiometabolic complications, including non-alcoholic steatohepatitis.

Scientific Challenges

- Evaluate the cholesterol efflux induced from physiologically relevant cell types by HDL, obtained from plasma or cerebrospinal fluid from well-characterized patients with cardiovascular disease or Alzheimer's disease
- Elucidate the potential role of miRNAs as a novel therapeutic target in hyperhomocysteinemia-related atherosclerosis
- Explore the anti-cancer mechanisms related to cholesterol metabolism, especially in breast and thyroid cancer.
- Identify lipid biomarkers associated with heart damage within the context of diabetes.
- Evaluate the cardiometabolic effects of vitamin B3 derivatives within the context of obesity.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la LerHDL. ISCIII (PI16/00139). Dr. Enrique Lerma, Dra. Eugenia Mato.
- Preventing premature coronary heart disease in Catalonia by expanding Familial Hypercholesterolemia Diagnosis. Telemarató de TV3 2015 dedicada a Enfermedades Cardíacas. Dr. Antonio Pérez, Dra. Gemma Carreras, Dr. Josep Julve.
- Lipotoxicity and microvascular disease: contribution to myocardial damage in clinical and experimental models of diabetes. 2016.02.31. La Marató. Dr. José Luis Sánchez Quesada, B.S. Andrea Rivas-Urbina
- Translational Molecular Imaging for Detection of Cholesterol Entrapment in the Vasculature with 68Ga-labeled LRP1-derived Peptides. Fundación BBVA. 01/05/2020-01/05/2023. 199.511€. Drs. Esther Jorge Vizuete, Juan Carlos Escolà Gil; Francesc Carreras Costa; David Viladés Medel.
- Adiposity, inflammation and cholesterol deregulation in epithelial thyroid carcinoma. Evaluation of cholesterol-lowering and LXR-based therapies. ISCIII (111,320 €). PI19/00136. 01/01/2020-31/12/2022. Drs. Moral Duarte, Lerma Puertas, Ramón y Cajal Asensio, Fuste Chisara, Pérez García, Mato Matute, Corcoy Pla.
- Enfermedades metabólicas y cáncer (RED2018-102799-T). Ministerio de Ciencia, Innovación y Universidades. (20,000 €). Coordinator: José Fernández Checa. PI: Josep Julve; Concepción Vicente Llorente.

External Collaborations

- Drs. Diego Gómez-Coronado and Miguel A. Lasunción. Hospital Ramón y Cajal and CIBEROBN, Madrid, Spain.
- Dr. Alberto Dávalos. IMDEA-Food. Madrid, Spain.
- Dra. Montserrat Fitó. IMIM and CIBEROBN. Barcelona, Spain.
- Dr. Daniel Maspoch. ICREA. ICN2 Severo Ochoa Institute.
- Drs. Annabel F. Valledor and Júlia Peinado. Universitat de Barcelona. Barcelona, Spain.
- Dr. Luís Masana. Hospital Sant Joan de Reus and Universitat Rovira i Virgili and CIBERDEM. Reus, Spain.
- Dr. Manuel Vázquez-Carrera. Universitat de Barcelona and CIBERDEM. Barcelona, Spain.
- Dr. Joan Carles Laguna. Universitat de Barcelona. Barcelona, Spain.
- Dr. José Luís Martin-Ventura. Fundación Jiménez-Díaz and CIBERCV, Madrid, Spain.
- Dr. Jesús Vázquez. CNIC and CIBERCV, Madrid, Spain.
- Drs, Isabel Moreno and Francisco Tinahones. Biomedical Research Institute of Málaga (IBIMA). University Hospital of Malaga and CIBEROBN, Málaga, Spain.
- Drs. Antonio Zorzano and David Sebastian. Institute for Research in Biomedicine (IRB) and CIBERDEM. Barcelona, Spain.

- Drs. Fernando Civeira and Ana Cenarro. Hospital Clínico Universitario Miguel Servet and CIBERCV. Madrid, Spain.
- Dr. Petri Kovanen. Wihuri Research Institute. Helsinki, Finland.
- Dr. Matti Jauhiainen. National Institute for Health and Welfare. Helsinki, Finland.
- Dr. Srinu Reddy. Department of Medicine, UCLA. CA, USA.
- Dr. Ricardo Cassaroli. Universitat de Barcelona and IDIBABS. Barcelona, Spain.
- Dr. Miquel Hueso Val. Hospital Bellvitge. Barcelona, Spain.
- Dr. César Martín. Instituto de Biofisika. Universidad País Vasco, Spain.
- Dr. Carlos Fernández-Hernando. Yale University, USA

Active Grants

- Francisco Blanco Vaca. Centro de Investigación Biomédica en Red de Diabetes Mellitus y Enfermedades Metabólicas. CIBERDEM. CB07/08/0016. Ministerio de Sanidad y Política Social. Duration: 2007-2020. 603,488.96 €.
- Josep Julve Gil. Lipotoxicity and microvascular disease: contribution to myocardial damage in clinical and experimental models of diabetes. MARATO 201602.31. Fundació La Marató de TV3. Duration: 2017-2021. 108,000 €.
- Juan Carlos Escolà Gil. Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la HDL. PI16/00139. Instituto de Salud Carlos III. Duration: 2017-2020. 71,500 €.
- Andrea Patricia Rivas Urbina. Ajuts predoctorals de formació en recerca en salud 2017. FI17/00031. Instituto de Salud Carlos III. Duration: 2018-2021. 82,400 €.
- Marta Farràs Mañé. Contractes postdoctorals "Sara Borrell" 2017. CD17/00233. Instituto de Salud Carlos III. Duration: 2018-2021. 80,598 €.
- Francisco Blanco Vaca. Grup de Recerca d'Estructura de Lipoproteïnes, Dislipèmies i altres factors de risc de l'Arteriosclerosi. 2017 SGR 01149. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Noemí Rotllan Vila. Subprograma Contratos Ramón y Cajal 2017. RYC-2017-22879. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2024. 168,600 €.
- Francisco Blanco Vaca. TMAO y gammaBB y su relación con la disfuncionalidad de HDL y el riesgo de enfermedad coronaria en pacientes con hipercolesterolemia familiar y diabesidad. PI18/00164. Instituto de Salud Carlos III. Duration: 2019-2021. 102,000 €.
- Josep Julve Gil. Diabetes y obesidad: biomarcadores, fisiopatologia y efectos de nuevas terapias. CPII18/00004. Instituto de Salud Carlos III. Duration: 2019-2022. 91,125 €.
- Noemí Rotllan Vila. Proyecto asociado al contrato Ramón y Cajal. RYC-2017-22879(P). Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 40,000 €.
- Juan Carlos Escolà Gil. Adiposidad, inflamación y la desregulación del colesterol en el carcinoma de tiroides. Evaluación de estrategias terapéuticas basadas en la reducción del colesterol y la activación de LXR. PI19/00136. Instituto de Salud Carlos III. Duration: 2020-2022. 92,000 €.
- Josep Julve. Enfermedades metabólicas y cáncer. RED2018-102799-T. Duration: 2020-2021. 20,000 €.

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

Grants Awarded in 2020

- Noemí Rotllan Vila. Potenciales microRNAs como nuevas dianas terapéuticas en la arteriosclerosis relacionada con hiperhomocisteinemia. PID2019-104367RB-I00. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2022. 80,000 €.
- Marina Canyelles Vich. Contratos Rio Hortega 2020. CM20/00033. Instituto de Salud Carlos III. Duration: 2021-2022. 53,732 €.
- Giovanna Revilla Senra. Alteraciones en las funcionalidades de las lipoproteínas y su relación con el desarrollo de cáncer de tiroides. MV20/00013. Instituto de Salud Carlos III. Duration: 2021-2021. 17,710 €.
- Noemí Rotllan Vila. Papel del miR-590, miR-21 y/o miR-30d como dianas terapéuticas en la arteriosclerosis relacionada con hiperhomocisteinemia. FEA 2020-2. Fundación Española de Arteriosclerosis. Duration: 2021-2022. 10,909.09 €.

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

Doctoral Theses

- Analia Emilce Ramos. Eficacia y seguridad de la implantación de un protocolo de manejo de la hiperglucemia durante la hospitalización y al alta. Universitat Autònoma de Barcelona. Director: Pérez Pérez, Antonio. Date of defense: 13/07/2020.

Scientific Production

Total Impact Factor: 146.360 · Mean Impact Factor: 5.4207

Becerra-Tomas N., Mena-Sanchez G., Diaz-Lopez A., Martinez-Gonzalez M.A., Babio N., Corella D. et al. Cross-sectional association between non-soy legume consumption, serum uric acid and hyperuricemia: the PREDIMED-Plus study. EUROPEAN JOURNAL OF NUTRITION. 2020; Aug;59(5):2195-2206.doi: 10.1007/s00394-019-02070-w. **IF: 4.664**

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Diffusion Activities

Scientific Congresses

- XXXI Congreso Nacional de la Sociedad Española de Diabetes (virtual). 21-23 June 2020. Poster communications:
  - Elena María Goretti Diarte Añazco, Karen Alejandra Méndez Lara, Madalina-Nicoleta Nan, Núria Alonso, Francisco Blanco Vaca, María Galán Arroyo, Josep Julve Gil. Diastolic heart dysfunction is accompanied by cardiac steatosis and elevations of myocardial and circulating ceramide 18:0 in db/db mice.
  - Madalina-Nicoleta Nan, Elena María Goretti Diarte Añazco, Karen Alejandra Méndez Lara, David Santos Palacios, Núria Alonso, María Galán Arroyo, Josep Julve Gil. Excess adiposity and insulin resistance results in cardiac steatosis and hypertrophy in diet-induced obese mice.
- Dr. J.C. Escolà-Gil. Talk: El receptor de LDL y el eje HDL-LDL en el transporte reverso del colesterol: estudios en modelos experimentales de hipercolesterolemia familiar y en pacientes. Seminar for the Spanish Atherosclerosis Society webpage. 25 June 2020.
- Dr. J.C Escolà-Gil. Oral communication: LDL receptor regulates the reverse transport of macrophage-derived unesterified cholesterol via concerted action of the HDL-LDL axis. 88th European Atherosclerosis Society (EAS) Congress. Geneve, 4-7 October 2020.
- Dr. Josep Julve. Favorable effects of nicotinamide supplementation on adiposity and inflammation in mice. XI Reunión Anual CIBERDEM (virtual). 03 November 2020.

Scientific Diffusion

- Dra. Mireia Tondo. Talk: Diagnòstic Molecular del feocromocitoma-paraganglioma hereditari. Curs "Actualització en Feocromocitoma i Paraganglioma". Departament de Bioquímica. 16 January 2020.
- Dr. Josep Julve. Vitamina B3: Efectes anti-obesitat d'un nutrient minoritari. Cicle de ciència i recerca mèdica at Centre Cívic Navas. Barcelona, 21 January 2020.
- Dra. Noemí Rotllan. Jury of "Expo Recerca Jove" that evaluates the research work of students (Bachillerato and ESO) from all over the world organized by MAGMA association. Hospitalet de Llobregat, Barcelona. 27 February 2020.
- Dra. Noemí Rotllan. Potential microRNAs as a novel therapeutic target in hyperhomocysteinemia-related aterosclerosis. Seminar at Division of Nutritional Sciences at the University of Illinois. Virtual, 9 February 2020.
- Dr. Josep Julve. Potencial anti-inflamatorio de moléculas precursoras de NAD+ en modelos experimentales de diabetes mellitus. Lunes de Ciencia: Salud Gloval_Nov at Residencia d'Investigadors del CSIC. Barcelona, 30 November 2020.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Inflammatory Diseases

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De la Calle Martín, Oscar (FGS)
Franco Leyva, Teresa (FGS)
Juárez Rubio, Cándido (FGS)
Mariscal Rodríguez, Anaís (FGS)
Martínez Martínez, Laura (FGS)
Moga Naranjo, Maria Esther (FGS)
Mulet Gual, Maria (IR)
Ortiz de Juana, Maria Àngels (IR)
Osuna Gómez, Rubén (IR)
Zamora Atenza, Carlos (IR)

Main Lines of Research

- The role of the immune system in the development and perpetuation of autoimmune, immune-mediated diseases and inflammatory processes.
- Immunological response associated with the clinical course during immunomodulatory (immunotherapy and biological) treatments.
- The role of autoantibodies, components of the adaptive immunity system, in the pathogenesis of autoimmune processes and their use as diagnostic and prognostic markers in these diseases.
- Mechanisms involved in immunodeficiency.

Scientific Challenges

- Role of cells, molecules, and autoantibodies of the innate and adaptative immune response in the development and control of inflammatory processes, in the appearance of autoimmune phenomena, immunodeficiencies, infections, cardiovascular diseases and the development of tumours.
- Study of mechanisms involved in immunodeficiency caused by alterations of molecular components.
- Analysis of the evolution of immunological parameters and their correlation with the clinical response to treatment with immunomodulatory therapies.
- The cellular and molecular composition of complex human biological fluids in immunopathological processes. Association with clinical parameters and response to therapy.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Dr. C. Guarner, Dr. G. Soriano, Dra. Eva Roman, Dra. Esther Garcia-Planella and Dr. Jordi Gordillo (Digestive Pathology and CIBER). Mecanismes inflamatoris associats a la barrera epitelial en la cirrosi i malaltia inflamatoria intestinal.
- Dra. Novelli, Dr. Nomdedeu and Dr. Briones (Hematology). Regulación de la repuesta inmune por la unión a los leucocitos de plaquetas inducidas por eltrombopag.
- Dra. Isabel Illa (IP) (Neurology). Estudios moleculares y celulares en miastenia gravis: correlaciones clínicas y terapéuticas. Collaborator: Dr. Cándido Juárez. FIS PI16/1440
- Dr. César Díaz-Torné, Dr. Héctor Corominas and Dr. Ivan Castellví (Rheumatology). Caracterización de las plaquetas "educadas" en un entorno inflamatorio crónico para optimizar las terapias inmunoreguladoras con plaquetas. Estudio inmunológico de la inflamación sistémica en enfermos con gota.
- Dr. Plaza, Dr. Sibila and Dr. Castillo (Pneumology). Predictores de infecćon bronquial en enfermedades respiratorias crónicas.
- Dr. Lluís Puig, Dra. Serra and Dra. Vilarrassa (Dermatology). Estudio de dianas inmunogenéticas en piel y suero de pacientes con psoriasis moderado-grave, dermatitis atópica y sialoadenitis y su posterior clasificación para selección de tratamiento biológico existente.
- Dra. Majem, Dr. Barnades and Dr. Maroto (Oncology). Fuentes de PD-1 y PD-L1 en el cáncer de pulmón no microcítico. Estudio traslacional prospectivo del sistema inmune y de los biomarcadores de células tumorales circulantes en el cáncer de próstata metastásico resistente a la castración.
- Dr. Joaquín López-Contreras (IP) (Infectious Diseases. Internal Medicine) and Dra. Noelia Vilaltia (Hematology). Trampas extracelulares de los neutrófilos en sepsis. Marató 2018-2021. Collaborators: Dra. Silvia Vidal and Dr. Carlos Zamora.
- Dra. Olga Torres Bonafonte (IP) (Medicina Interna). Identificación de un inmunofenotipo de riesgo de mal pronóstico en ancianos que han sido ingresados por neumonía. Instituto de Salud Carlos III. PI18/00684. January 2019 - December 2021. Collaborator: Dra. Laura Martínez-Martínez.

External Collaborations

- Dra. Manichanh (Digestive Pathology, Hospital Vall d'Hebron)
- Dra. Hernández (Rheumatology, Hospital Clinic)
- Dr. Juan José de Agustí (Rheumatology, Hospital Vall d'Hebron)
- Dra. Blanca Sánchez (Hematology, Hospital del Mar)
- Dr. Albert Selva and Dr. Moisès Labrador (Allergy, Hospital Vall d'Hebron)
- Dr. Porcel (Internal Medicine, Hospital Arnau de Vilanova)
- Dr. Fernández and Dra. Guillén (Fundació Puigvert)
- Dra. Sabzevari (Precigen MD, USA)
- Dra. Semnani and Dr. Nutman del NIAID-NIH (Bethesda MD, USA)
- Dra. Catalfamo (Georgetown University School of Medicine. Washington DC, USA)
- Dra. Mònica Gumà (University of California San Diego, CA, USA)

Active Grants

- Silvia Vidal Alcorisa. Caracterización de las plaquetas "educadas" en un entorno inflamatorio crónico para optimizar las terapias inmunoreguladoras con plaquetas. PI17/00072. Instituto de Salud Carlos III. Duration: 2018-2020. 47,500 €.
- Silvia Vidal Alcorisa. Grup d'Immunologia. 2017 SGR 00867. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Josep Francesc Nomdedéu Guinot, Silvia Vidal Alcorisa. Immune response to COVID-19 in Hospital workers: identification of suitable donors for hyperimmune plasma therapy. SLD0017/20/00001. Departament de Salut. Duration: 2020. 109,428,05 €.
- Silvia Vidal Alcorisa. Regulación de la respuesta inmune por la unión a los leucocitos de plaquetas inducidas por eltrombopag. IIBSP-PTI-2018-65. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. Novartis. Duration: 2018-2020.
- Silvia Vidal Alcorisa. Fuentes de PD-1 y PD-L1 en el cáncer de pulmón no microcítico. IIBSP-PDL-2017-82. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. Bristol Mayer & Squidd. Duration: 2018-2020.
- Silvia Vidal Alcorisa. Estudio traslacional prospectivo del sistema inmune y de los biomarcadores de células tumorales circulantes en el cáncer de próstata metastásico resistente a la castración. IIBSP-PRO-2018-20. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. Bayer. Duration: 2018-2020
- Silvia Vidal Alcorisa. Estudio de dianas inmunogenéticas en piel y suero de pacientes con psoriasis moderado-grave y su posterior clasificación para selección de tratamiento biológico existente. IIBSP-PSO-2018-119. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. Abbvie. Duration: 2018-2020
- Silvia Vidal Alcorisa. Therapeutic targets in mechanisms of tolerance for autoimmune disease patients. Competitive Research Agreement process of Precigen (USA). Duration: 2020-2021.
- Silvia Vidal Alcorisa, Lluis Puig. Biosignatures of Skin in Atopic Dermatitis Subtypes for a Personalized Therapy. In-part discover. Seeking Novel Immune-Inflammatory Targets, Pathways and Therapies. Competitive Research Agreement process of Almirall. Duration: 2020-2021.

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

Grants Awarded in 2020

- Silvia Vidal Alcorisa. Estudio del perfil pro-inflamatorio de las plaquetas y sus derivados en pacientes con artritis reumatoide para identificar biomarcadores de inflamación y dianas terapéuticas. PI20/00184. Instituto de Salud Carlos III. Duration: 2021-2023. 72,000 €.

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

Doctoral Theses

- Lidia Perea. Associació d'elements de la resposta immune innata a les infeccions bacterianes en malalties respiratòries cròniques. Universitat Autònoma de Barcelona. Directors: Silvia Vidal and Oriol Sibila. Date of defense: 16/11/2020

Scientific Production

Total Impact Factor: 50.060 · Mean Impact Factor: 6.258

Baucells A., Martinez M.A., Alvarado-Cardenas M., Mariscal A., Martinez-Martinez L., Juarez C., Selva-O'Callaghan A., Anti-HMGCR Specificity of HALIP: A Confirmatory Study (2020) J IMMUNOL RES, 2020, 6292631-. **IF: 3.3270**

Bornachea O., Benitez-Amaro A., Vea A., Nasarre L., de Gonzalo-Calvo D., Escola-Gil J.C., Cedo L., Iborra A., Martinez-Martinez L., Juarez C., Camara J.A., Espinet C., Borrell-Pages M., Badimon L., Castell J., Llorente-Cortes V., Immunization with the Gly1127-Cys1140 amino acid sequence of the LRP1 receptor reduces atherosclerosis in rabbits. Molecular, immunohistochemical and nuclear imaging studies (2020) THERANOSTICS, 10 (7), 3263-3280. **IF: 8.5790**

Gonzalez-Manso A., Agut-Busquet E., Romani J., Vilarrasa E., Bittencourt F., Mensa A., Canto E., Arostegui J.I., Vidal S., Hidradenitis Suppurativa: Proposal of Classification in Two Endotypes with Two-Step Cluster Analysis (2020) DERMATOLOGY. **IF: 3.6950**

Mulet M., Zamora C., Porcel J.M., Nieto J.C., Pajares V., Munoz-Fernandez A.M., Calvo N., Esquerda A., Vidal S., Platelet factor 4 regulates T cell effector functions in malignant pleural effusions (2020) CANCER LETT, 491, 78-86. **IF: 7.3600**

Perea L, Cantó E, Suarez-Cuartin G, Aliberti S, Chalmers JD, Sibila O, Vidal S. A Cluster Analysis of Bronchiectasis Patients Based on the Airway Immune Profile. CHEST. 2020 Nov 18:S0012-3692(20)35156-4. doi: 10.1016/j.Chest.2020.11.011. Online ahead of print. **IF: 8.308**

Perea L., Rodrigo-Troyano A., Canto E., Dominguez-Alvarez M., Giner J., Sanchez-Reus F., Villar-Garcia J., Quero S., Garcia-Nunez M., Marin A., Monso E., Faner R., Agusti A., Vidal S., Sibila O., Reduced airway levels of fatty-acid binding protein 4 in COPD: Relationship with airway infection and disease severity (2020) RESP RES, 21 (1), 21-. **IF: 3.9240**

Sanz-Martinez M.T., Moga E., Sanchez Martinez M.A., Zamora Atenza C., Vidal S., Juarez C., Puig L., High Levels of Platelet-Lymphocyte Complexes in Patients with Psoriasis Are Associated with a Better Response to Anti–TNF-α Therapy (2020) J INVEST DERMATOL, 140 (6), 1176-1183. **IF: 7.1430**

Suarez-Calvet X., Alonso-Perez J., Castellvi I., Carrasco-Rozas A., Fernandez-Simon E., Zamora C., Martinez-Martinez L., Alonso-Jimenez A., Rojas-Garcia R., Turon J., Querol L., de Luna N., Milena-Millan A., Corominas H., Castillo D., Cortes-Vicente E., Illa I., Gallardo E., Diaz-Manera J., Thrombospondin-1 mediates muscle damage in brachio-cervical inflammatory myopathy and systemic sclerosis (2020) NEUROL-NEUROIMMUNOL, 7 (3). **IF: 7.7240**

Other Publications

- Leticia Alserawan de Lamo. Histocompatibilidad del Laboratorio a la clínica 2020. Publicación oficial de la Sociedad Española de Inmunología. 2020 April-June (40); 8-9 ISSN (digital): 0213-9626.

Diffusion Activities

Scientific Dissemination

- Silvia Vidal. Member of the Scientific Committee of the Societat Catalana d'Immunologia.
- Silvia Vidal. Member of the Internal Scientific Committee of the Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau.
- Silvia Vidal. Member of the Board of the Societat Catalana d'Immunologia, since November 2020.
- Silvia Vidal. Member of the FOCIS.
- Silvia Vidal. Chairman of the session COVID-19. XIVth Congress of the Societat Catalana d'Immunologia, joint meeting with the European Federation of Immunological Societies on Tour (EFIS on TOUR).
- Silvia Vidal. MINECO. Projects review.
- Silvia Vidal. Fundación Pública Andaluza Progreso y Salud. Projects review.
- Silvia Vidal. Doctoral follow-up court (UB-UAB).
- Elisabet Cantó. Masters court. Immunology UB-UAB.
- Silvia Vidal. Journal Editor. World J. of Gastroenteroloy

Press and Dissemination Communications

- Agencia SINC
- Diari ARA

Magazine Reviewer (Silvia Vidal)

- Clinical Respiratory Journal
- Cancer Letters
- Blood
- Journal of Immunology

Papers invited by Societies and Scientific Groups

- IL-6 y su papel en el sistema inmune. Diversidad y Complejidad de las Enfermedades Autoinmunes Sistémicas (Sociedad Aragonesa de Reumatología). 12 March 2020.
- El alcance del bloqueo de la IL-6. XXVI Simposio Internacional de Inflamacion y Enfermedades Reumáticas. 17-18 April 2020.
- Humoral response to SARS-CoV2 in hospital workers. Research symposium on coronavirus. Societat Catalana de Biologia. 6 May 2020.
- Mecanismos de acción de los nuevos tratamientos en AR. Implicación en la medicina personalizada. Curso Inmunología de la Sociedad Gallega de Reumatología. 28 May 2020.
- Inmunidad e Inmunopatología en COVID-19. Webinar: Descubriendo incógnitas en el entorno COVID-19 (Roche). Supported by SEPAR. 18 June 2020.
- Diferenciación inmunológica de los mecanismos de acción entre los fármacos para la artritis reumatoide. XI Simposio de Artritis Reumatoide (Sociedad Española de Reumatología). Gijon, 2-3 October 2020.
- Tratamientos de la PTI desde el punto de vista de la inmunología. 4 th year of Plaquetopenies (Societat Catalana Hematologia I Hemoterapia). 7 October 2020.
- Mecanismes de la Immunitat: Defectes i estímuls. XIII Jornada Tècnica Societat Catalana d'Immunologia. 19 November 2020.
- Immune response to SARS-CoV2 proteins in hospital workers. IIB Sant Pau – Scientific Retreat 2020. 17 December 2020.
- Laura Martínez. Invited Speaker. Resposta a infeccions i Immunosenescència. XIII Jornada Tècnica. Societat Catalana d'Immunologia. Ponent convidada: 19 November 2020.

Participation in the training of final year and master's degree students at the UB-UAB

- Cristina Camps Munar. Estudio de los niveles relativos de exosomas en plasma y su uso como biomarcadores no invasivos para el diagnóstico de pacientes con cáncer de mama. Máster en inmunología avanzada (Especialidad médica). Tutor: Silvia Vidal Alcorisa. Codirectors: Silvia Vidal Alcorisa and Elisabet Cantó Navés.
- Evelyn Prempeh. Pleural fluid: Does it effect the neutrophil conventional role? Masters Biomedicina (UB) (2019-20). Director: Silvia Vidal.
- Marta Lafuente Sánchez. Estudio del efecto del Ibrutinib sobre las subpoblaciones y capacidad de activación de las células T en leucemia linfática crónica. Codirectors: Esther Moga, Carolina Moreno Atanasio and Alba Mora Raya.
- Teresa Franco Leyva. Immunophenotyping of elderly patients with community-acquired pneumonia. Director: Laura Martínez Martínez.
- Internal student: Laia Aguilar. Director: Silvia Vidal.

Oral presentations at Congresses

- Laura Feltrer Martínez, Alvaro Izquierdo Cárdenas, Álvaro Santos Gutiérrez, Sandra Clotet Vidal, Yasmin El-Ebiary Metwally, Teresa Franco Leyva, Laura Martinez Martinez, Mª Encarnación Sáez Prieto, Jordi Casademont, Olga Torres. Seguimiento nutricional de los pacientes tras neumonía COVID mayores de 65 años. ¿es más importante que tras otra neumonía adquirida en la comunidad? I Congreso Nacional Interdisciplinar COVID-19. Virtual, 13-19 September 2020.
- Franco Leyva, T., Saez, M., Boera Carnicero, G., Clotet, S., Albert Jares, D., Feltrer, L., Juarez, C., Casademont, J., Torres, O., Martinez Martinez, L. Comparación de poblaciones linfocitarias entre pacientes post-COVID y otras neumonías. I Congreso Nacional Interdisciplinar COVID-19. Virtual, 13-19 September 2020.
- Teresa Franco Leyva; M Encarna Saez; Gemma Boera Carnicero; Sandra Clotet; Manuela Agustí Martí; Daniel Albert Jares; Laura Feltrer; Cándido Juárez; Jordi Casademont; Olga H Torres; Laura Martínez Martínez. Immunophenotyping of elderly patients with community-acquired pneumonia. XIII Jornada Tècnica Societat Catalana d'Immunologia. 19 November 2020.

Poster presentations

- E. Agut-Busquet, J. Romaní, E. Cantó, A. Mensa, J.I. Aróstegui, S. Vidal. Classification of hidradenitis suppurativa in two phenotypes with two-step cluster analysis, including presence of gamma-secretase mutations, Interleukin-1 Interleukin-10, Interleukin-17, Interleukin-6, C-reactive protein and clinical pattern. European Hidradenitis Suppurativa Foundation – 5-7th February 2020 (Athens). 5 February 2020.
- Eva Vilarrasa, Eugenia Agut-Busquet, Silvia Vidal, Elisabet Cantó, Lluis Puig, Flavia Bittencourt. Novel phenotype classification of Hidradenitis suppurativa based upon clinical, ultrasonographical and analytical parameters. Abstract ID: 120 for 9TH Conference of the European Hidradenitis Suppurativa Foundation.
- M. Riudavets, C. Zamora, I.Sullivan, L. Alserawan, A. Barba, P. Gallardo, J. Gavira, J. Serra, G. Anguera, A. Barnadas, S.Vidal, M. Majem. Leukocytes with bound platelets as a predictive biomarker for immune-related adverse events (irAEs) in advanced non-small cell lung cancer (NSCLC) patients (pts) receiving anti-PD-(L)1 agents. DOI:10.1200/JCO.2020.38.15_suppl.e15047 Abstract n. e15047. ASCO (American Society of Clinical Oncology).
- M. Mulet, C. Zamora, JC. Nieto, JM. Porcel, V.Pajares, A. Muñoz, N.Calvo, I.Espinosa, M. Pascual, S. Bielsa, S. Vidal.Migration of T lymphocytes into malignant pleural effusion as indicator of good prognosis in lung adenocarcinoma patients. XIV Congrés de la Societat Catalana Immunologia. 20 November 2020
- L. Perea, E. Cantó, G. Suarez-Cuartin, S. Aliberi, J.D. Chalmers, O. Sibila, S. Vidal. A cluster analysis of bronchiectasis patients based on the airway immune profile. XIV Congrés de la Societat Catalana d'Immunologia. HWG141649890. 19-20 November 2020.

- C. Díaz Torné, M.A. Ortiz, Ll. Sanz, S. Fernández, C. Zamora, L. Perea, H. Corominas y S. Vidal. Diferencias en el perfil proteómico entre enfermos con gota intercrítica y controles sanos. Congreso XLVI Sociedad Española de Reumatologia 2020 20-24 October 2020.
- Teresa Franco Leyva; M Encarna Saez; Gemma Boera Carnicero; Sandra Clotet; Manuela Agustí Martí; Daniel Albert Jares; Laura Feltrer; Cándido Juárez; Jordi Casademont; Olga H Torres; Laura Martínez Martínez. Different T helper profile in convalescent COVID-19 patients vs other pneumonia. XIV Congrés de la Societat Catalana d'Immunologia. 19-20 November 2020.
- Alba Mora, Marta Lafuente, Leticia Alserawan, Jorge Sierra, M. Esther Moga, Carol Moreno. Ibrutinib therapy modulates the T-cell development in Chronic Lymphocytic leukemia. XIV Congrés de la Societat Catalana d'Immunologia 19-20 November 2020.

Advisory Boards

- Regulación de la IL-17, rol en psoriasis y mecanismo de acción de brodalumab. Virtual advisory board on the mechanism of action of brodalumab (LEOPharma). 14 May 2020.

Accredited Health Training Courses

- Diferencias a nivel inmunológico de los mecanismos de acción entre los fármacos para la artritis reumatoide. Accredited for continuous education for health professions of the Illes Balears (Manacor). 7 February 2020.
- La nueva inmunología; Patogenia de las enfermedades autoinmunes explicada desde la inmunología. Implicaciones en la clínica; Mecanismos de acción de los nuevos tratamientos en AR. Implicación en la medicina personalizada; Nuevas dianas terapéuticas en el lupus eritematoso sistémico Interactive Course organized by Sociedad Gallega de Reumatología (Padrón). Accredited for continuing education for health professionals. 24 September 2020

Invitations to Scientific Meetings

- Inmunología de la Artritis reumatoide. Diferencias a nivel inmunológico de los mecanismos de acción entre los fármacos para la artritis reumatoide. Immunology Session of the Hospital General Universitario de Toledo. 5 March 2020.
- IL6: su importancia en la patogenia de la artritis reumatoide. Video collective work: "Reumatología al Día - Kevzara®: nuevas aportaciones refuerzan su utilidad clínica". 5 May 2020.
- Diferenciación inmunológica de los mecanismos de acción de fármacos para artritis reumatoide. Webinar: Inmunoseries. 19 May 2020.
- Diferencias a nivel inmunitario de los MoAs entre los fármacos para artritis reumatoide. Webinar 1: Reumatología al día (Sanofi). 27 May 2020.
- Papel del bloqueo de la Il-6 en pacientes con AR y anemia. Webinar 2: Reumatología al día (Sanofi). 29 June 2020.
- Los efectos de la IL-6 sobre los neutrófilos a la artritis reumatoide. Webinar 3: Reumatología al día (Sanofi) 16 July 2020.
- Papel de la IL-6 en la ECM idiopática. EUSAPharma – Reunión Multidisciplinar sobre enfermedad de Castleman multicéntrica e idiopática (Aragon). 19 November 2020.
- Diferenciación del bloqueo de la IL-6 vs. inhibidores de JAK y sarilumab vs. Tocilizumab. Workshop_Norte: Diferencia del bloqueo de la IL-6. 17 November 2020.
- Dianas terapéuticas en la artritis reumatoide. IV Jornadas Emeritenses de Inflamación y Autoinmunidad 20 November 2020.
- Rol de la IL-6 en la ECM idiopática. EUSAPharma – Reunión Multidisciplinar sobre enfermedad de Castleman multicéntrica e idiopática. 17 December 2020.

Other Courses: Internal Training

- Vigo. AR, 12 February 2020.
- Rol del sistema inmune en COVID-19 ¿Llegaremos a ser inmunes? Roche Farma S.A. Formacion Interna Roche Talk Virtual: COVID-19. 18 May 2020.
- Curso InmunoAR (online). 24 September 2020.
- Bases inmunológicas del Asma. Formación a Red de Dupilumab. 14 December 2020.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Endocrinology, Diabetes and Nutrition

Coordinator
Mauricio Puente, Diego (FGS)
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Members
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Blanco Soto, Rosa María (IR)
Castelblanco Echavarria, Esmeralda (CIBERDEM)
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Chico Ballesteros, Ana Isabel (FGS)
Corcoy Pla, Rosa (FGS)
Cubero Marcos, José María (FGS)
Cuixart Carruesco, Gemma (IR)
Genua Trullos, Idoia (FGS)
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López Argudo, Alicia (FGS)
Martínez Roldán, María José (IR)
Mato Matute, Eugenia (CIBERBBN)
Mendoza Mathison, Lilian Cristina (FGS)
Miñambres Donaire, Inka (FGS)
Pérez Pérez, Antonio (FGS)
Pujol Abajo, Montserrat (FGS)
Rodríguez Hernández, Claudia (IR)
Rojo López, Marina Idalia (IR)
Stantonyonge Sesnic, Nicole (IR)

Main Lines of Research

- Diabetic complications: atherosclerosis and microvascular disease.
- Diabetic epidemiology: primary care research, and research using large databases.
- Endocrinological diseases and pregnancy.
- Nodular disease and thyroid cancer.
- Diabetes and cardiovascular risk factors.

Scientific Challenges

Endocrine Neoplasms

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

Autoimmune diabetes mellitus

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

Diabetes and pregnancy

- Clinical research aimed at optimizing care for women with pre-gestational and gestational diabetes at pre-conception, pregnancy, birth, and postpartum stages. And specifically, addressing the relevance of adequacy of pregnancy weight gain, maternal predictive characteristics, and association with pregnancy outcomes.

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

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

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

- Mechanisms linking diabetes, obesity, and dyslipidaemia with cardiovascular disease.
- Optimal treatment and prevention of cardiovascular risk associated with obesity, hyperlipidaemia, metabolic syndrome and diabetes.

Diabetic complications: atherosclerosis and microvascular disease

- Clinical and translational studies that explore research in pathogenesis, biomarkers, and early detection and treatment of microvascular and chronic complications, especially atherosclerosis.

Diabetic epidemiology: primary care research, and research using large databases

- Research into diabetes mellitus in Primary Healthcare in Catalonia. In recent years, the group has developed projects using the SIDIAP database, on different aspects of real-world evidence.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Oncogenesis and Antitumour Drugs (Ramon Mangues).
- Ophthalmology (Fernando Rodríguez Álvarez).
- Cardiovascular Biochemistry (Jorge Ordóñez, José Luis Quesada, Francisco Blanco).
- General and Digestive Surgery (Antonio Moral, Ignacio Pérez).
- Reproductive Health (Carmen Medina Mallén).
- Metabolic Bases of Cardiovascular Risk (J.C. Escolà).
- Metabolic Bases of Cardiovascular Risk (Francisco Blanco).
- Group of Regulatory Mechanisms in Cardiovascular Remodeling (Maria Galán).
- Posterior Segment and Ocular Inflammation (Ignacio Vela).
- Lipid and Cardiovascular Pathology (Concepción Vicenta Llorente).
- Biomarkers of Cardiovascular Disease (Teresa Padró).

External Collaborations

- University of East Anglia, Norwich Medical School (Helen Murphy)
- Mount Sinai Hospital, Toronto (Denice Feig)
- Bioengineering and Telemedicine Group at the Universidad Politécnica de Madrid, Spain (GBT-UPM) (Enrique J. Gómez Aguilera).
- Biomedical Engineering Research Group at the Universidad de Sevilla, Spain (GIB-US) (Laura Roa Romero).
- Molecular Oncology Group at HVH (PI: S. Schwartz, Jr).
- Development of New Drugs Group at the Universidad del País Vasco, Spain (PI: JL Pedraz).
- CONCEPTT: Women with Type 1 Diabetes in Pregnancy Trial Collaborators.
- Vitamin D and Lifestyle Intervention for Gestational Diabetes Mellitus (GDM) Prevention (DALI) Consortium.
- Action Lada European Consortium (Paolo Pozilli, Richard David Leslie).
- Real-world evidence studies (ERICAS). (Kamlesh Khunti – University of Leicester).
- Hospital and Institute for Health Science Research Germans Trias i Pujol (IGTP) (Nuria Alonso, Manel Puig-Domingo).
- Medicine Department, University of Padova (Angelo Avogaro).
- Bioinformatics and Biomedical Signals Laboratory (Alex Perera Lluna).
- Vascular and Renal Translational Research Group (José Manuel Valdivielso).
- Research Group on Obesity, Diabetes and Metabolism (ODIM) (Albert Lecube, Marta Hernández).
- Department of Endocrine Physiopathology and the Nervous System. Institut d'Investigacions Biomèdiques "Alberto Sols".
- Department of Medicine, Universidad de Buenos Aires UBA (Argentina) (F. Pitoia).
- Universidade Federal do Maranhão (Hospital Universitário - Serviço de Endocrinologia), São Luís, Maranhão, Brasil (Marcelo Magalhães Silva).
- Glycotechnology CIC biomaGUNE. San Sebastián, Gipuzkoa (Niels Reichardt).

Active Grants

- Rosa Corcoy Pla. Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina. CIBERBBN. CB06/01/0009. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 543,384.65 €.
- Rosa Corcoy Pla. Grup de Recerca en Endocrinologia, Diabetis i Metabolisme. Universitat Autònoma de Barcelona, Hospital de la Santa Creu i Sant Pau (EDUAB-HSP). 2017 SGR 01652. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Diego Mauricio Puente. Descubrimiento y validación de marcadores de predicción de diabetes tipo 2: proyecto colaborativo de cohortes. PI18/00328. Instituto de Salud Carlos III. Duration: 2019-2021. 145,750 €.
- Paula Quifer Rada. Risk and benefits of beer and nonalcoholic beer moderate consumption on cardiovascular system. CD18/00172. Instituto de Salud Carlos III. Duration: 2019-2022. 80,598 €.
- Nicole Stantonyonge Sesnic. Neurofilamento de cadena ligera en sangre como marcador precoz de alteraciones neurocognitivas en pacientes con diabetes mellitus tipo 1 e hipoglicemia inadvertida. SED 2018. Societat Espanyola de Diabetis. Duration: 2018-2021. 18,181.82 €.
- Eugenia Mato Matute. És el 27-hydroxycholesterol un metabòlit senyalizador en el carcinoma epitelial de tiroide? SCEN 2018. Societat Catalana d'Endocrinologia i Nutrició. Duration: 2019-2020. 8,181.82 €.
- Cintia Gonzélez Blanco. Les xarxes socials com alternativa a l'educació terapèutica tradicional. ACD 2019. Associació Catalana de Diabetis. Duration: 2019-2021. 5,454.55 €.
- Diego Mauricio Puente. Centro de Investigación Biomédica en Red de Diabetes y Enfermedades Metabolicas Asociadas (CIBERDEM). CB15/08/00071_2. Ministerio de Economía y Competitividad. Duration: 2018-2020. 149,853.23 €.
- Antonio Pérez. TMAO y gamma BB y su relación con la disfunción de HDL y el riesgo de enfermedad coronaria en pacientes con hipercolesterolemia familiar y diabesidad. PI18/0016. Duration: 2019-2021.
- Antonio Pérez. Contribución de especies lipídicas (esfingosina-1-fosfato) asociadas con HDL sobre la disfunción miocárdica en pacientes con diabetes mellitus tipo 2 y efecto del control glicémico. PI17/00232. Duration: 2018-2020.
- Rocío Puig. Función de las células del sistema inmune presentes en el tejido adiposo humano en el desarrollo de diabetes tipo 2: Oncostatina M y otras potenciales dianas terapéuticas. PI17/01455. Duration: 2018-2020.
- Cintia González. Comprehensive approach of non-adherent patients through a mHealth environment in people with endocrine diseases (Lyfe4AD). CIBER-BBN - Intramural Projects. Duration: 2018-2020.
- Antonio Pérez. Tejido adiposo epicárdico en obesidad y diabetes. Mecanismos moleculares de riesgo cardiovascular y búsqueda de nuevos biomarcadores. PI20/00334. Duration: 2021-2023.
- Dídac Mauricio and Josep Franch. Epidemiology of SARS-CoV-2 in persons with diabetes mellitus and obesity in Catalonia - Study epiCOVID-19DMO. Primary Care Diabetes Europe (PCDE). Duration: 2020-2022.

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

Grants Awarded in 2020

- Lilian Cristina Mendoza Mathison. Relación entre los diferentes compuestos de la vitamina D (total, D2, D3, 3-epi-25(OH)D3) y las medidas de homeostasis de la glucosa durante la gestación. Subestudio del proyecto DALI. SED 2020. Sociedad Española de Diabetes. Duration: 2020-2021. 18,000 €.
- Diego Mauricio Puente. Promoción e impulso de la investigación en el área temática de Diabetes y Enfermedades Metabólicas Asociadas., 292_ateromatosa_dem. Centro de Investigación Biomédica en Red. Duration: 2020-2021. 32,157.27 €.
- Rosa Corcoy Pla. Desarrollo de una herramienta para la determinación de riesgo genético y prevención personalizada de la diabetes gestacional. RTC2019-007406-1. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2022.138,873.74 €.

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

Doctoral Theses

- Xinglei Xie. Incremento ponderal en mujeres con diabetes pregestacional y gestacional. Variables predictoras y asociaciones con resultados perinatales. Universitat Autònoma de Barcelona. Director: Rosa Corcoy. Date of defense: 22/11/2020.
- Marc Carbonell Puig. Retinopatia diabètica i gruix coroïdal com a factors associats a la malaltia ateroscleròtica subclínica en pacients amb diabetis mellitus tipus 1 sense antecedents previs de malaltia cardiovascular. Universitat Autònoma de Barcelona. Directors: Dídac Mauricio Puente; Xavier Valldeperas Belmonte; Núria Alonso Pedrol. Date of defense: 31/01/2020.
- Minerva Granado Casas. Adherencia a la Dieta Mediterránea y resultados percibidos por el paciente en la diabetes autoinmune. Universitat de Lleida. Directors: Dídac Mauricio Puente; Joan Torres Puig-gros. Date of defense: 19/02/2020.
- Ana Palanca. Subclinical atherosclerosis in chronic kidney disease and diabetis. Universitat Autònoma de Barcelona. Directors: Dídac Mauricio Puente, Núria Alonso Pedrol, Date of defense: 28/09/2020.
- Analia Emilce Ramos. Eficacia y seguridad de la implantación de un protocolo de manejo de la hiperglucemia durante la hospitalización y al alta. Universitat Autònoma de Barcelona. Director: Antonio Pérez. Date of defense: 13/07/2020.

Scientific Production

Total Impact Factor: 280.0340 · Mean Impact Factor: 3.6348

Amor AJ, Castelblanco E, Hernández M, Gimenez M, Granado-Casas M, Blanco J, Soldevila B, Esmatjes E, Conget I, Alonso N, Ortega E, Mauricio D. Advanced lipoprotein profile disturbances in type 1 diabetes mellitus: a focus on LDL particles. (2020) CARDIOVASC DIABETOL 19:126. doi: 10.1186/s12933-020-01099-0. **IF: 7.332**

Armario P, Brotons C, Elosua R, Alonso de Leciñana M, Castro A, Clarà A, Cortés O, Díaz Rodriguez Á, Herranz M, Justo S, Lahoz C, Pedro-Botet J, Pérez Pérez A, Santamaria R, Tresserras R, Aznar Lain S, Royo-Bordonada MÁ. Comentario del CEIPV a la actualización de las Guías Europeas de Prevención Vascular en la Práctica Clínica [Statement of the Spanish Interdisciplinary Vascular Prevention Committee on the updated European Cardiovascular Prevention Guidelines]. (2020) REV ESP SALUD PUBLICA. 94:e202009102. PMID: 32915170. **IF: 0.746**

Ballesteros Pomar MD, Vilarrasa García N, Rubio Herrera MÁ, Barahona MJ, Bueno M, Caixàs A, Calañas Continente A, Ciudin A, Cordido F, de Hollanda A, Diaz MJ, Flores L, García Luna PP, García Pérez-Sevillano F, Goday A, Lecube A, López Gómez JJ, Miñambres I, Morales Gorria MJ, Morinigo R, Nicolau J, Pellitero S, Salvador J, Valdés S, Bretón Lesmes I. The SEEN comprehensive clinical survey of adult obesity: Executive summary. (2020) ENDOCRINOL DIABETES NUTR. S2530-0164(20)30162-2. doi: 10.1016/j.endinu.2020.05.003. **IF: 1.108**

Bellido V, Pérez A. Consequences of COVID-19 on people with diabetes. (2020) ENDOCRINOL DIABETES NUTR. 67:355-356. doi: 10.1016/j.endinu.2020.04.001. **IF: 1.108**

Benitez-Amaro A., Revuelta-Lopez E., Bornachea O., Cedo L., Vea A., Herrero L., Roglans N., Soler-Botija C., de Gonzalo-Calvo D., Nasarre L., Camino-Lopez S., Garcia E., Mato E., Blanco-Vaca F., Bayes-Genis A., Sebastian D., Laguna J.C., Serra D., Zorzano A., Escola-Gil J.C., Llorente-Cortes V., Low-density lipoprotein receptor-related protein 1 deficiency in cardiomyocytes reduces susceptibility to insulin resistance and obesity (2020) METABOLISM, 106. **IF: 6.1590**

Bermudez-Lopez M., Martinez-Alonso M., Castro-Boque E., Betriu A., Cambray S., Farras C., Barbe F., Pamplona R., Lecube A., Mauricio D., Purroy F., Valdivielso J.M., Fernandez E., Subclinical atheromatosis localization and burden in a low-to-moderate cardiovascular risk population: the ILERVAS study Localización y carga de ateromatosis subclínica en población con un riesgo cardiovascular bajo-moderado: estudio ILERVAS (2020) REV ESP CARDIOL. **IF: 4.6420**

Buzzetti R, Tuomi T, Mauricio D, Pietropaolo M, Zhou Z, Pozzilli P, Leslie RD. Management of Latent Autoimmune Diabetes in Adults: A Consensus Statement From an International Expert Panel. (2020) DIABETES 69:2037-2047. doi: 10.2337/dbi20-0017. **IF: 7.720**

Castelblanco E, Sanjurjo L, Barranco-Altirriba M, Falguera M, Hernández M, Soldevila B, Sarrias MR, Franch-Nadal J, Arroyo JA, Fernandez-Real JM, Alonso N, Mauricio D. The Circulating Fatty Acid Transporter Soluble CD36 Is Not Associated with Carotid Atherosclerosis in Subjects with Type 1 and Type 2 Diabetes Mellitus. (2020) J CLIN MED 9:E1700. doi: 10.3390/jcm9061700. **IF: 3.303**

Cedo L., Metso J., Santos D., Garcia-Leon A., Plana N., Sabate-Soler S., Rotllan N., Rivas-Urbina A., Mendez-Lara K.A., Tondo M., Girona J., Julve J., Pallares V., Benitez-Amaro A., Llorente-Cortes V., Perez A., Gomez-Coronado D., Ruotsalainen A.-K., Levonen A.-L., Sanchez-Quesada J.L., Masana L., Kovanen P.T., Jauhiainen M., Lee-Rueckert M., Blanco-Vaca F., Escola-Gil J.C., LDL receptor regulates the reverse transport of macrophage-derived unesterified cholesterol via concerted action of the HDL-LDL Axis: Insight from mouse models (2020) CIRC RES, 127 (6), 778-792. **IF: 14.4670**

Cheng A., Bailey T.S., Mauricio D., Roussel R., Insulin glargine 300 U/mL and insulin degludec: A review of the current evidence comparing these two second-generation basal insulin analogues (2020) DIABETES-METAB RES, 36 (7). **IF: 3.3140**

Chico A, Aguilera E, Ampudia-Blasco FJ, Virgina Bellido, Cardona-Hernández R, Javier Escalada F, Fernández D, Gómez-Peralta F, González Pérez de Villar N, Gorgojo JJ, Mezquita-Raya P, Morales C, de Pablos Velasco P, Palomares R, Parra J, Rivero MT, González-Blanco C. Clinical Approach to Flash Glucose Monitoring: An Expert Recommendation. (2020) J DIABETES SCI TECHNOL. 14:155–164. doi: 10.1177/1932296819841911. **IF: 3.462**

Chico A, Corcoy R. Intensive Insulin Therapy (= Basal-Bolus). AM J THER. 2020. doi: 10.1097/MJT.0000000000001152. Online ahead of print. **IF: 1.955**

Codina M, Corcoy R, Goya MM; en representación del GEDE Consenso del Grupo Español de Diabetes y Embarazo (GEDE). Update of the hyperglycemia Gestational diagnosis during the COVID-19 pandemic. (2020) ENDOCRINOL DIABETES NUTR. 67:545-552. doi: 10.1016/j.endinu.2020.05.002. **IF: 1.108**

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De Hollanda A, Lecube A, Rubio MA, Sánchez E, Vilarrasa N, Oliva JG, Fernández-Soto ML, Salas-Salvadó J, Ballesteros-Pomar MD, Ciudin A, Torres F, Vidal C, Morales MJ, Valdés S, Pellitero S, Miñambres I, Masmiquel L, Goday A, Suarez L, Flores L, et al. New Metrics to Assess Type 2 Diabetes after Bariatric Surgery: The "Time-Within-Remission Range". (2020) J CLIN MED. 9:1070. doi: 10.3390/jcm9041070. **IF: 3.303**

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Other Publications

- S. Azriel, A. Chico. Novedades tecnología y diabetes mellitus en las recomendaciones de la ADA 2020 para diabetes mellitus. July 2020. (https://www.seen.es/portal/grupos-de-trabajo/diabetes).

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- D. Mauricio (ed.). Clinical research on diabetic complications. MDPI, 2020. ISBN 978-3-03943-825-9

Diffusion Activities

Scientific Dissemination

International Courses

- Rosa Corcoy (coordinator). DALI study. IADPSG 2020. 13-26 November 2020.
- Rosa Corcoy (coordinator). Diabetes and Metabolism 2020 online. 26th ESE Postgraduate Training Course in Clinical Endocrinology. Diabetes and Pregnancy. 25 November 2020.

National Courses

- Rosa Corcoy (coordinator). La Nueva realidad: Diabetes y tecnología. La clínica de diabetes y gestación en tiempos de COVID. DM2 Station: Sant Pau. 30 September 2020.
- Ana Chico (coordinator). Diabetes-Simposium Org. Current Lectures in Diabetes. EACCME accredited e-learning activity: Multilingual Education Programme – Time in Range in Diabetes Management. September 2020.

- Cintia González, Rosa Corcoy (coordinators). Curso de actualización en feocromocitoma-paragangliona. Hospital de la Santa Creu i Sant Pau. UAB. 16 January 2020.
- Cintia González (coordinator). Curso avanzado de diabetología virtual (Aimed at third-year endocrinology and nutrition residents). Sociedad Española de Diabetes. September 2020.
- Cintia González (coordinator). Online course: Uso de los sistemas de monitorización flash de glucosa. Sociedad Española de Diabetes. November 2020-February 2021.
- Cintia González (coordinator). Primer Curso de Simulación y Seguridad Clínica en el manejo del enfermo en un Servicio de Endocrinología. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. 2020.
- José María Cubero. Evaluación endocrinológica del paciente con Orbitopatía Tiroidea. VI Curso de Avances en Oftalmopatía Tiroidea. UAB. Hospital de Sant Pau. 2020.

International Conferences

- Rosa Corcoy. Atención a las gestantes con diabetes durante el período COVID-19. También a las que todavía no están gestantes o a las que aún no saben si tienen diabetes. Sociedad Argentina de Diabetes. 5 September 2020.
- D. Mauricio. The virtual Kardiovize Conference. Challenges in the Burden and Management of Prediabetes and Diabetes in Europe. 16 October 2020.
- D. Mauricio. The influence of microangiopathy on macroangiopathy in diabetis. 30th EASDec Annual Meeting. 5-6 November 2020.
- D. Mauricio. Cleveland Clinic Advanced Certificate Course in Diabetes 2020. EASD Diabetes Symposium, India. 30 August 2020.

National Conferences

- A. Chico. Hipoglicèmia i deteriorament cognitiu. XIII Jornada Associació Catalana de Diabetis. Online, 29-30 October 2020.
- A. Chico. Highlights ADA 2020. Sociedad Española de Endocrinología y Nutrición. 9 June 2020.
- A. Chico. Presente de las insulinas basales, ¿qué aporta degludec u200? NovoNordisk. 21 October 2020.
- A. Chico. En paciente DM1 mal controlado: iniciamos bomba de insulina o monitorización continua de glucosa? Sociedad Española de Endocrinología y Nutrición. February 2020.
- A. Chico. Continuous Glucose Monitoring for Diabetes: clinical cases approach. Update in Diabetology and Cardionephrology 2020. Sociedad Española de Diabetes and ISABIAL (Instituto de Investigación Sanitaria y Biomédica de Alicante). November 2020.
- Cintia González. Sensores implantables. VII Jornadas Grupo Tecnologías Aplicadas a Diabetes de la Sociedad Española de Diabetes. Madrid, January 2020.
- Rosa Corcoy. La vuelta a la normalidad sanitaria. El impacto de la COVID-19 en las patologías más prevalentes. Fundación Bamberg, 7 July 2020.
- Antonio Pérez. ¿Podemos ir más allá en el tratamiento de la hiperglucemia hospitalaria y al alta? estudio COBALTA. XIV Reunión de Diabetes, Obesidad y Nutrición. Valencia, 30-31January 2020.
- Antonio Pérez. Telemedicina como respuesta a los retos de la asistencia sanitaria en diabetes. XIV Foro Gerendia. Virtual. 30 November 2020.
- Antonio Pérez. President of the Organizing and Scientific Committee. XXXI Congreso de la SED. Virtual, 21-23 June 2020.
- Riesgo hepático del paciente que padece diabetes tipo 2. XXXI Congreso de la SED. Virtual, 21-23 June 2020.
- D. Mauricio. La redGDPS respon. 5a Jornada Actualització en Diabetis en Atenció Primària. 11-12 November 2020.
- D. Mauricio. Utilidad de las bases de datos de vida real. Ejemplo Sistema de Información para el Desarrollo de la Investigación en Atención Primaria (SIDIAP). VIII Congreso Autonómico de SEMERGEN Aragón. Virtual, 26-28 November 2020.

International Congresses

- Nicole Stantonyonge, Fred Sampedro, Saúl Martínez-Horta, M. Valle Camacho, Jorge Méndez, Beatriz Gómez, Ana Chico. Impaired awareness of hypoglycaemia in type 1 Diabetes is associated with Structural Brain Differences and Increased Cerebral Metabolism. 56 Annual Meeting of the European Association for the Study of Diabetes (EASD). Virtual, 21-25 September 2020.

National Congresses

- Jiaming Liu, Apolonia García-Patterson, Xinglei Xie, Queralt Asla, Helena Sardà, Ana Chico, Isabel Pujol, Rosa Corcoy. Seguiment pregestacional de dones amb diabetis mellitus: No tot són bones notícies. XIII Jornada Associació Catalana de Diabetis. Virtual, 29-30 October 2020.
- Manel Mateu Salat, Rosa Corcoy, Queralt Asla Roca, Helena Sardà Simó, Judit Amigó Farran, Isabel Pujol Jiménez, María José Martínez Roldán, Ana Chico. Beneficis del pas de teràpia amb bomba d'insulina (ISCI) a sistema combinat bomba-sensor (ISCI-MCG) amb parada predictiva en pacients amb DM1 i hipoglucèmies. XIII Jornada Associació Catalana de Diabetis. Virtual, 29-30 October 2020.
- A. Chico, JM. Diaz, J. Sánchez-Hernández, MJ. Martínez, I. Pujol, J. Places, C. González, I. Genua. Precisió del sistema de monitorització flash de glucosa en pacients amb diabetis en hemodiàlisi i la seva relació amb el grau d'hidratació. XIII Jornada Associació Catalana de Diabetis. Virtual, 29-30 October 2020.
- Helena Sardà, Queralt Asla, Claudia Rodríguez, Natalia Mangas, Alicia López, Manel Mateu, Judit Amigó, Èlia Álvarez, Rosa Corcoy, Ana Chico. Experiència inicial de l'ús de la monitorització flash de glucosa (MFG) en pacients amb diabetis tipus 1 (DM1) amb criteris de finançament. XIII Jornada Associació Catalana de Diabetis. Virtual, 29-30 October 2020.
- Nicole Stantonyonge, Fred Sampedro, Saúl Martínez-Horta, M. Victoria Camacho, Jorge Eliecer, Beatriz Gómez, Ana Chico. Alteraciones cerebrales en sujetos con Diabetes Mellitus tipo 1 e hipoglicemia asintomática. XXXI Congreso de la Sociedad Española de Diabetes. Virtual, 21-23 June 2020.
- Q. Asla, H. Sardà, N. Mangas, C. Rodríguez, A. López, R. Corcoy, A. Chico. Experiencia inicial del uso de la monitorización flash de glucosa en pacientes con DM1 y criterios de financiación. XXXI Congreso de la Sociedad Española de Diabetes. 21-23 June 2020.
- Queralt Asla, Helena Sardà, Manel Mateu, Èlia Álvarez, Lilian Mendoza, Enrique Lerma, Victòria Fusté, Inka Miñambres, Ana Chico. Carcinoma de paratiroides y adenoma de paratiroides atípico como causas infrecuentes de hiperparatiroidismo primario: presentación de una serie de 7 casos. Congreso de la Sociedad Española de Endocrinología y Nutrición. 14-17 October 2020.
- Helena Sardà, Queralt Asla, M. del Mar Concepción, Manel Mateu, Èlia Álvarez, Ana Chico, Antonio Pérez. Prevalencia y características de la diabetes en la población con enfermedad pancreática. XXXI Congreso de la Sociedad Española de Diabetes. 21-23 June 2020.
- A. Chico, JM Díaz, J. Sánchez, MJ Martínez, I. Pujol, J. Places, I. Genua. Precisión del sistema de monitorización flash de glucosa en pacientes con diabetes en hemodiálisis y su relación con el grado de hidratación. XXXI Congreso de la Sociedad Española de Diabetes. 21-23 June 2020.
- Helena Sardà, Lluis Bassas, Eulàlia Urgell, Jose Luís Sanchez Quesada, Queralt Asla, Èlia Àlvarez, Manel Mateu, Idoia Genua, Antonio Pérez, Inka Miñambres. La cirurgia bariàtrica millora l'hipogonadisme i la funció erèctil. XXIII Congrés de la Societat Catalana d'Endocrinologia i Nutrició. 2020. Virtual.
- H Sardà, L Bassas, E Urgell, JL Sanchez-Quesada, Q Asla, E Alvarez, M Mateu, I Genua, I Miñambres, A Pérez. La cirugía bariátrica mejora el hipogonadismo y la disfunción eréctil. 61 Congreso SEEN. 2020. Virtual.
- Cintia González. Coordinator. VII Jornadas Grupo Tecnologías Aplicadas a Diabetes de la Sociedad Española de Diabetes. Sociedad Española de Diabetes. January 2020.

Dissemination Activities to the Society

- Cintia González. Permanent collaboration with the magazine Salud sin bulos (https://saludsinbulos.com/).
- Cintia González. Permanent collaboration with the associations of diabetes patients of Madrid and Catalonia (web and magazine).
- C. González. Conference. Telemedicina y diabetes: un antes y un después del COVID-19. II Diabetes Influencers. Congress organized by the Asociación de Diabetes Cataluña. 2020.

Twitter account. Servicio Endocrinología y Nutrición

- Account start: March 2018
- Followers: 781
- Following: 100
- Total number of Tweets: 1262
- Analytics data (October - November 2020): 325 impressions per day, Interaction rate 1.8%, Ret 92, likes 290.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Pituitary Gland Disorders

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Main Lines of Research

- Role of myosteatosis in the development and persistence of residual muscle weakness in treated acromegaly and Cushing syndrome. Study of the mechanisms involved.
- Effect of an individualized exercise program on muscle structure and function, and patient well-being.
- ERCUSYN: European Register on Cushing's Syndrome. Maintenance and operation of the database containing more than 2000 patients, which so far is the largest one worldwide on these patients.
- Study of bone microarchitecture and resistance and factors that determine them in Cushing's syndrome or acromegaly in remission. Model for investigating the body's bone-fat interaction.
- Study of the physiological and pathological secretion of oxytocin in humans outside of pregnancy and lactation. Identification and clinical relevance of an oxytocin-deficient state in patients with hypothalamic and pituitary diseases, who presumably have the highest risk for oxytocin deficiency.
- Aetiology and extent of impaired quality of life, fatigue, and cognitive, affective and emotional dysfunction in patients with Cushing's syndrome. Prospective studies using structural and functional magnetic resonance imaging, positron emission tomography, genetic and cerebrospinal fluid analysis.
- Effects of mindfulness therapy in patients with acromegaly and Cushing's syndrome.
- Spanish Molecular Registry on Pituitary Adenomas (REMAH study).
- Collaboration in the international consortium to identify genes and pathogenic mechanisms involved in the development of craniopharyngiomas and pituitary adenomas.

Scientific Challenges

- Evaluate long-term persistent morbidity and mortality in patients who have had Cushing's syndrome or acromegaly, particularly bone quality, psychological outcomes, muscular dysfunction and quality of life.
- Analyse and update the European database of patients with Cushing syndrome (ERCUSYN), which in the year 2020 included over 2000 patients, with partners from 53 centres in 26 countries.
- Identification of a provocation test to reveal an oxytocin-deficient state in patients with hypothalamic and pituitary diseases using a randomized, crossover, placebo-controlled design.
- Conduct in-vitro molecular analysis of operated pituitary adenomas within the REMAH (Molecular Registry of Pituitary Adenomas) study, sponsored by the Spanish Endocrinology and Nutrition Society (SEEN), to investigate personalized markers of therapeutic response (mainly in acromegaly, corticotroph adenomas and non-functioning pituitary adenomas).
- Analyse clinical and molecular aspects of pituitary adenomas diagnosed at a young age, in collaboration with the Hospital Universitario Cruces.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Collaboration with the neuromuscular research group led by Drs. Isabel Illa and Eduard Gallardo, to evaluate muscle in patients treated for acromegaly and Cushing's syndrome. This multidisciplinary group also includes Rehabilitation (Dr. H. Bascuñana and Mr. Jordi García), and Imaging (Dr. J. Llauger), and a CIBERER working group has been set up by Dr. E. Valassi to investigate non-invasive diagnostic tools for early detection of impairment of muscle architecture in patients with rare pituitary diseases.
- Collaboration by Dr. Alicia Santos with the Psychiatry research group (mainly with Dr. Joaquim Soler, Dr. Juan Carlos Pascual and Dr. Cristina Carmona) in order to analyze the effects of compassionate therapy in patients with eating disorders and borderline personality disorder. (Efectos de la terapia de compasión en pacientes con trastornos de la conducta alimentaria y trastorno límite de la personalidad).
- Collaboration by Elena Valassi with the Unit of Palliative Care led by doctor Antonio Pascual to investigate the clinical implications of poor glycemic control in patients with advanced chronic diseases.
- Collaboration with the group of Jordi Surrallés on the study of telomeres in pituitary diseases.
- Collaboration with Dr. H. Corominas of Rheumatology to perform capillaroscopy in patiens with acromegaly and Cushing's syndrome, in order to further evaluate persistent osteo-arthro-myopathy.

External Collaborations

- Participation in the project of Personalized Medicine of the ISCIII, number PMP 15/00027: Improved and efficient therapy of acromegaly by implementation of a personalized and predictive algorithm including functional analysis, imaging and genomic information.
  - Global PI: Manel Puig Domingo.
  - Participating PIs:
  - IGTP Group/CIBERER GP: Manel Puig Domingo (PI); Sant Pau Group/CIBERER 747: Susan Webb (PI), E Resmini, E Valassi, A Santos, I Crespo, A Aulinas
  - IDIBAPS/Clínic Group/CIBERER GV: Irene Halperin (PI)
  - Hospital de la Ribera Group (Alzira): Carmiña Fajardo (PI)
  - Hospital de la Princesa Group (Madrid)/CIBERER GP: Mónica Marazuela (PI)
  - Complejo Hospitalario de Santiago de Compostela Group: Ignacio Bernabéu (PI)
  - Hospital Universitario de Alicante/CIBERER GV: Antonio Picó (PI)
  - IMS Health: Montserrat Roset (PI)
- Clinical study protocol on recently diagnosed patients with Cushing's syndrome, in collaboration with investigators in Leiden and Göteborg (mainly Drs. Alberto Pereira and Oskar Ragnarsson): The etiology and extent of impaired quality of life, fatigue and cognitive, affective and emotional dysfunction in patients with Cushing's syndrome.
- Collaboration with investigators in Bordeaux (mainly Dr. Antoine Tabarin) on cognitive outcome of patients having suffered Cushing's disease: Sequelles cognitives du syndrome de Cushing - MEMOCUSH.
- Clinical and molecular characterization of pituitary adenomas in children and adolescents. We have sent over 100 samples and a first publication is currently being written up. A Santos, SM Webb collaborating with Drs. Itxaso Rica and Luis Castaño from Hospital Universitario Cruces, Instituto de Investigación Sanitaria BioCruces.
- Bilateral collaboration between E. Resmini and Richard Lee of Baltimore University, Departments of Psychiatry & Medicine, the Johns Hopkins University School of Medicine.
- Bilateral collaboration between E. Resmini & Dr Marco Losa, Università Vita e Salute of Milan, Italy, to study effects of different treatments modalities for acromegaly.
- Bilateral collaboration between E. Resmini and the Neuroendocrinology group of Ospedale Papa Giovanni XXI, Bergamo, Italy, to evaluate the effects of a Mindfulness program in patients with acromegaly and patients with Cushing's syndrome.
- Bilateral collaboration between E. Resmini, S. Webb & Dr. Carles Gaston-Massuet to evaluate "Genetic, molecular and clinical characterization of craniopharyngioma". St Bartholomew's Hospital & The London Charity Hospital.
- Bilateral collaboration between E. Valassi & Oskar Ragnarsson, University of Göteborg (Sweden) to investigate the association between polymorphisms of genes involved in the steroidogenesis and the responsiveness to treatment with steroidogenesis inhibitors in Cushing's syndrome.
- Bilateral collaboration between E. Valassi and Adolfo Díaz, Hospital del Mar, to investigate the role of microRNAs in the pathogenesis of bone alterations in patients with Cushing's syndrome and acromegaly.
- Bilateral collaboration between E. Valassi and Chaysavanh Manichanh, Hospital Vall d'Hebron, to investigate the role of microbiome in the pathogenesis of metabolic alterations in patients with Cushing's syndrome.
- Bilateral collaboration between E. Valassi and María Morán (Hospital 12 de octubre, Madrid), Federico Pallardó and José Luis García (U733 CIBERER; Valencia University) to identify early markers of metabolic impairment in patients with Cushing's syndrome and acromegaly.

Active Grants

- Susana Webb Youdale. Centro de Investigación Biomédica en Red de Enfermedades Raras. CIBERER. CB06/07/0044. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 330,667.96 €.
- Susana Webb Youdale. Grup de Recerca de Malalties de la Hipòfisi i Grup CIBERER 747 (CIBER de Malalties Rares). 2017 SGR 00750. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Anna Aulinas Maso. Contratos Juan Rodés 2019. JR19/00013. Instituto de Salud Carlos III. Duration: 2020-2024. 180,000 €.
- Elena Valassi. PostDoctoral CIBERER researcher. Role of myosteatosis in the development and persistence of residual muscular frailty in treated acromegaly and Cushing's syndrome tratados. Study of the mechanisms involved. ISCIII FIS. PI 17/00749. Duration: 2018-2020.
- Agreement signed between HRA Pharma and the European Society of Endocrinology to support the ERCUSYN database over 5 years (2018-2023), which allows an annual support of ESE to IIB-Sant Pau for the sustainability of ERCUSYN.
- Registro observacional, prospectivo e internacional para recopilar información clínica sobre pacientes con síndrome de Cushing endógeno expuestos a ketoconazol (mediante el Registro Europeo de Síndrome de Cushing [European Registry on Cushing's Syndromen Cushing's Syndrome, ERCUSYN] ya existente) para evaluar el patrón de utilización del fármaco y para documentar la seguridad (p. ej., hepatotoxicidad, prolongación del intervalo QT) y la eficacia del ketoconazol.

Clinical trials

- Susana Webb Youdale. Open multicentric protocol of continuation of Pasireotide, for patients that have completed a prior study of pasireotide sponsored by Novartis and when the investigator considers that the patient will benefit from the continuation of treatment with pasireotide. SOM230B2412. It started in 2011and is still going on (it is a continuation of CSOM230G2304 "Phase III study, multicentric, randomized and doble blind, to evaluate the efficacy and safety of pasireotide LAR in patients with Cushing's disease", nr Eudract. 2009-011128-70).
- Susana Webb Youdale. Glucocorticoid Receptor Antagonism in the Treatment of Cushing Syndrome (GRACE): A Phase 3, Double-Blind, Placebo-Controlled, Randomized-Withdrawal Study of the Efficacy and Safety of Relacorilant (CORT125134). IND Number 128625. EudraCT Number 2018-003096-35. Started in 2019.

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

Grants Awarded in 2020

- Anna Aulinas Maso. Identificación y relevancia clínica de un estado deficiente de oxitocina: estudio piloto fisiopatológico aleatorizado, cruzado y controlado con placebo. PI20/01165. Instituto de Salud Carlos III. Duration: 2021-2023. 174,000 €.

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

Awards

- Lucianan Martel. Gender dimorphism in fat infiltration of the skeletal muscle and associated muscular dysfunction in patients with controlled acromegaly. Award for best oral communication in Neuroendocrinology at the SEEN Congress (Sociedad Española de Endocrinología y Nutrición). Virtual, October 2020.

Scientific Production

Total Impact Factor: 46.694 · Mean Impact Factor: 4.669

Aulinas A, Marengi DA, Galbiati F, Asanza E, Slattery M, Mancuso CJ, Wons O, Micali N, Bern E, Eddy KT, Thomas JJ, Misra M, Lawson EA. Medical comorbidities and endocrine dysfunction in low-weight females with avoidant/restrictive food intake disorder compared to anorexia nervosa and healthy controls. INT J EAT DISORD. 2020 Apr;53(4):631-636. doi: 10.1002/eat.23261. **IF: 3.668**

Di Filippo L., Doga M., Resmini E., Giustina A., Hyperprolactinemia and bone (2020) PITUITARY, 23 (3), 314-321. **IF: 3.9540**

Gil J, Marqués-Pamies M, Jordà M, Fajardo-Montañana C, García-Martínez A, Sampedro M, Serra G, Salinas I, Blanco A, Valassi E, Sesmilo G, Carrato C, Cámara R, Lamas C, Casano-Sancho P, V Alvarez C, Bernabéu I, Webb SM, PicóA, Marazuela M, Puig-Domingo M, REMAH investigators. Molecular determinants of enhanced response to somatostatin receptor ligands after debulking in large GH producing adenomas. CLIN ENDOCRINOL (OXF) 2020 Sep 26. doi: 10.1111/cen.14339. PMID: 32978826 DOI: 10.1111/cen.14339 **IF: 3.38**

Martel-Duguech L., Alonso-Jimenez A., Bascunana H., Diaz-Manera J., Llauger J., Nunez-Peralta C., Biagetti B., Montesinos P., Webb S.M., Valassi E., Thigh muscle fat infiltration is associated with impaired physical performance despite remission in Cushing's syndrome (2020) J CLIN ENDOCR METAB, 105 (5). **IF: 5.3990**

Martel-Duguech LM, Jorgensen JOL, Korbonits M, Johannsson G, Webb SM, for the ESE AGHD PanEuropean audit. ESE audit on management of Adult Growth Hormone Deficiency in clinical practice. EUR J ENDOCRINOL 2020 Dec 1;EJE-20-1180.R1. doi: 10.1530/EJE-20-1180. PMID: 33320830 DOI: 10.1530/EJE-20-1180 **IF: 5.308**

Piasecka M; Papakokkinou E; Valassi E; Santos A; Webb SM; Pereira AM; deVries F; Ragnarsson O. Psychiatric and Neurocognitive Consequences of Endogenous Hypercortisolism. REVIEW J INTERN MED. 288-2, pp. 168-182. 29/04/2020. ISSN 1365-2796. DOI: 10.1111/joim.13056 PMID: 32181937. **IF: 6.871**

Puig-Domingo M., Gil J., Sampedro-Nunez M., Jorda M., Webb S.M., Serra G., Pons L., Salinas I., Blanco A., Marques-Pamies M., Valassi E., Pico A., Garcia-Martinez A., Carrato C., Buj R., Del Pozo C., Obiols G., Villabona C., Camara R., Fajardo-Montanana C., Alvarez C.V., Bernabeu I., Marazuela M., Molecular profiling for acromegaly treatment: A validation study (2020) ENDOCR-RELAT CANCER, 27 (6), 375-389. **IF: 4.8000**

Rubinstein G, Osswald A, Hoster E, Losa M, Elenkova A, Zacharieva S, Machado MC, Hanzu FA, Zopp S, Ritzel K, Riester A, Braun LT, Kreitschmann-Andermahr I, Storr HL, Bansal P, Barahona MJ, Cosaro E, Dogansen SC, Johnston PC, Santos de Oliveira R, Raftopoulos C, Scaroni C, Valassi E, van der Werff SJA, Schopohl J, Beuschlein F, Reincke M. Time to Diagnosis in Cushing's Syndrome: A Meta-Analysis Based on 5367 Patients. J CLIN ENDOCRINOL METAB. 2020 Mar 1;105(3):dgz136. doi: 10.1210/clinem/dgz136 **IF: 5.399**

Vila G, Luger A, van der Lely Aart J, Neggers Sebastian JCMM, Webb SM, Biller Beverly MK, Valluri S, Hey-Hadavi J. Hypertension in Acromegaly in Relationship to Biochemical Control and Mortality: Global ACROSTUDY Outcomes. FRONT ENDOCRINOL (Lausanne) 2020 Nov 30;11:577173. doi: 10.3389/fendo.2020.577173. PMID: 33329385 **IF: 3.644**

Webb SM; Santos A; Aulinas A; Resmini E; Martel L; Martínez Momblán MA; Valassi E. Patient-centred Outcomes With Pituitary and Parasellar Disease. NEUROENDOCRINOLOGY. 110 - 9-10, pp. 882 - 888. Karger, 27/02/2020. ISSN 1423-0194. DOI: 10.1159/000506809 PMID: 32101858. **IF: 4.271**

Books or Chapters with ISBN

- Alicia Santos Vives, Raquel Ciriza Rapún. Esfera psicosocial del paciente con acromegalia. In: ACROGUÍA: Guía práctica en acromegalia. 2020. ISBN: 978-84-7877-970-3.
- Flavia Prodram, Eugenia Resmini, Francesco Tecilazich, Andrea Giustina. Sindromi plurighiandolari, Chapter 74. In: Rugarli (editor): Manuale di Medicina Interna Sistematica 8 edizione. ISBN 9788821450952

Diffusion Activities

Difussion and Divulgation to Society

- S. Webb. Member of the Endo-ERN Steering Committee, responsible for the Work package "Quality of care and patient view". Annual Virtual Meeting, March 2020.
- A. Santos & E. Resmini. Dealing with psychological issues in the COVID era. WAPO (World Alliance of Pituitary Organizations). eSummit. Virtual, 3 October 2020.
- A. Santos. Aspectos psicológicos en el manejo de la acromegalia, orientaciones para endocrinólogos (3 talks for endocrinologists).
- E. Valassi. ACTH-dependent Cushing's syndrome. On-line course "Multidisciplinary formation in Cushing's syndrome". Spanish Society of Endocrinology and Nutrition.
- E. Valassi. Jornada amb motiu del Dia Mundial de les Malalties Minoritàries a Catalunya: 29 February 2020.
- E. Valassi. Specific infromation on COVID-19 for patients with Cushing's syndrome. Cushing's Support and Research Foundation website.

Scientific Diffusion

- S. Webb. Invited speaker. 'Pituitary Adenomas in Pregnancy': Cushing's disease. ESE Clinical Guideline symposium. 22nd European Congress of Endocrinology (ECE). Virtual, 5-9 September 2020.
- E. Valassi. Invited speaker. Is there a role for combination therapy in Cushing's syndrome? 22nd European Congress of Endocrinology (ECE). Virtual, 5-9 September 2020.
- E. Valassi. Invited speaker. Unmet needs and quality of life in Cushing's syndrome? 22nd European Congress of Endocrinology (ECE). Virtual, 5-9 September 2020.
- S. Webb. Invited speaker. Symposium on Update and challenges in the treatment of Cushing's syndrome: New inhibitors of steroidogenesis. Osilodrostat. LCI. 61st Congress of the Sociedad Española de Endocrinología y Nutrición. Virtual, 14-16 October 2020.
- E. Valassi. Invited speaker. Update on treatment with metyrapone in patients with Cushing's syndrome. 61st Congress of the Sociedad Española de Endocrinología y Nutrición. Virtual, 14-16 October 2020.

- S. Webb. Invited speaker. Workshop 5 - Medical Therapy: Adrenal Steroidogenesis Inhibitors (Metyrapone, Ketoconazole, Mitotane, Osilodrostat, Levoketoconazole, Etomidate): Clinical effects. Pituitary Society Workshop on Cushing's syndrome. Virtual, 25-26 October 2020.
- E. Valassi. Invited speaker. Workshop 7- Role of preoperative medical therapy. Pituitary Society Workshop on Cushing's syndrome, 25-26th October 2020.
- S. Webb. Invited speaker. Opening congress lecture: Morbilidad residual tras "curación" hormonal en patología hipofisaria. Congress of the Asociación Colombiana de Endocrinología, Diabetes y Metabolismo. Virtual, 19-22 November 2020.
- S. Webb. Invited speaker. Retos terapéuticos en enfermedad de Cushing. Congress of the Asociación Colombiana de Endocrinología, Diabetes y Metabolismo. Virtual, 19-22 November 2020.
- E. Valassi. Invited speaker. The European Registry on Cushing's syndrome: what do we know about the time to diagnosis, treatment modalities and mortality in Cushing Disease. The teaching course on pituitary diseases. Krakow University (Poland), 4 December 2020.
- A. Aulinas. Invited speaker. Oxitocina: pasado, presente y futuro. XII Reunión del Área de Conocimiento de Neuroendocrinología. Sociedad Española de Endocrinología y Nutrición. 30-31 January 2020.
- A. Aulinas. Invited speaker. Oxitocina: present i futur. XXVI Curs de patologia endocrina mèdico-quirúrgica. Hospital Vall d'Hebron. October 2020.
- A. Santos, M. A. Martínez-Momblán, E. Domínguez-Clavé, A. Aulinas, S. Webb, E. Resmini. Efectes de la teràpia de Mindfulness en pacients amb acromegàlia, estudi pilot. Oral communication. XXIII Congress of Societat Catalana d'Endocrinologia i Nutrició. Virtual, 12-13 November 2020.
- S. Webb. Invited speaker. Up-to-date en el dèficit d'hormona de creixement: Déficit de GH en adults. XXIII Congress of Societat Catalana d'Endocrinologia i Nutrició. Virtual, 12-13 November 2020.

Other

- S. Webb is a Member of the International Guideline working group set up by the European Society of Endocrinology (ESE), European Society of Pediatric Endocrinology (ESPE) and European Reference Network (EndoERN) on Pituitary disease & pregnancy, since 2019. An update was presented at a symposium within the European Congress of Endocrinology, virtual in September 2020, and the final publication will be published in 2021.
- E. Valassi has been designated in 2020 as part of the EndoERN working group for "Optimizing outcome of pregnancy in patients with Rare Endocrine Diseases".
- S. Webb was the Chair of the Program Organizing Committee to elaborate the scientific program of the International Congress of Endocrinology which was to be held in October 2020 in Buenos Aires, Argentina. Virtual, February 2021.
- S. Webb was asked by the European Medicines Agency (EMA) to chair the ad hoc expert group meeting on Sogroya (somapacitan) (minutes Doc. Ref: EMA/582389/2020), which took place in October 2020, prior to authorizing this new drug for its use in Europe as a weekly growth hormone drug.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Digestive Diseases

Coordinator
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Members
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Cuyas Espí, Berta (FGS)
Gallego Moya, Adolfo (FGS)
García Gil, Judit (IR)
García Guix, Marta (FGS)
García Planella, Esther (FGS)
Gómez Oliva, Cristina (FGS)
González Juan, Dolores (FGS)
Gordillo Ábalos, Jorge (FGS)
Guarner Argente, Carlos (FGS)
Murzi Pulgar, Marianette C. (FGS)
Oblitas Susanibar, Elida (FGS)
Poca Sans, Maria (FGS)
Roman Abal, Eva Maria (FGS)
Sainz Saenz-Torre, Sergio (FGS)
Sánchez Ardid, Elisabet (CIBEREHD)
Soriano Pastor, Germán (FGS)
Torras Colell, Javier (FGS)
Villanueva Sánchez, Càndid (FGS)

Main Lines of Research

Experimental research

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

Clinical investigation

- Physiopathology, diagnosis, treatment, and prevention of bacterial infections, ascites and hepatorenal syndrome in cirrhosis.
- Diagnosis and treatment of hepatic encephalopathy in cirrhosis.
- Cognitive impairment, falls, and quality of life in patients with cirrhosis.
- Physiopathology, diagnosis, treatment and prevention of digestive haemorrhage due to non-varicose origin.
- Physiopathology, diagnosis, treatment and prevention of portal hypertension-related complications.
- Diagnosis and treatment of chronic hepatitis B and C.
- Diagnosis, prevention, and treatment of non-alcoholic fatty liver disease.
- Diagnosis and treatment of hepatocarcinoma.
- Physiopathology, diagnosis and treatment of intestinal inflammatory disease (inflammatory bowel disease).
- Diagnosis and treatment in advanced gastrointestinal endoscopy.
- Diagnosis and treatment of acute pancreatitis.
- Prevention of acute post-ERCP pancreatitis.
- Chronic pancreatitis and pancreatic neoplasms: molecular studies, early detection and treatment.
- Evaluation acute alcohol hepatitis.

Scientific Challenges

- Consolidate the CIBEREHD, CIBER, Instituto de Salud Carlos III research group by studying complications in cirrhosis.
- UAB (Autonomous University of Barcelona) Research Group: Group for Research into Complications of Hepatic Cirrhosis.
- Generalitat Consolidated Research Group (SGR)
- Expand the hepatology research lab and develop new research.
- Consolidate the portal hypertension research group.
- Consolidate the non-alcoholic fatty liver disease research group.
- Consolidate the pancreatic illness research line.
- Consolidate the inflammatory bowel disease research line.
- Consolidate the polyps and colon cancer research line.
- Develop a digestive endoscopy research line.
- Consolidate the endoscopy unit as a CSUR (national reference centre of excellence) in peroral endoscopic myotomy in Spain.
- CIBERehd-evs Group.

Collaborations

Collaborations with other IIB Sant Pau Groups

Research scientific support areas and technical services

- Clinical Trials Documentation
- Research Institute Management
- Research Institute Projects Unit
- Quality and Information Systems Unit
- Animal Experimentation Services
- Transfer and Innovation Unit
- Biobank

Research areas

- Genetic, Metabolic and Inflammatory Diseases:
  - Dr. Cándido Juárez (Infamatory Diseases)
  - Dr. Pere Coll/Ferran Navarro (Microbiology and Infectious Diseases)
  - Dra. Pia Gallano and Dr. Jordi Surrallés (Genetic research)
  - Dr. Dídac Mauricio (Endocrinology, Diabetes and Nutrition)
- Neurological, Mental Disorders and Ageing:
  - Dra. Beatriz Gómez Ansón (Neuradiology)
- Molecural, Genomic, Cellular and Kinetic-Dynamic bases for Diseases and their Treatment:
  - Dr. Juan García (Banc de Sang i Teixits, Generation of advanced therapy medicines)
- Associated Groups:
  - Dr. Luís Puig (Dermatology)
- Fundació de Gestió Sanitària Hospital de la Santa Creu i Sant Pau:
  - Dra. Bascuñana (Physical Medicine and Rehabilitation)

External Collaborations

National Collaborations

- CIBER Groups: CIBEREHD: Dr. Albillos. Dr. Frances, Dr. Bosch, Dr. Bruix, Dr. Cabré, Dr. Forns, Dr. Genesca, Dr. Andrade, Dr. Romero Gómez, Dr. Bañares, Dr. García-Pagán, Dra. Hernández-Gea (among others); CIBERSAM: Dr. Gish; CIBERER: Dr. Pia Gallano.
- Instituto de Productos Lácteos (IPLA) Asturias.
- Danone Nutricia Research Barcelona Spain.
- Gastrointestinal Oncology Group of the Spanish Gastroenterological Association.
- Spanish Collaborative Group for the Study of the Use of Hepatitis C Direct-Acting Drugs.
- Spanish DILI registry.
- SportDiet Collaborative Group.
- BLEPS Study Group. Spanish Collaborative Group for the Study of the Use of Hepatitis C Direct-Acting Drugs.
- Variceal Bleeding Study Group.
- Spanish Working Group on Crohn's Disease and Ulcerative Colitis (GETECCU).
- ENEIDA project.
- Spanish Microscopic Colitis Group (SMCG).
- EndoCAR group of the Spanish Gastroenterological Association and Spanish Digestive Endoscopy Society.
- AEGastrum
- Infogastrum
- Upper GI Tract Study Group from the Spanish Gastroenterology
- Grupo Español de Resección Endoscópica de la Sociedad Española de Endoscopia Digestiva. Clinical guidelines for endoscopic mucosal resection of non-pedunculated colorectal lesions
- Asociación Española de Gastroenterología
- Sociedad Española de Endoscopia Digestiva
- Societat Catalana de Pàncrees
- Societat Catalana de Digestologia
- Registro ColHai
- Programa Pacient Expert Catalunya
- Quecomiicat
- InTeam Consortium Study Investigators
- Cohorte HEPA-C
- Estudio EPIBarrett
- PREDESCI Study Group
- Grp Invest PROCOLON

International Collaborations

- Cleveland Abu Dhabi.
- University of Bologna, Italy.
- EF Clif European Foundation for the Study of Chronic Liver Failure.
- CANONIC study investigators of the EASL-CLIF Consortium and the European Foundation for the Study of Chronic Liver Failure (EF-CLIF).
- Danone Nutricia Research.
- EPICOLON Consortium, Lynch Syndrome Prediction Model Validation Study Group.
- BLEPS Study Group.
- Variceal Bleeding Study Group.
- European Study Group on Cystic Tumors of the Pancreas.
- Gilead.
- Shionogui Group.
- Actial.
- Mendes.
- Quintiles.
- Tobira.
- Boehringer Ingelheim.
- American Society for Gastrointestinal Endoscopy.

Active Grants

- Càndid Villanueva Sánchez. Evolución de la circulación colateral portosistémica y la hiperdinamia asociadas a hipertensión portal con el tratamiento etiológico de la cirrosis. Influencia en el desarrollo de complicaciones. PI16/01992. Instituto de Salud Carlos III. Duration: 2017-2021. 101,500 €.
- Carlos Guarner Aguilar. Grup de Recerca: Complicacions de la Cirrosi Hepàtica. 2017 SGR 00956. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.

- Germán Soriano Pastor. Fragilidad en pacientes con cirrosis: valor pronóstico del ángulo de fase en pacientes hospitalizados y efecto de una intervención multifactorial (ejercicio en domicilio, aminoácidos ramificados y probiótico). PI19/00275. Instituto de Salud Carlos III. Duration: 2020-2022. 117,000 €.
- Eva Maria Roman Abal. Intervención multifactorial basada en ejercicio físico a domicilio, aminoácidos ramificados y prebióticos multiespecies en el tratamiento de la fragilidad en pacientes con cirrosis. PI_011CNDE2018. Conferencia Nacional de Decanos de Enfermería. Duration: 2018-2021. 3,000 €.
- Carlos Guarner Aguilar. Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas. CIBEREHD. CB06/04/0030. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 505,509.45 €.
- Eva Roman. Papel de la deficiencia de la vitamina D en los eventos clave de la cirrosis hepática e impacto de su suplementación. Beca Fondo de Investigación Sanitaria (Instituto de Salud Carlos III) PI16/00920.

Clinical Trials

- EHD15PE94B_B/2016-Estudios inmunológicos. Proyecto Hepatitis C: Impacto del tratamiento con nuevos antivirales.
- Caracterización evolutiva de la cirrosis por VHC y del síndrome de hipertensión portal asociado, tras la erradicación del VHC con tratamiento antiviral sin interferón. IIBSP-VHC-2015-20.
- Eficacia y seguridad de los antivirales de acción directa (AAD) en pacientes con cirrosis hepática por el VHC genotipo 1 y signos endoscópicos de hipertensión portal.
- Evidencia en Vida Real de la efectividad de Paritaprevir/r/Ombitasvir ± Dasabuvir (REGIMEN ABBVIE) ± Ribavirina en pacientes con Hepatitis C Crónica - Estudio Observacional Retrospectivo en España. Código: ABB-OMB-2016-01 Promotor: AbbVie Spain, S.L.U.
- A Multicenter, Double-Blind, Randomized, Placebo-Controlled, Phase 2 Study to Evaluate the Efficacy and Safety of Elafibranor at Doses of 80 mg and 120 mg after 12 Weeks of Treatment in Patients With Primary Biliary Cholangitis (PBC) and Inadequate Response to Ursodeoxycholic Acid.

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

Grants Awarded in 2020

- Edilmar Auxiliadora Alvarado Tapias. Contratos Juan Rodés 2020. JR20/00047. Instituto de Salud Carlos III. Duration: 2021-2024. 180,000 €.
- German Soriano Pastor. Convenio para asistir al EASL y al AASLD. G20-2099, W. L. Gore and Associates. Duration: 2020-2020. 9,000 €.
- Eva Maria Roman Abal. Fragilidad en pacientes con cirrosis: efecto de una intervención multifactorial (ejercicio domicilio, aminoácidos ramificados y probióticos). PR-415/2020. Fundació Infermeria i Societat. Duration: 2021-2023. 4,800 €.

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

Scientific Production

Total Impact Factor: 350.337 · Mean Impact Factor: 8.983

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Other Publications

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Diffusion Activities

Positioning Documents

- Arajol C, Aira Gómez A, González-Suárez B, Casals-Pascual C, Martí Martí S, Domínguez Luzón MA, Soriano A, Guardiola J, et al. Selecció del donant per a la transferència de microbiota fecal.
- Molero X, Ayuso JR, Balsells J, Boadas J, Busquets J, Casteràs A, Concepción M, Cuatrecasas M, Fernàndez Esparrach G, Garcia Borobia F, Ginès A, Fort E, Ilzarbe L, Loras C, Masachs M. Epidemiologia, etiologia, diagnòstic i tractament de la pancreatitis crònica.

Presentations at Conferences

- Esther García Planella. Xeljan z, primer Inhibidor JAK: su manejo en práctica clínica en Colitis Ulcerosa. Aportacion de los inhibidores JAK al algoritmo terapéutico en Colitis Ulcerosa. XXIX Congrés de la Societat Catalana de Digestologia. Lleida, 30 January-1 February 2020.
- Adolfo Gallego. Simposi INTERCEPT: Maneig pràctic dels Pacients amb Colangitis Biliar Primària. Com està sent l'experiència en pràctica clínica real amb l'Àcid Obeticòlic? Cas clínic 1. XXIX Congrés de la Societat Catalana de Digestologia. Lleida, 30 January-1 February 2020.
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Oral Communications

- Reig Garcia A; Álvarez-Navascués C; Vergara M; Gómez-Domínguez E; Gallego A; Pérez-Medrano I; Fábrega E; Hernández-Guerra M; Berenguer M; Estévez P; Arencibia A; Morillas RM; Horta D; Albillos A; Casado M; De-la-Cruz G; Fernández E; Molina E; Hijona L, et al. Tractament de segona línia amb àcid obeticòlic o fibrats en la colangitis biliar primària. Resultats als 12 mesos. XXIX Congrés de la Societat Catalana de Digestologia. Lleida, 30 January-1 February 2020.
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AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Microbiology and Infectious Diseases

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Main Lines of Research

Clinical Microbiology

- Detection and characterisation of different antimicrobial mechanisms of resistance.
- Tuberculosis, epidemiology, and anti-tuberculosis resistance mechanisms.
- Molecular biology applications in infectious disease detection, taxonomy and epidemiology.
- Microbiome description in different clinical samples.
- Leishmaniasis: epidemiology, characterisation and diagnosis.
- Chagas diseases: epidemiology, diagnosis, and study of congenital infection.
- Medical care projects.

Kidney Transplant

- Biomarkers for BKV in urine samples.
- T CD8+ immunity from CMV in renal transplant patients treated with Thymoglobulin.
- Renal transplant programme for hepatitis C virus-positive donors.
- Hepatitis E virus-positivity in haemodialysis and renal transplant patients.

Infectious Diseases

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

Scientific Challenges

Clinical Microbiology

- Detection and characterisation of different antimicrobial mechanisms of resistance. Description of the molecular bases of bacterial resistance to the main antibiotics used in clinical practice, as well as the vectors associated with gene expansion (plasmids, transposons, integrons or phages).
- Tuberculosis, epidemiology, and antituberculosis resistance mechanisms. Prospective monitoring of primary and acquired resistance of Mycobacterium tuberculosis to first- and second-line drugs. Molecular detection of resistance using a molecular antibiogram. Study of the epidemiology and spread of resistant strains and assessment of the impact of immigration and the contribution of new Mycobacterium tuberculosis families (Beijing, EAI, CAS).
- Molecular biology applications in infectious disease detection, taxonomy, and epidemiology. Study of the usefulness of the 16S RNA gene for microbiological diagnosis and molecular identification. Description of nosocomial outbreaks applying to antimicrobial multi-resistant bacteria, mycobacteria, fungi, or viruses. Government health department agreement (ongoing) regarding the development of epidemiological surveillance support functions for nosocomial infections Use of next-generation sequencing as a tool for whole genome analysis. Genotype characterization of Cryptosporidium spp. oocysts from stool samples. Characterisation of Leishmania species. Genotyping of different viruses such as hepatitis C virus, enterovirus and adenovirus.
- Microbiome description in different clinical samples. Role of the vaginal and intestinal microbiome in recurrent urinary tract infections.
- Detection and characterization of Leishmania from clinical samples.
- Diagnosis of Chagas. Monitoring of congenital infection in pregnant women with Chagas disease.
- Medical care projects. Government health department agreement (ongoing) regarding flaccid paralysis. Study of mycoses in depth, especially invasive fusariosis and aspergillosis and viral respiratory tract infections in patients with onco-haematological diseases. Multicentre studies of HIV (ongoing). Research related to bacteraemia and endocarditis, nosocomial infections, prosthetic joint infections, central nervous system infections, and tuberculosis.

Infectious Diseases

- Restricted-use policies for antibiotic and antimicrobial agents and suitable use of antimicrobial agents. To minimize resistance, reduce cost and improve compliance with surgical prophylaxis (at the time of administration) through suitable use of antimicrobial agents.
- Study of infections due to antimicrobial multi-resistant microorganisms requiring patient isolation. To study the epidemiology for our hospital. To reduce incidence. To prevent/contain epidemic outbreaks and work with the Microbiology Unit on epidemiology and molecular studies.
- Study of infections associated with foreign bodies (joint prostheses, catheters, cardiac prostheses and pacemakers). To reduce incidence. To develop effective conservative treatment regimes. Infections in Transplant Patients (Heart, Haemopoietic Progenitors). To study current epidemiology. To assess the efficacy of prophylaxis and other preventive measures.
- Tuberculosis. To cooperate with resistance studies and with new treatment regimens for tuberculosis.
- Chagas diseases. Collaboration on the development of a protocol for congenital infection in pregnant women with Chagas diseases.

Other Projects

- To continue with the government health department agreement regarding the development of support functions as follows:
- Epidemiological surveillance of nosocomial infections (VINCat).
- Tuberculosis control: Barcelona-Dreta Tuberculosis Operations Committee (coordinator: Dr Sambeat).
- New influenza control: Barcelona-Dreta Epidemiological Surveillance Operations Committee (coordinator: Dr López-Contreras).
- Database for monitoring CMV infections after renal transplantation.
- Database for monitoring BK virus infections after renal transplantation.
- Observational and multicentre case-controlled (1:2) study to compare the evolution of renal transplantation in patients with HIV infection (Dr Canal, Dr Facundo and Dr Serra), sponsored by the Andalusian Organ and Tissue Transplantation Society.
- A phase 3, multicentre, randomized, open-label, active-controlled study to assess the efficacy and safety of maribavir treatment compared to investigator-assigned treatment in transplant recipients with cytomegalovirus (CMV) infections that are refractory or resistant to treatment with ganciclovir, valganciclovir, foscarnet, or cidofovir, sponsored by Shire.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Kidney Transplant of Puigvert Foundation. Guirado Perich, Lluís; Facundo Molas, Carme; Serra Cabañas, Nuria; Canal Girol, Cristina; Vila Santandreu, Anna; Gelpi Remiro, Rosana; Bardají de Quixano, Beatriz; Silva Torres, Irene:
  - Biomarkers for BKV in urine sample: Determination of a diagnostic and prognostic biomarker in urine by proteomics of nephropathy by BK virus in renal transplant receptors, sponsored by the Infectious Diseases Department, Vall d'Hebron University Hospital, Barcelona, Spain.
  - Study of the kinetic of the immunity T CD8+ from CMV in renal transplants in treatment with Thymoglobulin. Financed by Grants from the Foundation, Project and Health of Andalusia.
  - Suspension of the prophylaxis treatment with valganciclovir in renal transplants CMVseropositive that maintain the immunity T CD8+ CMV-specific after treatment with Thymoglobulin.Financed by ISCIII Grant FIS (PI15/00402).
  - Prevalence and incidence of hepatitis E virus infection in haemodialysis and renal transplant patients
  - Renal transplant program of hepatitis C virus positive donors.

External Collaborations

Clinical Microbiology

- Secció de Parasitologia, Dep. de Biologia, Sanitat i Medi Ambient, Facultat de Farmàcia. Universitat de Barcelona. Montserrat Gállego Culleré. Chagas and leishmaniasis
- Laboratorio de Biología molecular de la enfermedad de Chagas (LabMECh). Instituto de Investigaciones en Ingeniería Genética y Biología Molecular (INGEBI-CONICET). Buenos Aires, Argentina. Alejandro Gabriel Schijman. Chagas
- Université Aix-Marseille, INSERM-IRD-AMU UMR 912, Marseille, France. Renaud Piarroux. Leishmaniasis. Characterization
- Département de Parasitologie-Mycologie, Centre National de Référence des Leishmanioses, Centre Hospitalier Universitaire de Montpellier, France. Patrick Bastien, Laurence Lachaud. Leishmaniasis. Characterization
- Departamento de Parasitología. Universidad Complutense de Madrid (UCM). Francisco Bolás Fernández. Leishmaniasis
- Universidade de São Paulo (USP). Brasil. Marcia Dalastra Laurenti. Tegumentary leishmaniasis
- Parasitology laboratory, Medicin Faculty. Universidad Mayor de San Simón and Laboratorio de Investigación-Fundación CEADES de Cochabamba, Bolivia. Mary Cruz Torrico de Solano. Leishmaniasis in Bolivia.
- Great Ormond Street Hospital (Camelia Botnar Laboratories). Londres, UK. Dr. Kathryn Harris. Epidemiology of Mycobacterium abscessus complex using whole genome sequencing. Interhuman transmission?
- Instituto Superiore di Sanità. Department of Infectiuos Diseases. Rome, Italy. Dra. Aurora García Fernández. Epidemiology of enteropathogenic bacteria
- Sapienza University of Rome, Italy. Dra Alessandra Carattoli. Characterization of plasmids
- Departament de Genètica, Microbiologia i Estadística, Universitat de Barcelona. Maite Muniesa. Presence of phages in clinical samples
- Departament de Genètica, Microbiologia i Estadística, Universitat de Barcelona. Carlos Balsalobre and Cristina Madrid. Campilobacteriosis
- University Medical Center (UMCG) Groningen, The Nederlands. Alex Friederik and Silvia Garcia-Cobos. Whole genome sequence in carbapenemase-producing Enterobacteriaceae
- Sequentia Biotech. Tomas Grassi. Microbiome in recurrent urinary tract infection

Active Grants

- María Natividad de Benito Hernández. Optimización de la profilaxis quirúrgica antimicrobiana en los pacientes a los que se implanta una prótesis articular electiva en España. PI15/01026. Instituto de Salud Carlos III. Duration: 2016-2020. 59,000 €.
- Pedro Coll Figa. Grup de Recerca en Patologia Infecciosa i Microbiologia Clínica. 2017 SGR 01096. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Joaquin López-Contreras González. Neutrophil Extracellular Traps in Sepsis: Discovering prognostic and diagnosis markers and therapy targets. MARATO 20182310. Fundació La Marató de TV3. Duration: 2019-2022. 125,500 €.
- Ferran Navarro Risueño. Papel del microbioma intestinal y genital en las infecciones urinarias recurrentes. PI19/00427. Instituto de Salud Carlos III. Duration: 2020-2022. 67,000 €.
- C. Facundo. Study of the kinetic of the immunity T CD8+ from CMV in renal transplants in treatment with Thymoglobulin. Grants from the Foundation, Project and Health of Andalusia. 3 years. 34,000 €.
- O. Sibila. Proyecto PRINCE; Predictores Inmunológicos de Infección Bronquial en Enfermedades Respiratorias Crónicas. PI18/00311. Duration: 2019-2021. 43,560 €.
- Luis Antonio Prats Sánchez. Papel del Microbioma intestinal en la evolución neurológica de pacientes con hemorragia intracerebral espontánea. ISCIII Grant Fis. Duration: 2020-2023.

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

Scientific Production

Total Impact Factor: 211.679 · Mean Impact Factor: 5.5705

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Other Publications

- Abras A, Ballart C, Fernández-Arévalo A, Muñoz C and Gállego M. Chapter 4. Trypanosoma cruzi Infection Diagnosis: New Insights, Challenges and Perspectives. Trends in Pharmaceutical and Food Sciences I. Pharm Res 2020, 000eB-001.OPEN ACCESS JOURNAL OF PHARMACEUTICAL RESEARCH, 2020, 32-48.

Diffusion Activities

Courses or Seminars

- Ferran Navarro. Coordinator. Actualitzacions en el diagnòstic i l'epidemiologia de les malalties infeccioses. Centre de Recerca en Patologia Infecciosa i Microbiologia Clínica (CRePIMC), Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau.

Congress Sessions or Posters

- Del Cuerpo M., Marín P., Esteban M…, Rabella N. Infección respiratoria por enterovirus: 25 años de experiencia. XXIV Congreso de la Sociedad de Enfermedades Infecciosas y Microbiología Clínica. 2020. Virtual. Abstract 986.
- Miró E, Del Cuerpo M, Berengua C, Marin P, Vela JI, Pomar V3, Rabella N. Adenovirus-associated epidemic keratoconjunctivitis outbreak in a tertiary hospital. 30th ECCMID 2020. Virtual. Abstract: 4233.
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- Horcajada J., Salavert M., De La Torre Cisneros J., Gracia-Ahufinger I., Paño Pardo J., Vilchez Rueda H., Benito N., Rivera A., Sousa Regueiro D., Estrada Perez V., Ibarguren Pinilla M., Manissero D., Longshaw C., Tone K., Lopes S. A retrospective study to evaluate the epidemiology, standard of care, outcomes and resource utilisation in patients with confirmed or suspected infection by a carbapenem-resistant Gram-negative organism in Spain: the CARBAR study part 1, epidemiology of Gramnegative organisms. 30th ECCMID Virtual. Abstract: 4912.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Multi-organ Damage

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Main Lines of Research

Bone Metabolism and Osteoporosis

- Analysis of genetic influence on osteoporosis by means of aggregation studies in families of three or more generations with a minimum of 15 members.
- Bone structure study with quantitative CT of hip and spine, analysing the contribution of trabecular and cortical components using HRCT.
- Description of fat values and percentages in a normal population (in collaboration with the HIV Unit and CETIR Medical Group).
- Description of bone structure in patients with a history of acromegaly assessed by DXA and HRQCT.

HyperTension and Vascular risk

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

Clinical Management, internal Medicine and Geriatrics

- Healthcare quality indexes (mortality, readmissions, etc).
- Perioperative medicine, including orthogeriatrics.
- Geriatric evaluation prior to cardiac and vascular invasive procedures.
- Central sensitivity syndromes.

Rheumatology and Rheumatoid Arthritis

- Immunological basis and pathogenic studies of rheumatoid arthritis and other inflammatory conditions.
- Pharmacogenetic studies of disease-modifying and immunomodulatory drugs in autoimmune and inflammatory diseases.
- JAK-STAT pathway in autoimmune processes, mainly focusing on rheumatoid arthritis.

Systemic Sclerosis

- Capillaroscopy patterns and correlation with auto-antibodies and pulmonary function tests.
- Study of capillaroscopy patterns in diffuse connective tissue diseases: QuantiCAP study.

Gout

- Epidemiology of hyperuricaemia and gout.
- Association of Parkinson, clinical gout and arthritis.

Sjögren's Syndrome, SLE and others

- Study of the pattern of interstitial lung disease in primary Sjögren's syndrome.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

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

- Collaboration with the PEBEL study with the Oncology Service (Dra. Barceló, Dr Mascaró, la Dra Desiree Moras).
- Grupo de investigación de imagen compuesto por CETIR, GALGO Medical y Unidad de Metabolismo Mineral de IIB Sant Pau. Desarrollo de un software para la medicación de parámetros estructurales de la cadera en 3D a partir una imagen 2D de DXA.
- Grupo de investigación de imagen compuesto por CETIR y Unidad de Metabolismo Mineral de Sant Pau. Desarrollo de un fantoma (testigo) para la futura calibración del software anteriormente descrito.
- Grupo de investigación de imagen compuesto por CETIR y Unidad de Metabolismo Mineral de Sant Pau. Calibración cruzada (Desarrollar las ecuaciones necesarias que nos permitan relacionar los parámetros obtenidos en las densitometrías, para así poder comparar los resultados, independientemente de con que densitómetro se haya obtenido la imagen anteriormente).
- Colaboración con el Grupo de investigación en enfermedad endocrinológicas. Unidad de Enfermedades Hipofisarias. HSP. Papel de la mioestatosis en el desarrollo y la persistencia de la debilidad muscular residual en acromegalia y síndrome de Cushing tratados. Estudio de los mecanismos involucrados.

External Collaborations

- Dr. Luis del Rio. Standardized measures of different tissues using dual-energy X-ray absorptiometry, CETIR Medical Group, Barcelona, Spain.
- Internal Medicine Pneumonia Study (ENEMI), coordinated by the Hospital General Universitario Gregorio Marañón, Madrid, Spain.
- Hospital Vall d'Hebron. FIS 2018 (Expediente Nº PI17/00019). Biomarcadores de actividad en la artritis reumatoide. Estudio transversal y prospectivo basado en la immunosecuenciación de anticuerpos y receptores TCR. Co-investigator: Héctor Corominas

Active Grants

- Olga Herminia Torres Bonafonte. Identificación de un inmunofenotipo de riesgo de mal pronóstico en ancianos que han sido ingresados por neumonía. PI18/00684. Instituto de Salud Carlos III. Duration: 2019-2021. 66,000 €.
- Alejandro de la Sierra Iserte. Valor predictivo de la hemodinàmica central de 24 horas en pacientes de edad avanzada hospitalizados por descompensación de patologia crònica. Estudi multicèntric en fase de reclutament. Instituto de Salud Carlos III. Hospital Mutua de Terrassa. EC/18/308/5374 (PS). CEIC (collaborator: David Filella)
- Registro Nacional de Insuficiencia Cardíaca (RICA) de la Sociedad Española de Medicina Interna. Promotor FESEMI. EC/17/267/4993 (OBS) Aprovat CEIC
- Marisha Burden, David Filella (co-investigator), Jordi Casademont (IP Sant Pau). Opioid Prescribing Practices and Satisfaction with Pain Management in Patients Hospitalized on Medical Wards: an international survey. MD. COMIRB nº: 13-1809. CEIC
- Jorge Malouf. A Phase 3 Randomized, double-blind, multi-dose, placebo-controlled study to evaluate the long-term Safety and the efficacy of fasinumab in patients with Pain due to Osteoarthritis of the Knee or Hip. IP: R475-PN-1523.
- Jorge Malouf. A randomized, double-blind, multicenter integrated phase I/III study in postmenopausal women with osteoporosis to compare the pharmacokinetics, pharmacodynamics, efficacy, safety and immunogenicity of GP2411 (proposed biosimilar denosumab) and Prolia® (EU-authorized), PXL#241965. Hexal AG/Sandoz Inc., CGP24112301.
- Antoni Bayés, Jordi Mascaró (collaborator). Advanced Characterization of Cognitive Impairment in Elderly with InterAuricular Block (CAMBIAD study).
- Margarita Majem, Jordi Mascaró (collaborator) and Montserrat Barceló (collaborator). Survival, quality of Life and self Reportde Outcomes of Elderly Patients with Advanced Non-Small Cell Lung Cancer (NSCLC), treated with Pembrolizumab (MK-3475) in the firts line setting. (Estudi PEBEL GECP 16/06).
- Note: Total amount granted to PI. It does not include indirect costs.

Grants Awarded in 2020

- Ivan Castellví Barranco, Use of Krebs von den Lungen (KL-6) biomarker for risk stratification of severe interstitial lung disease in patients with primary COVID- 19 infection. SLD018/20/00001. Departament de Salut. Duration: 2020-2020. 86,714 €.
- Note: Total amount granted to PI. It does not include indirect costs.

Scientific Production

Total Impact Factor: 88.4530 · Mean Impact Factor: 3.0501

Aguilar del Rey J., Jodar Gimeno E., Branas Baztan F., Gomez Alonso C., Gonzalez Lama Y., Malouf Sierra J., Borrego R.S., Segura de la Morena J., Suarez Perez J.A., Valdes y Llorca C., Is vitamin-D supplementation not useful in patients at risk of fractures and falls? (2020) GYNECOL ENDOCRINOL, 36 (2), 93-95. **IF: 1.5710**

Antón-Vázquez V, Farré EG, Cortes C, Hausmann JS, Corominas H. Adult-Onset Autoinflammatory Syndromes. J CLIN RHEUMATOL. 2020 Jun;26(4):160-163. doi: 10.1097/RHU.0000000000000956. **IF: 2.360**

Atienza-Mateo B., Martin-Varillas J.L., Grana J., Espinosa G., Moriano C., Perez-Sandoval T., Garcia-Armario M.D., Castellvi I., Roman-Ivorra J.A., Olive A., Ybanez A., Martinez-Ferrer A., Narvaez J., Romero-Yuste S., Ojeda S., Ros I., Loricera J., Calvo-Rio V., Castaneda S., Gonzalez-Gay M.A., Blanco R., Apremilast in refractory orogenital ulcers and other manifestations of Behçet's disease. A national multicentre study of 51 cases in clinical practice (2020) CLIN EXP RHEUMATOL, 38 (5), 69-75. **IF: 3.3190**

Azuaga A.B., Frade-Sosa B., Laiz A., Estrada P., Prior-Espanol A., Horcada L., Polino L., Moreno M., Moragues C., Urruticoechea-Arana A., Sellas A., Tandaipan J.L., Torrente-Segarra V., Garcia-Miguel J., Ros I., Ordonez S., Moya P., Reina D., Mateo-Soria L., Fito C., Beltran E., Pujol M., Cuervo A.M., Canete J.D., Ramirez J., Effectiveness of ustekinumab in patients with psoriatic arthritis in a real-world, multicenter study (2020) CLIN RHEUMATOL, 39 (10), 2963-2971. **IF: 2.3940**

Benito N, Filella D, Mateo J, Fortuna AM, Gutierrez-Alliende JE, Hernandez N, Gimenez AM, Pomar V, Castellvi I, Corominas H, Casademont J, Domingo P. Pulmonary Thrombosis or Embolism in a Large Cohort of Hospitalized Patients With COVID-19. FRONT MED (LAUSANNE). 2020 Aug 25;7:557. doi: 10.3389/fmed.2020.00557. PMID: 32984388; PMCID: PMC7477312. **IF: 3.900**

Castellvi I., Elhai M., Bruni C., Airo P., Jordan S., Beretta L., Codullo V., Montecuco C.M., Bokarewa M., Iannonne F., Balbir A., Hsu V.M., Distler O., Matucci-Cerinic M., Allanore Y., Safety and effectiveness of abatacept in systemic sclerosis: The EUSTAR experience (2020) SEMIN ARTHRITIS RHEU, 50 (6), 1489-1493. **IF: 4.7510**

Castellvi I., Simeon C.P., Sarmiento M., Casademont J., Corominas H., Fonollosa V., Effect of bosentan in pulmonary hypertension development in systemic sclerosis patients with digital ulcers (2020) PLOS ONE, 15 (12 December). **IF: 2.7400**

Corominas H, Castellví I, Pomar V, Antonijoan R, Mur I, Matas L, Gich I, de Benito N, Laiz A, Castillo D, Villamarin L, Filella D, Millán AM, Quijada MÁ, Puig M, Casademont J, Domingo P. Effectiveness and safety of intravenous tocilizumab to treat COVID-19-associated hyperinflammatory syndrome: Covizumab-6 observational cohort. CLIN IMMUNOL. 2020 Nov 12;223:108631. doi: 10.1016/j.clim.2020.108631. Epub ahead of print. PMID: 33189888; PMCID: PMC7658611. **IF: 3.368**

Corominas H., de Agustin J., Ultrasound and elastography in Sjögren's syndrome Ecografía y elastografía en el diagnóstico de síndrome de Sjögren (2020) MED CLIN-BARCELONA, 155 (6), 254-255. **IF: 1.6350**

Diez-Manglano, J; Perez, SID; Fenoll, RG; Sanchez, LA; Formiga, F; Galvan, VG; Duenas, C; Roca, B; Diaz, CE; Vales, EC; UDMIVI Study Researchers (Torres O) Palliative Sedation in Patients Hospitalized in Internal Medicine Departments. JPSM: Volume 59, ISSUE 2, P302-309, February 01, 2020. DOI:https://doi.org/10.1016/j.jpainsymman.2019.10.013. **IF: 3.378**

Díez-Manglano J; Sánchez Muñoz LA; García Fenoll R; Freire E; Plaza Canteli S; Machín Lázaro JM; Dueñas Gutiérrez C; Castiella Herrero J; de Isasmendi Pérez SI; Carneiro AH; Abad Requejo P; Torres Bonafonte O. Guía de práctica clínica de consenso sobre buenas prácticas en los cuidados al final de la vida de las Sociedades Española y Portuguesa de Medicina Interna. REV CLIN ESP. 2020 Jun 10:S0014-2565 (20) 30124-7. doi: 10.1016/j.rce.2020.04.014. **IF: 1.304**

Diaz-Torne C., Urruticoechea-Arana A., Ivorra-Cortes J., Diaz S., Dilla T., Sacristan J.A., Inciarte-Mundo J., Comellas M., Prades M., Lizan L., What Matters Most to Patients and Rheumatologists? A Discrete Choice Experiment in Rheumatoid Arthritis (2020) ADV THER, 37 (4), 1479-1495. **IF: 3.8710**

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Frade-Sosa B., Narvaez J., Salman-Monte T.C., Castellanos-Moreira R., Ortiz-Santamaria V., Torrente-Segarra V., Castellvi I., Magallares B., Reina D., Minguez S., Salles M., Manrique de Lara M.G., Ordonez S., Riera E., Schur P.H., Gomez-Puerta J.A., on behalf the CAPICAT-MAS Study Group, A comparative study on clinical and serological characteristics between patients with rhupus and those with systemic lupus erythematosus and rheumatoid arthritis (2020) LUPUS, 29 (10), 1216-1226. **IF: 2.2510**

Gonzalez-Serna D., Ochoa E., Lopez-Isac E., Julia A., Degenhardt F., Ortego-Centeno N., Radstake T.R.D.J., Franke A., Marsal S., Mayes M.D., Martin J., Marquez A., Assassi S., Zhou X., Tan F.K., Arnett F.C., Reveille J.D., Gorlova O., Chen W.V., Ying J., et al. A cross-disease meta-GWAS identifies four new susceptibility loci shared between systemic sclerosis and Crohn's disease (2020) SCI REP-UK, 10 (1). **IF: 3.9980**

Guisado-Alonso D, Edo MC, Estrada Alarcón PV, García-Sánchez SM, Font MÀ, Mena Romo L, Marrero-González P, Mengual JJ, Castrillo L, Montull C, Corominas H, Gómez-Choco M. Progression of Large Vessel Disease in Patients With Giant Cell Arteritis-Associated Ischemic Stroke: The Role of Vascular Imaging: A Case Series. J CLIN RHEUMATOL. 2020 Jul 23. doi: 10.1097/RHU.0000000000001498. **IF: 2.360**

Lobo-Prat D., Corominas H., Pomar V., Suitability of serology tests for the diagnosis of Lyme disease. Single center urban cohort Idoneidad del análisis serológico de la enfermedad de Lyme en una cohorte urbana (2020) MED CLIN-BARCELONA. **IF: 1.6350**

Miller P.D., Pannacciulli N., Malouf-Sierra J., Singer A., Czerwinski E., Bone H.G., Wang C., Huang S., Chines A., Lems W., Brown J.P., Efficacy and safety of denosumab vs. bisphosphonates in postmenopausal women previously treated with oral bisphosphonates (2020) OSTEOPOROSIS INT, 31 (1), 181-191. **IF: 3.8640**

Moya Alvarado P., de Agustin de Oro J.J., Aparicio Espinar M., Armengol Perez E., Busquets Perez N., Carmona L., Casado Burgos E., Clavaguera Poch T., Cuervo Aguilera A., De Miguel Mendieta E., Estrada Alarcon P., Garcia Casares E., Holgado Perez S., et al. Corominas Macias H., Interobserver reliability of Masei index validation by a multicenter collaborative group of rheumatologists (2020) RHEUMATOL INT. **IF: 1.9840**

Moya P, Castellví I, Magallares B, Millan M, Wilson N, Corominas H. Healing of Mucocutaneous Lesions With Apremilast in Behçet Disease. J CLIN RHEUMATOL. 2020 Aug;26(5):e132. **IF: 2.360**

Novella-Navarro M., Cabrera-Alarcon J.L., Diaz-Torne C., Aramburu-Munoz F., Janta I., Ortega de la O M.C., Prada-Ojeda A., Sala-Icardo L., Urruticoechea-Arana A., Garcia de la Pena Lefebvre P., Calvo-Aranda E., A treat-to-target approach for gout confers renoprotective effect in patients with chronic kidney disease stage 3 (2020) RHEUMATOL INT, 40 (7), 1081-1087. **IF: 1.9840**

Riancho-Zarrabeitia L., Martinez-Taboada V., Rua-Figueroa I., Alonso F., Galindo-Izquierdo M., Ovalles J., Olive-Marques A., Fernandez-Nebro A., Calvo-Alen J., Menor-Almagro R., Tomero-Muriel E., Uriarte-Isacelaya E., Botenau A., Andres M., Freire-Gonzalez M., Santos Soler G., Ruiz-Lucea E., Ibanez-Barcelo M., Castellvi I., Galisteo C., Quevedo Vila V., Raya E., Narvaez-Garcia J., Exposito L., Hernandez-Beriain J.A., Horcada L., Aurrecoechea E., Pego-Reigosa J.M., Antiphospholipid syndrome (APS) in patients with systemic lupus erythematosus (SLE) implies a more severe disease with more damage accrual and higher mortality (2020) LUPUS, 29 (12), 1556-1565. **IF: 2.2510**

Robles-Perez A., Dorca J., Castellvi I., Nolla J.M., Molina-Molina M., Narvaez J., Rituximab effect in severe progressive connective tissue disease-related lung disease: preliminary data (2020) RHEUMATOL INT, 40 (5), 719-726. **IF: 1.9840**

Romero-Bueno F., Diaz del Campo P., Trallero-Araguas E., Ruiz-Rodriguez J.C., Castellvi I., Rodriguez-Nieto M.J., Martinez-Becerra M.J., Sanchez-Pernaute O., Pinal-Fernandez I., Solanich X., Gono T., Gonzalez-Gay M.A., Plana M.N., Selva-O'Callaghan A., Recommendations for the treatment of anti-melanoma differentiation-associated gene 5-positive dermatomyositis-associated rapidly progressive interstitial lung disease (2020) SEMIN ARTHRITIS RHEU, 50 (4), 776-790. **IF: 4.7510**

Salman-Monte T.C., Sanchez-Piedra C., Fernandez Castro M., Andreu J.L., Martinez Taboada V., Olive A., Rosas J., Menor R., Rodriguez B., Garcia Aparicio A., Lopez Longo F.J., Manrique-Arija S., Garcia Vadillo J.A., Gil Barato S., Lopez-Gonzalez R., Galisteo C., et al. Prevalence and factors associated with osteoporosis and fragility fractures in patients with primary Sjögren syndrome (2020) RHEUMATOL INT, 40 (8), 1259-1265. **IF: 1.9840**

Suarez-Calvet X., Alonso-Perez J., Castellvi I., Carrasco-Rozas A., Fernandez-Simon E., Zamora C., Martinez-Martinez L., Alonso-Jimenez A., Rojas-Garcia R., Turon J., Querol L., de Luna N., Milena-Millan A., Corominas H., Castillo D., Cortes-Vicente E., Illa I., Gallardo E., Diaz-Manera J., Thrombospondin-1 mediates muscle damage in brachio-cervical inflammatory myopathy and systemic sclerosis (2020) NEUROL-NEUROIMMUNOL, 7 (3). **IF: 7.7240**

Vela P., Sanchez-Piedra C., Perez-Garcia C., Castro-Villegas M.C., Freire M., Mateo L., Diaz-Torne C., Bohorquez C., Blanco-Madrigal J.M., Ros-Vilamajo I., Gomez S., Cano R., Sanchez-Alonso F., Diaz-Gonzalez F., Gomez-Reino J.J., Influence of age on the occurrence of adverse events in rheumatic patients at the onset of biological treatment: Data from the BIOBADASER III register (2020) ARTHRITIS RES THER, 22 (1), 143-. **IF: 4.1030**

Vinyé Bausà M, Bausà Peris R, Corominas H. Cross-reactions between rheumatoid factor and IgM SARS-CoV-2. MED CLIN (ENGL ED). 2020 Nov 13;155(9):417-418. doi:10.1016/j.medcle.2020.07.006. **IF: 1.635**

Zegarra-Mondragon S., Lopez-Gonzalez R., Martin-Martinez M.A., Garcia-Gomez C., Sanchez-Alonso F., Gonzalez-Juanatey C., Arija S.M., Hernan G.B., Pardo S.M., Escribano A.R., Garcia E.P., Frias E.D., Redondo J.R., Sanchez M.D., Cambron A.B.R., et al. Association of apolipoprotein B/apolipoprotein A1 ratio and cardiovascular events in rheumatoid arthritis: Results of the CARMA study (2020) CLIN EXP RHEUMATOL, 38 (4), 662-669. **IF: 3.3190**

Other Publications

- Casademont J. Reflexiones de un docente ante la situación de pandèmia de COVID-19. FEM 2020; 23(3): 107-109.
- Corominas H, Castellví I, Domingo P, Casademont J. Facing the SARS-CoV-2 (COVID-19) outbreak with IL-6R antagonists [published online ahead of print, 2020 Apr 17]. Eur J Rheumatol. 2020;10.5152/eurjrheum.2020.20061. doi:10.5152/eurjrheum.2020.20061.
- Corominas H, Espadaler L, Gómez A, Ros I, Urruticoechea A, Sarmiento M, Sanmartí R. Assessing treatment tolerability for rheumatoid arthritis. Validation and practical applications of the 'TOL-AR-18 questionnaire'. Reumatol Clin. 2020 Mar-Apr;16(2 Pt 2):149-155.
- Tornero Molina J, Balsa Criado A, Blanco García F, Blanco Alonso R, Bustabad S, Calvo Alen J, Corominas H, Fernández Nebro A, Román Ivorra JA, Sanmartí R. Expert Recommendations on the Interleukin 6 Blockade in Patients with Rheumatoid Arthritis. Reumatol Clin. 2020 Jul-Aug;16(4):272-281.
- Badlissi F, Pihan GA, Corominas H. Rosai-Dorfman disease: Ultrasonography and histopathology study of a soft tissue mass in the forearm. Reumatol Clin. 2020 Mar-Apr;16(2 Pt 2):174-176. English, Spanish. doi: 10.1016/j.reuma.2018.02.013.
- Corominas H, Balius R, Estrada-Alarcón P, Reina D, Moya P, Videla M. Giant Pes Anserinus Bursitis: A Rare Soft Tissue Mass of the Medial Knee. Reumatol Clin. 2020 Aug 7:S1699-258X(20)30158-3.

Books or Chapters with ISBN

- Casademont J, Porcel JM. Aspectos médicos del paciente quirúrgico. In: Rozman (ed.) Farreras-Rozman: Medicina Interna XIX. Elsevier. Barcelona 2020, pp 39-43. ISBN: 978-84-9113-545-6
- Casademont J. Aproximación clínica al paciente con sintomatología del sistema nervioso periférico y muscular. In: Rozman (ed.) Farreras-Rozman: Medicina Interna XIX. Elsevier. Barcelona 2020, pp 1467-1470. ISBN: 978-84-9113-545-6
- Casademont J. Neuropatías adquiridas. In: Rozman (ed.) Farreras-Rozman: Medicina Interna XIX. Elsevier. Barcelona 2020, pp 1479-1484. ISBN: 978-84-9113-545-6
- Grau JM, Casademont J, Cardellach F. Enfermedades musculares. In: Rozman (ed.) Farreras-Rozman: Medicina Interna XIX. Elsevier. Barcelona 2020, pp 1491-1502. ISBN: 978-84-9113-545-6

Diffusion Activities

- Curso online multidisciplinar en Vitamina D. Madrid, 1-2 March 2020. http://www.cursonlinemasterclassvitaminad.com/comite-cientifico
- Héctor Corominas. Co-Director. Course Musculoskeletal Ultrasound Introduction Course for fellows and faculty.. Rheumatology Division. Beth Israel Deaconess Medical Center, Harvard Medical School. Boston, 14-15 November 2019.
- Elena Sendra, Jordi Casademont. Ús d'opiacis i percepció del control del dolor en pacients hospitalitzats. UAB Divulga, August 2020. ISSN 2014-6388
- https://ddd.uab.cat/pub/uabdivulga/uabdivulga_a2020m8/uabdivulga_a2020m8a1iCAT.pdf
- Torres OH. L'atenció al final de vida a l'hospital. UAB divulg@. A fons. June 2020, ISSN: 2014-6388
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AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Chronic Respiratory Diseases

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Gutiérrez Rouco, Marta (FGS)
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Mayos Pérez, Mercedes (FGS)
Miralda Galan, Rosa Maria (FGS)
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Palones Femenía, Esther (FGS)
Paz del Río, Luís Daniel (FGS)
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Perea Soriano, Lidia (IR)
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Ramos Barbon, David (FGS)
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Main Lines of Research

Asthma

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

COPD and Respiratory Failure

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

Obstructive Sleep Apnoea (OSA)

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

- Dr. V. Plaza, Emergent Asthma Group, SEPAR.
- Dr. V. Plaza, INASMA Group.
- Drs. V. Plaza and D. Ramos Barbón, Integrated Research Programme (PII) for Asthma, SEPAR.
- Drs. V. Plaza and D. Ramos Barbón, group associated with CIBER-Respiratory.
- Dr. D. Ramos Barbón, Severe Heterogenous Asthma Research collaboration, Patient-centered (SHARP) Program of the European Respiratory Society.
- Dr. D. Castillo Villegas, National Institute for Rare Diseases, Insituto de Salud Carlos III, Madrid, Spain.
- Dr. D. Castillo Villegas, International Working Group on Langerhans Cell Histiocytosis and EUROHISTIONET.
- Dr. D. Ramos Barbón (PI), Multicentre Biobank of Bronchial Biopsies for Asthma Research, with collaborators as follows:
  - Dr. Carlos Martínez Rivera from Hospital Universitari Germans Trias i Pujol, Badalona, Spain.
  - Dr. Antolín López Viña from Hospital Universitario Puerta de Hierro, Madrid, Spain.
  - Dr. Francisco Javier González Barcala from Complejo Hospitalario de Pontevedra, Spain.

- Dr. Teresa Bazús González from Hospital Universitario Central de Asturias, Oviedo, Spain.
- Dr. Luis Pérez de Llano from Hospital Lucus Augusti, Lugo, Spain (pending approval).
- Dr. Patrick Berger from Université Bordeaux 2, Bordeaux, France.
- Dr. James G Martin from McGill University, Montreal, Canada.

- Ástrid Crespo Lessmann. Participation in the drafting of Consenso de Asma Grave no Controlada of the Sociedad Española de Neumología y Cirugía Torácica (SEPAR), Área de Asma.
- Ástrid Crespo Lessmann. Participation in the drafting of Consenso de Manejo del Asma en Personas Mayores de la Sociedad Española de Neumología y Cirugía Torácica (SEPAR), Área de Asma.
- Ástrid Crespo Lessmann. Participation in the drafting of Consenso de Manejo del Asma y Enfermería de la Sociedad Española de Neumología y Cirugía Torácica (SEPAR), Área de Asma.
- Ástrid Crespo Lessmann. Coordinator of the Diplomatura de Postgrado "Pneumología Avançada". Cátedra Inspira. Year 2020-2021. Universitat Autònoma de Barcelona. COD: 4375/1
- Ástrid Crespo Lessmann. Member of the scientific committee of the Proyecto Carabela. Asma zero. Fundación Astrazéneca. Years 2019-2020, 2020-2021, 2021-2022.
- Ástrid Crespo Lessmann. Representative of the Governing Board of SEPAR (as a pulmonologist) in the Pneumology Working Group of the Spanish Society of Hospital Pharmacy, from January 2020 to the present.
- Ástrid Crespo Lessmann. Member of the scientific committee of the SOCAP (Societat Catalana de Pneumologia). Vocal. From October 2017 to the present.
- Lorena Soto Retes. Grupo CIBER de Enfermedades Respiratorias (CIBERES).

Active Grants

- Mercedes Mayos Pérez. Proyecto PASHOS: Plataforma avanzada para el estudio del síndrome de Apnea hipopnea Obstructiva del sueño (SAHS). SOCAP 2013-2014. Societat Catalana de Pneumologia. Duration: 2014-2021. 10,909.08 €.
- Alfonso Torrego Fernández. Estudi dels mecanismes fisiopatològics i resultats de l'aplicació de termoplàstia bronquial en asma greu. BECA VIFOR - FUCAP 2015. Fundació Catalana de Pneumologia. Duration: 2015-2020. 10,363.65 €.
- Vicente Plaza Moral. Asma Neutrofílica y/o No Eosinofílica. Proyecto ANNE. PI17/01950. Instituto de Salud Carlos III. Duration: 2018-2022. 87,000 €.
- Oriol Sibila Vidal. El proyecto PRINCE; Predictores Inmunológicos de Infección Bronquial en Enfermedades Respiratorias Crónicas. PI18/00311. Instituto de Salud Carlos III. Duration: 2019-2021. 97,000 €.
- David Ramos Barbon. Cercamiento de subproductos de células madre mesenquimales mediadores de anti-remodelación de músculo liso bronquial y prueba farmacológica preclínica en asma experimental. PI18/01102. Instituto de Salud Carlos III. Duration: 2019-2021. 122,000 €.
- Lorena Concepción Soto Retes. Papel del sistema nervioso autónomo en el asma no controlada y en el fenotipo paucigranulocítico. SEPAR 2016. Fundació RESPIRA. Duration: 2018-2021. 23,750 €.
- Astrid del Carmen Crespo Lessmann. Asma Neutrofílica No Eosinofilica (ANNE). ASTRAZENECA 2018. Fundació AstraZeneca. Duration: 2018-2020. 18,181.82 €.
- Virginia Pajares Ruiz. Biopsia electrónica de tejido pulmonar in-vivo basada en espectroscopia de impedancia eléctrica. RTI2018-098116-B-C22. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 25,000 €.
- Vicente Plaza Moral. Asma neutrofílica y/o no eosinofílica (Proyecto ANNE). SEPAR 2017. Societat Espanyola de Pneumologia i Cirugia Toràcica. Duration: 2018-2021. 9,845.45 €.
- Sandra Giménez Badia. The impact of Alzheimer's disease on sleep in adults with Down Syndrome. JEROME LEJEUNE 2019. Jérôme Lejeune Fondation. Duration: 2020-2022. 78,030 €.
- Vicente Plaza Moral. Non-Eosinophilic Neutrophilic Asthma. Ramón Pla Armengol 2018. Fundació Ramón Pla Armengol. Duration: 2019-2022. 63,636.36 €.
- Ana María Lapuente Torrents. Micromioma bronquial en el asma neutrofilica. SEPAR 2017-1. Sociedad Española de Neumología y Cirugía Torácica. Duration: 2020-2021. 15,218.18 €.
- Vicente Plaza Moral. Projecte ANNE (Non-Eosinophilic Neutrophilic Asthma). Fundació Ramón Pla i Armengol. Duration: 2019-2022. 70,000 euros.

Clinical Trials

- Astrid Crespo Lessmann. Estudio sobre la carga que supone para el sistema sanitario y los pacientes la tos crónica refractaria o inexplicada. Multicenter study. Burden. MSD. Alpha Bioresearch. MERCOD-2020-01.
- David Ramos Barbón. A single-centre, randomised, double-blind, placebo-controlled, cross-over study to assess the efficacy of a 5-day, once daily 10-mg PBF-680 oral administration course to attenuate allergen bronchoprovocation-induced late asthmatic responses (LAR) in asthmatic patients controlled on low-to-medium dose inhaled corticosteroid maintenance monotherapy and inhaled short-acting beta-2 agonist as rescue bronchodilator. RETOS RTC-2016-4698-1. IIBSP-PBF-2015-34. EudraCT number: 2015-001957-34. Palobiofarma S.L.
- David Ramos Barbón. A phase II, double-blind, randomized, placebo-controlled multi-center study to investigate the effect of the adenosine A1 receptor antagonist PBF-680 on forced expiratory volume in 1 second (FEV1) in patients with mild-to moderate persistent atopic asthma. PBF-680CT-05. EudraCT number: 2017-003663-35. Palobiofarma S.L.
- David Ramos Barbón. Estudio multinacional, de un solo grupo, observacional para evaluar la eficacia y el patrón de uso en la vida real de mepolizumab en pacientes con asma eosinofilica grave. Protocol Number: 204710. EucraCT number: 2015-002361-32. GlaxoSmithKline.
- David Ramos Barbón. A randomized, double-blind, placebo-controlled, parallel group, multicenter, phase 2a study to explore the efficacy and safety of Tezepelumab in patients with moderate to very severe chronic obstructive pulmonary disease (COPD). Protocol number: D5241C00001. Astra Zeneca.

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

Grants Awarded in 2020

- Sandra Giménez Badia. Síndrome de apnea-hipopnea del sueño y síndrome de Down: cognición, biomarcadores de Enfermedad de Alzheimer en plasma, líquido cefalorraquídeo y resonancia magnética. PI20/00836. Instituto de Salud Carlos III. Duration: 2021-2023. 64,000 €.

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

Doctoral Theses

- Rubén Osuna Gómez. The role of mesenchymal stem cell products in experimental asthma. Universitat Autònoma de Barcelona (UAB). Departament de Biologia Cel·lular, de Fisiologia i d'Immunologia (Programa de Doctorat en Immunologia Avançada). Director: David Ramos Barbón. Date of defense: 14/04/2020

Scientific Production

Total Impact Factor: 272.192 · Mean Impact Factor: 8.0056

Amor-Carro O., White K.M., Fraga-Iriso R., Marinas-Pardo L.A., Nunez-Naveira L., Lema-Costa B., Villarnovo M., Verea-Hernando H., Ramos-Barbon D., Airway hyperresponsiveness, inflammation, and pulmonary emphysema in rodent models designed to mimic exposure to fuel oil–derived volatile organic compounds encountered during an experimental oil spill (2020) ENVIRON HEALTH PERSP, 128 (2). **IF: 8.3820**

Billi P.M., Ruiz V.P., Vara R.G., Aunon J.V., Fernandez A.T., Recurrent Haemoptysis Secondary to Abnormal Arterial Supply to the Right Lower Lobe of the Lung Hemoptisis recurrente secundaria a vascularización anómala del lóbulo inferior del pulmón derecho (2020) ARCH BRONCONEUMOL. **IF: 4.9570**

Canonica G.W., Alacqua M., Altraja A., Backer V., Bel E., Bjermer L., Bjornsdottir U., Bourdin A., Brusselle G.G., Christoff G.C., Cosio B.G., Costello R.W., FitzGerald J.M., Gibson P.G., Heaney L.G., Heffler E., Hew M., Iwanaga T., Jones R.C., Siyue M.K., Rhee C.K., et al. International Severe Asthma Registry: Mission Statement (2020) CHEST, 157 (4), 805-814. **IF: 8.3080**

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Castillo D, Sánchez-Font A, Pajares V, Franquet T, Llatjós R, Sansano I, Sellarés J, Centeno C, Fibla JJ, Sánchez M, Ramírez J, Moreno A, Trujillo-Reyes JC, Barbeta E, Molina-Molina M, Torrego A; por el grupo de trabajo CRIOMPID. A Multidisciplinary Proposal for a Diagnostic Algorithm in Idiopathic Pulmonary Fibrosis: The Role of Transbronchial Cryobiopsy. ARCH BRONCONEUMOL 2020;56(2):99-105. doi: 10.1016/j.arbres.2019.07.001. PMID: 31420183. **IF: 4.957**

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Crespo-Lessmann A, Plaza V, Consensus Group. Multidisciplinary consensus on sputum induction biosafety during the COVID-19 pandemic. ALLERGY 2020 Dec 12. doi: 10.1111/all.14697. PMID: 33314245. Online ahead of print. **IF: 8.706**

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Perez de Llano L., Miravitlles M., Golpe R., Alvarez-Gutierrez F.J., Cisneros C., Almonacid C., Martinez-Moragon E., Gonzalez-Barcala F.-J., Ramos-Barbon D., Plaza V., Lopez-Campos J.L., de-Torres J.P., Casanova C., Garcia Rivero J.L., Rodriguez Hermosa J., Calle Rubio M., Soler-Cataluna J.J., Cosio B.G., A proposed approach to chronic airway disease (CAD) using therapeutic goals and treatable traits: A look to the future (2020) INT J CHRONIC OBSTR, 15, 2091-2100. **IF: 2.7720**

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Plaza V., Giner J., Curto E., Alonso-Ortiz M.B., Orue M.I., Vega J.M., Cosio B.G., Linares V.B., Mora R.B., Cesar E.C., Viera A.C., Castillo R., Romero J.D., de los Monteros-Garde M.J.E., Fernandez Rodriguez-Lacin J.M., Garcia Robaina J.C., et al. Determinants and Differences in Satisfaction with the Inhaler Among Patients with Asthma or COPD (2020) J ALLER CL IMM-PRACT, 8 (2), 645-653. **IF: 7.5740**

Plaza V., del Cuvillo A., Soto-Retes L., Gras J.R., Cisneros C., Sanchez-Cuellar S., Gomez-Bastero A., Martinez-Moragon E., Sabadell C., Quirce S., Alvarez F., Rosado A., Lluch I., Soto G., Functional Endoscopic Sinus Surgery for Nasal Polyposis in Asthma Patients: Impact on Bronchial Inflammation Cirugía endoscópica nasosinusal para la poliposis nasal en pacientes con asma: impacto en la inflamación bronquial (2020) ARCH BRONCONEUMOL, 56 (6), 403-405. **IF: 4.9570**

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Other Publications

- Álvarez-Gutiérrez FJ, Blanco-Aparicio M, Plaza V, Cisneros C, García-Rivero JL, Padilla A, Pérez-de Llano L, Perpiñá M, Soto-Campos G. Consensus Document for Severe Asthma in Adults. 2020 Update. Open Respir Arch 2020;2 (3): 158-74. doi: 10.1016/j.opresp.2020.03.005
- Crespo-Lessmann, Astrid. Recuento de células inflamatorias en el esputo inducido. Boletin nº27 del grupo emergente de asma / May 2020. Chiesi.
- Novelli S, Soto L, Caballero A, Moreno ME, Lara MJ, Bayo D, Quintas A, Jimeno P, Zamora MI, Bigorra T, Sierra J, Briones J. Assessment of Confirmed Clinical Hypersensitivity to Rituximab in Patients Affected with B-Cell Neoplasia. Adv Hematol 2020:4231561. doi: 10.1155/2020/4231561. PMID: 32577119.
- Pajares V, Torrego A, Martínnez-Téllez E, Trujillo-Reyes JC. Diagnosis and invasive staging: Non-surgical invasive mediastinal staging. Endobronchial ultrasound. J Clin Transl Res 2020;6(4):121-126. PMID: 33521372.
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- Riu PJ, Company G, Bragos R, Rosell J, Pajares V, Torrego A. Minimally Invasive Real-Time Electrical Impedance Spectroscopy Diagnostic Tool for Lung Parenchyma Pathologies. Annu Int Conf IEEE Eng Med Biol Soc 2020 ;2020:5077-5080. DOI: 10.1109/EMBC44109.2020.9175860. PMID: 33019128.

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- Plaza Moral, V. (coordinator). Guía Española para el Manejo del Asma (GEMA 5.0). Editorial Luzan 5. Madrid 2020. ISBN: 978-84-17372-97-2. DL: M-11218-2020.
- Plaza, Vicente; Callejas, Javier (editors). La SEPAR que viene 2020. Editorial SEPAR-Respira. Barcelona 2020. ISBN: 978-84-949729-6-6.
- Plaza Moral, V. (coordinator). MiniGEMA 5.0. Editorial Luzan5. Madrid 2020. ISBN: 978-84-17372-98-9. DL: M-14112-2020.
- Plaza Moral V, Trigueros Carrero JA, Valero Santiago AL. Consenso multidisciplinar sobre terapia inhalada en asma. Madrid: Content Ed Net Communications; 2020. ISBN: 978-84-09-19856-6.
- Plaza Moral, V. (coordinator). GEMA 5.0 adaptación ATENCIÓN PRIMARIA. Editorial Luzan 5. Madrid 2020. ISBN: 978-84-18420-20-7.
- Plaza Moral, V. (coordinator). GEMA 5.0 adaptación FARMACIA HOSPITALARIA. Editorial Luzan 5. Madrid 2020. ISBN: 978-84-18420-93-1.
- Plaza Moral, V. (coordinator). GEMA 5.0 adaptación ORL. Editorial Luzan 5. Madrid 2020. ISBN: 978-84-18626-00-5.
- Plaza Moral, V. (coordinator). GEMA 5.0 adaptación PEDIATRÍA. Editorial Luzan 5. Madrid 2020.
- Plaza Moral, V. (coordinator). GEMA 5.0 adaptación URGENCIAS. Editorial Luzan 5. Madrid 2020.
- Almonacid, Carlos; Plaza, Vicente (coordinators). Guía SEPAR para la teleconsulta de pacientes respiratorios. Ed. Respira. 2020. ISBN: 978-84-949729-7-3. Disponible en: https://www.separ.es/node/1972.
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Diffusion Activities

Communicatios to Congresses

- Rafecas Codern, Albert; Crespo Lessmann, Astrid; Curto Sánchez, Elena; Serra, Candela; Sánchez Maza, Soraya; Giner Donaire, Jordi; Plaza Moral, Vicente. Experiencia del uso de fibrorinolaringoscopia en una consulta de neumología de tos crónica y asma grave no controlada. 53 Congreso Virtual SEPAR 2020.
- Curto, Elena; Orozco, Sandra; Trujillo, Paulina; Giner, Jordi; Sánchez-Maza, Soraya; Crespo-Lessmann, Astrid; Plaza, Vicente. Valoración de la función pulmonar por medio de la oscilometría de impulsos: comparación con la espirometría forzada. 53 Congreso Virtual SEPAR 2020.

- Elena Curto, Sandra Orozco, Paulina Trujillo, Jordi Giner, Soraya Sánchez-Maza, Astrid Crespo-Lessmann, Vicente Plaza. Utilidad de la oscilometría en el diagnóstico de asma. ERS 2020. Congreso virtual. 53 Congreso Virtual SEPAR 2020.
- Sánchez Maza, Soraya; Giner Donaire, Jordi; Curto Sánchez, Elena; Crespo Lessmann, Astrid; Plaza Moral, Vicente. Espirometría vs oscilometria, resultados y preferencias del paciente. 53 Congreso Virtual SEPAR 2020.
- Curto Sánchez, Elena; Crespo Lessmann, Astrid; Serra, Candela; Mateus Medina, Eder; Osuna Gómez, Rubén; Muñoz Esquerre, Mariana Mercedes; Martínez Rivera, Carlos; Lapuente Torrents, Ana; Soto Retes, Lorena; Ramos Barbón, David; Plaza Moral, Vicente. Diferencias entre el perfil de interleucinas tipo no T2 en asmáticos neutrofílicos graves: resultados preliminares del proyecto ANNE. 53 Congreso Virtual SEPAR 2020.
- Galván Blasco, Paula; Soto-Retes, Lorena; Mateus-Medina, Eder; Ramos, David; Plaza, Vicente. Clinical and inflammatory phenotypic profile of the moderate and severe persistent asthma in a tertiary hospital of Barcelona. EAACI Digital Congress London, 6-8 June 2020.
- Ramos-Barbon D, Brienza NS, Bigorra Rodríguez T, Mateus Medina EF, Gich Saladich I, Puntes Rodríguez M, Antonijoan Arbos RM, Quirce Gancedo S, Castro Palomino Laria N, Castro Palomino Laria J. PBF-680, an oral A1 adenosine receptor antagonist, inhibits the late allergic response (LAR) in mild-to-moderate atopic asthmatics: a Phase-IIa trial. Eur Respir J 2020;56 (Suppl. 64):4784; DOI: 10.1183/13993003.congress-2020.4784. European Respiratory Society Annual Congress 2020, virtual.
- Ramos-Barbon D, Brienza NS, Bigorra Rodríguez T, Gich Saladich I, Puntes Rodríguez M, Antonijoan Arbos RM, Castro Palomino Laria N, Castro Palomino Laria J. PBF-680, an oral A1 adenosine receptor antagonist, inhibits adenosine monophosphate (AMP) airway hyperresponsiveness (AHR) in mild-to-moderate asthma: a Phase-IIa proof-of-concept trial. Eur Respir J 2020;56 (Suppl. 64):2279; DOI: 10.1183/13993003.congress-2020.2279. European Respiratory Society Annual Congress, virtual.

Courses, Seminars and Conferences

- Ástrid Crespo Lessmann. Coordinator. Curso de formación SEPAR en línea de esputo inducido para la SEPAR. March 2020.
- Ástrid Crespo Lessmann. Manejo del paciente respiratorio complejo: Hospital de día, ¿qué, cómo y por qué? Neumoconnect 2020. Virtual, 29 May 2020.
- Ástrid Crespo Lessmann. Retirada de corticoterapia prolongada en pacientes Práctica clínica. Webinar GSK. 8 June 2020.
- Ástrid Crespo Lessmann. Obtención de la muestra y discusión de casos prácticos. Eos Academy. Webinar: Taller de Esputo inducido. AstraZeneca. 15 June 2020.
- Ástrid Crespo Lessmann. Reuniones de Asma en Catalunya. ¿Hacia dónde vamos? AstraZeneca. Consultora. Equipo de Deloitte. 11-18 June 2020.
- Ástrid Crespo Lessmann. Análisis del esputo inducido. Webinar: Proves de funció pulmonar en temps de COVID-19. SOCAP. 9 July 2020.
- Ástrid Crespo Lessmann. Webinar Seguimiento de pacientes post-COVID. With the collaboration of AstraZeneca. July 2020.
- Ástrid Crespo Lessmann. Webinar Retirada de glucocorticoides sistémicos en la práctica Clínica. With the collaboration of GSK. 14 October 2020.
- Ástrid Crespo Lessmann. Webinar: Asma grave no controlada según la GEMA 5.0. With the collaboration of GSK. 29 October 2020.
- Ástrid Crespo Lessmann. Webinar: Mepolizumab en la vida real. Características y serie de pacientes. With the collaboration of GSK. 5 October 2020.
- Ástrid Crespo Lessmann. Manejo del paciente respiratorio complejo: Hospital de día, ¿qué, cómo y por qué? Neumoconnect Regional 2020. Virtual. 5 November 2020.
- Ástrid Crespo Lessmann. Sesión de formación para visitadores médicos comerciales de GSK sobre el consenso de retirada de glucocorticoides sistémicos en la práctica Clínica. 14 October 2020.
- Ástrid Crespo Lessmann. Moderaor poster P.E - 53º Congreso SEPAR 2020. 12-14 November 2020.
- Ástrid Crespo Lessmann. Webinar: Presentación del consenso de retirada de corticoides. GSK. Grupo de asma de la SOCAP. 24 November 2020.
- Ástrid Crespo Lessmann. Webinar. Cuestionarios de utilidad en el asma bronquial. Grupo de asma de Alergología Catalana. AlergoBioCat. 15 December 2020.
- Vicente Plaza Moral. Organizer. 12ª reunión del Curso Residentes R3 Neumología SEPAR. Palma Mallorca. February 2020.
- Vicente Plaza Moral. Organizer. Asma Meeting Point virtual. July 2020.
- Vicente Plaza Moral. Presentación de la GEMA 5.0. 13º Congreso ALAT 2020. December 2020.
- Vicente Plaza Moral. Director of the Cátedra Inspira-UAB 2020.
- Lorena Soto Retes. Internal Seminar of the Servicio de Neumologia y Alergia. Estudio CEOS (fenotipos eosinofilos) y Provocación nasal y oscilometría. Research Session. 9 January 2020.
- Lorena Soto Retes. Course Immunotrainging. Barcelona, 14 October 2020.
- Lorena Soto Retes. Podcast Hot topics. Los corticoides inhalados en asma leve, a intervalos, a demanda o en pauta mantenida. SmallArways.es
- Lorena Soto Retes. Conference. Novedades en el manejo del asma grave. Cambiemos las reglas del manejo del asma. Congreso Nacional de Alergia y Inmunología Clínica. 5 November 2020.
- Lorena Soto Retes. Conference. Pro-con tratamiento del asma leve: corticoides a intervalos o de forma continuada. Congreso Nacional de Alergia y Inmunología Clínica. 6 November 2020.
- Lorena Soto Retes. Seminario Alergo Bio Cat en el Asma Grave, Barcelona, 15 December 2020.
- David Ramos Barbón. Immunogame Training. Societat Catalana de Pneumologia/GSK Virtual course. Ciencia del Eosinófilo. Invited presentation / conference. 24 November 2020.
- David Ramos Barbón. Sociedad Española de Neumología y Cirugía Torácica (SEPAR). 53º Congreso Nacional, 12-14 Nov 2020, Virtual Symposium. Impacto, registros y consecuencias clínicas de la COVID-19. Mecanismos de enfermedad y consecuencias clínicas. Invited presentation / conference. 14 November 2020.
- David Ramos Barbón. Eos SUMMIT. GSK International Virtual Symposium. Virtual Reality, 20-21 October 2020. Organizer / Presenter full event.
- David Ramos Barbón. ChestAir Symposium. Ying y Yang del eosinófilo. GSK. Madrid, 21-22 Feb 2020. Invited presentation / conference. 22 February 2020.
- David Ramos Barbón. Preparation of two units for the Curso On-line sobre Manejo del Esputo Inducido of the Sociedad Española de Neumología y Cirugía Torácica (SEPAR). SEPAR and Méderic Ediciones 2020. Chapter 1. Inflamación crónica de las vías respiratorias: fundamento inmunobiológico. Chapter 2. Listado de material y recursos técnicos que se precisan. 15 March 2020-14 March 2021.
- David Ramos Barbón. Investigación básica en asma. Sociedad Española de Neumología y Cirugía Torácica (SEPAR). Reunión de Invierno 2010. Málaga. XXXIII Reunión del Grupo Emergente de Asma. 8 February 2020.
- David Ramos Barbón. GlaxoSmithKline (GSK). Eosinophil roles in health and in chronic inflammatory respiratory diseases. Virtual 21 July 2020.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Research Group in HIV and AIDS

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Main Lines of Research

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

Scientific Challenges

Medical care projects

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

Pathogenic mechanisms altering body fat distribution

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

Metabolic disorders associated with antiretroviral treatment

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

Body composition

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

New antiretroviral drugs

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

Cardiovascular risk associated with antiretroviral treatment

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

Comorbid conditions associated with HIV-1 infection

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

Pharmacogenetics (toxicogenetics)

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

Bacterial meningitis

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Microbiology and Infectious Diseases (Dr. Pere Coll)

Active Grants

- Isabel Mur Arizon. Formación integral en VIH, evaluación de las comorbilidades y de las infecciones de transmisión sexual. CM18/00233. Instituto de Salud Carlos III. Duration: 2019-2022. 64,926.17 €.
- Pere Domingo Pedrol. Contractes per a la intensificació de l'activitat investigadora 2019. INT19/00036. Instituto de Salud Carlos III. Duration: 2020-2020. 30,000 €.
- Pere Domingo Pedrol. Prevalencia y progresión de la ateromatosis subclínica en pacientes con infección por VIH: correlación con marcadores de señalización inter-orgánica, disbiosis intestinal y estrés oxidativol. PI17/00498. Instituto de Salud Carlos III. Duration: 2018-2021. 90,000 €.
- Rubén Cereijo Téllez. Papel de la plasticidad adiposa en las alteraciones metabólicas en pacientes con VIH-1. IJC2018-037142-I. Ministerio de Economía y Competitividadt. Duration: 2020-2022. 93,000 €.
- Pere Domingo Pedrol. Role of inter-organ signaling molecules in the fat-liver and gut-liver axes in non-alcoholic fatty liver disease in HIV-infected patients: contributiion to the spectrum and progression of the disease. GILEAD 2019-2. Gilead Sciencies, S.L.U. Duration: 2019-2021. 45,450 €.
- Noemi Corbacho Pérez. Beca per infeccions en VIH. SCMI 2019. Societat Catalana de Malalties Infeccioses i Microbiologia Clínica. Duration: 2019-2021. 18,000 €.

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

Grants Awarded in 2020

- Pere Domingo Pedrol. Aproximación a los mecanismos de ganancia excesiva de peso asociada a INsTI y TAF en PVV: de la interferencia con la homeostasis ingreso-gasto energía a la alteración de la biología adipocitaria. PI20/00137. Instituto de Salud Carlos III. Duration: 2021-2023. 125,000 €.
- Pere Domingo Pedrol. Ensayo clínico piloto, abierto, randomizado de uso combinado de Hidroxicloroquina, Azitromicina y Tocilizumab para el tratamiento de la infección por SARS-CoV-2 (COVID-19). COV20/00070. Instituto de Salud Carlos III. Duration: 2020-2021. 807,360 €.

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

Scientific Production

Total Impact Factor: 150.4960 · Mean Impact Factor: 6.8407

Benito N, Filella D, Mateo J, Fortuna AM, Gutierrez-Alliende JE, Hernandez N, Gimenez AM, Pomar V, Castellvi I, Corominas H, Casademont J, Domingo P. Pulmonary Thrombosis or Embolism in a Large Cohort of Hospitalized Patients With COVID-19. FRONT MED (LAUSANNE). 2020 Aug 25;7:557. doi: 10.3389/fmed.2020.00557. eCollection 2020. PMID: 32984388 Free PMC article. **IF: 3.9**

Berenguer J., Ryan P., Rodriguez-Bano J., Jarrin I., Carratala J., Pachon J., Yllescas M., Arribas J.R., Aznar Munoz E., Pedro Gil Divasson P., Patricia Gonzalez Muniz P., Clara Munoz Aguirre C., Lopez J.C., Ramirez-Schacke M., Gutierrez I., Tejerina F., Aldamiz-Echevarria T., et al. Characteristics and predictors of death among 4035 consecutively hospitalized patients with COVID-19 in Spain (2020) CLIN MICROBIOL INFEC, 26 (11), 1525-1536. **IF: 7.1170**

Casadella M., Santos J.R., Noguera-Julian M., Mican-Rivera R., Domingo P., Antela A., Portilla J., Sanz J., Montero-Alonso M., Navarro J., Masia M., Valcarce-Pardeiro N., Ocampo A., Perez-Martinez L., Pasquau J., Vivancos M.J., Imaz A., Carmona-Oyaga P., Munoz-Medina L., Villar-Garcia J., Barrufet P., Paredes R., Primary resistance to integrase strand transfer inhibitors in Spain using ultrasensitive HIV-1 genotyping (2020) J ANTIMICROB CHEMOTH, 75 (12), 3517-3524. **IF: 5.4390**

Corominas H, Castellví I, Pomar V, Antonijoan R, Mur I, Matas L, Gich I, de Benito N, Laiz A, Castillo D, Villamarin L, Filella D, Millán AM, Quijada MÁ, Puig M, Casademont J, Domingo P. Effectiveness and safety of intravenous tocilizumab to treat COVID-19-associated hyperinflammatory syndrome: Covizumab-6 observational cohort. CLIN IMMUNOL. 2021 Feb;223:108631. doi: 10.1016/j.clim.2020.108631. Epub 2020 Nov 12. PMID: 33189888 Free PMC article. **IF: 3.368**

Del Amo J, Polo R, Moreno S, Díaz A, Martínez E, Arribas JR, Jarrín I, Hernán MA; The Spanish HIV/COVID-19 Collaboration. Incidence and Severity of COVID-19 in HIV-Positive Persons Receiving Antiretroviral Therapy: A Cohort Study. ANN INTERN MED. 2020 Oct 6;173(7):536-541. doi: 10.7326/M20-3689. Epub 2020 Jun 26. PMID: 32589451 Free PMC article. **IF: 21.317**

Dickinson L, Gurjar R, Stöhr W, Bonora S, Owen A, D'Avolio A, Cursley A, Molina JM, Fäetkenheuer G, Vandekerckhove L, Di Perri G, Pozniak A, Richert L, Raffi F, Boffito M; NEAT001/ANRS143 Study Group. Population pharmacokinetics and pharmacogenetics of ritonavir-boosted darunavir in the presence of raltegravir or tenofovir disoproxil fumarate/emtricitabine in HIV-infected adults and the relationship with virological response: a sub-study of the NEAT001/ANRS143 randomized trial. J ANTIMICROB CHEMOTHER. 2020 Mar 1;75(3):628-639. doi: 10.1093/jac/dkz479. PMID: 31754703 **IF: 5.439**

Domingo P, Olaciregui M, González N, De Blas I, Gil L. Effect of glycerol, n, n-dimethylformamide and n-methyl-2-pyrrolidone on rabbit sperm stored at 4 °C and 16 °C. ANIM REPROD. 2019 Nov 14;16(4):887-894. doi: 10.21451/1984-3143-AR2018-0100. PMID: 32368268 Free PMC article. **IF: 0.916**

Domingo P., Villarroya F., Giralt M., Domingo J.C., Potential role of the melanocortin signaling system interference in the excess weight gain associated to some antiretroviral drugs in people living with HIV (2020) INT J OBESITY, 44 (9), 1970-1973. **IF: 4.4190**

Domingo P., Mur I., Pomar V., Corominas H., Casademont J., de Benito N., The four horsemen of a viral Apocalypse: The pathogenesis of SARS-CoV-2 infection (COVID-19) (2020) EBIOMEDICINE, 58. **IF: 5.7360**

Estrada V, Domingo P, Suarez-Lozano I, Gutiérrez F, Knobel H, Palacios R, Antela A, Blanco JR, Refoyo E. Risk of cardiovascular disease in patients with HIV infection undergoing antiretroviral therapy. REV CLIN ESP. 2020 Apr;220(3):149-154. doi: 10.1016/j.rce.2019.05.006. Epub 2019 Nov 2. PMID: 31690452 English, Spanish. **IF: 1.304**

Fernández I, de Lazzari E, Inciarte A, Diaz-Brito V, Milinkovic A, Arenas-Pinto A, Etcheverrry F, García F, Leal L; HIV-PEP Group. Network meta-analysis of post-exposure prophylaxis randomized clinical trials. HIV MED. 2021 Mar;22(3):218-224. doi: 10.1111/hiv.12964. Epub 2020 Oct 27. PMID: 33108035. **IF: 3.556**

Gonzalez-Cordon A., Assoumou L., Camafort M., Domenech M., Guaraldi G., Domingo P., Rusconi S., Raffi F., Katlama C., Masia M., Bernardino J.I., Saumoy M., Pozniak A., Gatell J.M., Martinez E., Switching from boosted PIs to dolutegravir in HIV-infected patients with high cardiovascular risk: 48 week effects on subclinical cardiovascular disease (2020) J ANTIMICROB CHEMOTH, 75 (11), 3334-3343. **IF: 5.4390**

Imaz A, Tiraboschi JM, Niubó J, Martinez-Picado J, Cottrell ML, Domingo P, Chivite I, Negredo E, Schauer A, Van Horne B, Morenilla S, Urrea V, Silva-Klug A, Scevola S, Garcia B, Kashuba ADM, Podzamczer D. Dynamics of the decay of HIV RNA and distribution of bictegravir in the genital tract and rectum in antiretroviral-naïve HIV-1-infected adults treated with bictegravir/emtricitabine/tenofovir alafenamide (Spanish HIV/AIDS Research Network, PreEC/RIS 58). CLIN INFECT DIS. 2020 Sep 18:ciaa1416. doi: 10.1093/cid/ciaa1416. Online ahead of print. PMID: 32945851. **IF: 8.313**

Koethe JR, Lagathu C, Lake JE, Domingo P, Calmy A, Falutz J, Brown TT, Capeau J. Author Correction: HIV and antiretroviral therapy-related fat alterations. NAT REV DIS PRIMERS. 2020 Jul 2;6(1):54. doi: 10.1038/s41572-020-0197-6. PMID: 32616714. **IF: 40.689**

Malo AI, Rull A, Girona J, Domingo P, Fuertes-Martín R, Amigó N, Rodríguez-Borjabad C, Martínez-Micaelo N, Leal M, Peraire J, Correig X, Vidal F, Masana L. Glycoprotein Profile Assessed by 1H-NMR as a Global Inflammation Marker in Patients with HIV Infection. A Prospective Study. J CLIN MED. 2020 May 4;9(5):1344. doi: 10.3390/jcm9051344. PMID: 32375373 Free PMC article. **IF: 3.303**

Mocroft A, Lundgren JD, Rockstroh JK, Aho I, Wandeler G, Nielsen L, Edwards S, Viard JP, Lacombe K, Fätkenheuer G, Guaraldi G, Laguno M, Llibre J, Elinav H, Flamholc L, Gisinger M, Paduta D, Khromova I, Jilich D, Rozplochowski B, Oprea C, Peters L; EuroSIDA study. Influence of Hepatitis C Coinfection and Treatment on Risk of Diabetes Mellitus in HIV-Positive Persons. OPEN FORUM INFECT DIS. 2020 Oct 7;7(12):ofaa470. doi: 10.1093/ofid/ofaa470. eCollection 2020 Dec. PMID: 33409325 Free PMC article. **IF: 3.656**

Navarro J., Gonzalez-Cordon A., Casado J.L., Bernardino J.I., Domingo P., Portilla J., Llibre J.M., Colomer J., Rial-Crestelo D., Vizcarra P., Curran A., Martinez E., Ribera E., Effectiveness of boosted darunavir plus rilpivirine in patients with long-lasting HIV-1 infection: DARIL study (2020) J ANTIMICROB CHEMOTH, 75 (7), 1955-1960. **IF: 5.4390**

Pintado V., Pazos R., Jimenez-Mejias M.E., Rodriguez-Guardado A., Diaz-Pollan B., Cabellos C., Garcia-Lechuz J.M., Lora-Tamayo J., Domingo P., Munez E., Domingo D., Gonzalez-Romo F., Lepe-Jimenez J.A., Rodriguez-Lucas C., Valencia E., Pelegrin I., Chaves F., Pomar V., Ramos A., Alarcon T., Perez-Cecilia E., Linezolid for therapy of Staphylococcus aureus meningitis: a cohort study of 26 patients (2020) INFECT DIS-NOR, 1-8. **IF: 2.4940**

Pomar V, de Benito N, Mauri A, Coll P, Gurguí M, Domingo P. Characteristics and outcome of spontaneous bacterial meningitis in patients with diabetes mellitus. BMC INFECT DIS. 2020 Apr 20;20(1):292. doi: 10.1186/s12879-020-05023-5. PMID: 32312231 Free PMC article. **IF: 2.688**

Roca B; Spanish VACH Cohort Group. Factors Associated with Nonsuppression of HIV Infection in the Spanish VACH Cohort. AIDS RES HUM RETROVIRUSES. 2020 Nov;36(11):927-932. doi: 10.1089/AID.2020.0016. Epub 2020 Aug 27. PMID: 32772710. **IF: 1.823**

Vourli G., Noori T., Pharris A., Porter K., Axelsson M., Begovac J., Cazein F., Costagliola D., Cowan S., Croxford S., Monforte A.D., Delpech V., Diaz A., Girardi E., Gunsenheimer-Bartmeyer B., Hernando V., Leierer G., Lot F., Nunez O., Obel N., Op de Coul E., et al. Human immunodeficiency virus continuum of care in 11 European Union countries at the end of 2016 overall and by key population: Have we made progress? (2020) CLIN INFECT DIS, 71 (11), 2905-2916. **IF: 8.3130**

Yeregui E., Vilades C., Domingo P., Ceausu A., Pacheco Y.M., Veloso S., Inciarte A., Vidal-Gonzalez J., Peraire M., Perpinan C., Falco V., Masip J., Alba V., Vargas M., Marti A., Reverte L., Mallolas J., Vidal F., Peraire J., Rull A., High circulating SDF-1and MCP-1 levels and genetic variations in CXCL12, CCL2 and CCR5: Prognostic signature of immune recovery status in treated HIV-positive patients (2020) EBIOMEDICINE, 62. **IF: 5.7360**

Other Publications

- Corominas H, Castellví I, Domingo P, Casademont J. Facing the SARS-CoV-2 (COVID-19) outbreak with IL-6R antagonists. Eur J Rheumatol. 2020 Aug;7(Suppl 2):S107-S109. doi: 10.5152/eurjrheum.2020.20061. Epub 2020 Apr 17. PMID: 32352361 Free PMC article. No abstract available.

AREA 2 · Genetic, Metabolic and Inflammatory Diseases

Genome Instability and DNA Repair Syndromes

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Peiró Navarro, Montserrat (UAB)
Pujol Calvet, Roser (CIBERER)
Ramírez de Haro, María José (CIBERER)
Rodríguez Santiago, Benjamín (FGS)
Steigerwald, Daniela (UAB)
Tejero Laguna, Eudald (IR)

Main Lines of Research

- Application of next-generation massive sequencing to the diagnosis and discovery of new genes involved in rare genetic diseases and in the prevention and monitoring of rare diseases
- New tools in the diagnosis and therapy of genetic diseases. The objective of this line of research is to develop new diagnostic and therapeutic tools in the Fanconi anaemia disease model, including gene therapy, regenerative medicine and drug repositioning.
- Mechanisms of genomic instability and predisposition to cancer. The objective of this line is to delve into the repair mechanisms of DNA lesions and the biological and clinical consequences of failures in these mechanisms.
- Genetics and molecular biology of Fanconi anaemia. The objective of this line of research is to genetically characterize Fanconi patients as well as to identify new genes involved in the disease and in turn in hereditary breast cancer syndrome and its functions.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Dr. Pia Gallano's team. Genetics Department, Hospital de la Santa Creu i Sant Pau.
- Dr. Isabel Badell. Director, Unit of Hematology, Oncology and Hematopoietic Stem Cell Transplant, Pediatrics Service, Hospital de la Santa Creu i Sant Pau.
- Dr. Enrique Lerma. Anatomic Pathology Department. Hospital de Sant Pau.
- Dr. Oscar Gallego, Georgia Anguera. Medical Oncology Department, Hospital de la Santa Creu i Sant Pau.
- Dr. Pau Riera. Pharmacy Department.

External Collaborations

Main International External Collaborators

- Eunike Velleuer, Department of Pediatrics, Hospital Neuwerk Maria von den Aposteln. Mönchengladbach, Germany.
- Jonathan Schwartz. Rocket Pharma, New York.
- Thomas Helleday. Karoliska Institut, Stockholm,
- Parinda Mehta. Division of Bone Marrow Transplantation and Immune Deficiency, Cincinnati Children's Hospital Medical Center, Department of Pediatrics, College of Medicine, University of Cincinnati, Cincinnati, OH, USA.

Main National External Collaborators

- Juan A. Bueren. CIEMAT, Madrid.
- Luis A. Pérez Jurado. UPF, Barcelona.
- Joaquín Dopazo. CIPF, València.
- Cristina Diaz de Heredia. H. Vall d'Hebron, Barcelona.
- Albert Català. H. Sant Joan de Déu, Barcelona.
- Judith Balmaña. H. Vall d'Hebron, Barcelona.
- Diego Arango. VHIR, Barcelona
- Jose Luís Garcia. GENYO, Granada
- Ramón Garcia-Escudero. CIEMAT, Madrid

Collaborating External Institutions of the research group

- Bellvitge Institute for Biomedical Research (IDIBELL), L'Hospitalet del Llobregat.
- Centro Andaluz de Biología Molecular y Medicina Regenerativa (CABIMER).
- Hospital Universitari Vall d'Hebron; Vall d'Hebron Institute of Oncology (VHIO); Vall d'Hebron Institute of Research (VHIR); Universitat Autònoma de Barcelona, Barcelona, Spain.
- Human Cancer Genetics Program, Spanish National Cancer Research Centre (CNIO), Madrid, Spain.

- Unit of Molecular Bases of Genetic Risk and Genetic Testing, Department of Preventive and Predictive Medicine, Fondazione IRCCS.
- Rocket Pharma, New York.
- Karoliska Institut, Stockholm.
- Cincinnati Children's Hospital Medical Center, Cincinnati.
- Heinrich Heine University, Düsseldorf, Germany.
- Cancer and Blood Diseases Institute, Cincinnati Children's Hospital Medical Center, Cincinnati.
- Hospital Medical Center, Cincinnati.
- Dana Farber Cancer Institute, Boston Chindren's Hospital, Boston, USA.

Active Grants

- Jordi Surrallés Calonge. Grup de Síndromes d'Inestabilitat Genòmica i Reparació del DNA. 2017 SGR 01191. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Eudald Tejero Laguna. Desarrollo y diseño de herramientas bioinformáticas para el tratamiento de datos de secuenciación masiva en el ámbito biomédico. FPU17/04141. Ministerio de Educación, Cultura y Deporte. Duration: 2018-2024. 123,184.80 €.
- Jordi Surrallés Calonge. La ruta anemia de Fanconi/BRCA: investigación genética y terapéutica. RTI2018-098419-B-I00. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 260,000 €.
- Jordi Surrallés Calonge. Gefitinib/Afatinib therapy for Head and Neck Squamous Cell Carcinomas in Fanconi anemia. FARF 2019. Fanconi Anemia Research Fund. Duration: 2019-2022. 137,091 €.
- Jordi Surrallés Calonge. Centro de Investigación Biomédica en Red de Enfermedades Raras. CIBERER. CB06/07/0023. Ministerio de Sanidad y Política Social. Duration: 2019-2020.
- Jordi Surrallés. The mechanism of synthetic lethality between BRCA1/2 and Fanconi anaemia E3 ligase activity. GNT1156343. Funding agency - The (Australian) National Health and Medical Research Council (NHMRC). Duration: 2019-2021. Amount awarded Australian Dollars 773,643.80 $ / 493,739 € (Co-IP).
- Jordi Surrallés. Análisis de mosaicismo genético mediante NGS. Aplicación en patologías raras y en modelos celulares y animales por edición genética. Ref. ER19P7AC7452. ACCI18-10 CIBERER Acciones Cooperativas y Complementarias Intramurales. Duration: 2019-2020. 13.218,75 €.
- Jordi Surrallés. ICREA Academia Programe. Fundació Institut Català de Recerca i Estudis Avançats. Call 2018. Duration: 2019-2023. 200,000 €.
- Jordi Surrallés. La ruta anemia de Fanconi/BRCA: investigación genética y terapéutica (Ref. RTI2018-098419-B-I00). Programa Estatal de I+-D+i Orientada a los Retos de la Sociedad. Ministerio de Ciencia, Innovación y Universidades. Conv. 2018. Duration: 2019-2021. 314,600 €.
- Jordi Surrallés, Jordi Minguillón. Validació de hits de FANCONINIB: Reparació del DNA com a diana terapéutica del càncer. Convocatòria d'ajuts d'Indústria del Coneixement per a l'any 2019. IU68-017261. Duration: 2019-2020. 20,000 €.
- Jordi Surrallés, Jordi Minguillón. Inhibitors of DNA damage repair for cancer therapy. Proof of Concept UAB. Duration: 2019-2020. 40,000 €.

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

Grants Awarded in 2020

- Jordi Minguillón Pedreño. Fanconinib hit validation: targeting DNA repair in cancer therapeutics. 2019 LLAV 00044. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2020-2021. 20,000 €.
- Benjamin Rodríguez Santiago. Catalan Interhospital Network of Genetic Variants to Improve Genetic Diagnosis in Rare Diseases. MARATO 202040-33. Fundació La Marató de TV3. Duration: 2021-2023. 21,000 €.
- Jordi Minguillón Pedreño. FANCONINIB: a new inhibitor of DNA damage repair for cancer therapy. CaixaImpulse Vadlidate 2020. Obra Social "La Caixa". Duration: 2020-2022. 70,000 €.
- Debora Cavero Moreno. La ruta anemia de Fanconi/BRCA: investigación genética y terapéutica. PRE2019-091044. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2024. 95,450 €.

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

Awards

- ICREA Academia Award 2018, (2019-2023). 200.000 euros.

Doctoral Theses

- Pau Riera. Marcadores farmacogenéticos de respuesta/resistencia a las terapias biológicas (anti-EGFR) en cáncer colorrectal. Institut de Recerca Sant Pau. Directors: David Paez; Jordi Surrallés. Date of defense: 12/12/2020.

Transfer Products

Agreements

- Agreement with Boston Hospital/Dana Farber Cancer Institut. 2020.
- Services agreement with Rocket Pharmaceuticals Inc. (New York). August 2020-2034.
- Services agreement with Rocket Pharmaceuticals Inc. (New York). November 2020.
- The group hosts the Laboratory of Diagnosis of Chromosome Fragility of the Universitat Autònoma de Barcelona. http://safcro.uab.es. We performe service under invoice or signed agreement to more that 100 Spanish and European public and private hospitals and diagnostic and pharma companies.

Scientific Production

Total Impact Factor: 57.0490 · Mean Impact Factor: 5.7449

Bogliolo M., Pujol R., Aza-Carmona M., Munoz-Subirana N., Rodriguez-Santiago B., Casado J.A., Rio P., Bauser C., Reina-Castillon J., Lopez-Sanchez M., Gonzalez-Quereda L., Gallano P., Catala A., Ruiz-Llobet A., Badell I., Diaz-Heredia C., Hladun R., Senent L., et al. Optimised molecular genetic diagnostics of Fanconi anaemia by whole exome sequencing and functional studies (2020) J MED GENET, 57 (4), 258-268. **IF: 4.9430**

Montanuy H, Camps-Fajol C, Carreras-Puigvert J, Häggblad M, Lundgren B, Aza-Carmona M, Helleday T, Minguillón J, Surrallés J. High content drug screening for Fanconi anemia therapeutics. ORPHANET J RARE DIS. 2020 Jun 30;15(1):170. doi: 10.1186/s13023-020-01437-1. **IF: 3.71**

Montanuy H., Martinez-Barriocanal A., Antonio Casado J., Rovirosa L., Ramirez M.J., Nieto R., Carrascoso-Rubio C., Riera P., Gonzalez A., Lerma E., Lasa A., Carreras-Puigvert J., Helleday T., Bueren J.A., Arango D., Minguillon J., Surralles J., Gefitinib and Afatinib Show Potential Efficacy for Fanconi Anemia-Related Head and Neck Cancer (2020) CLIN CANCER RES, 26 (12), 3044-3057. **IF: 10.1070**

Moreno O. M., Sánchez A. I., Herreño A., Giraldo G., Suárez F., Prieto J.C., Shaia Clavijo A., Olaya M., Vargas Y., Benítez J., Surallés Jordi, Rojas A. Phenotypic Characteristics and Copy Number Variants in a Cohort of Colombian Patients with VACTERL Association. MOL SYNDROMOL. Published online: November 11, 2020. DOI: 10.1159/000510910. **IF: 1.81**

Nicoletti E., Rao G., Bueren J.A., Rio P., Navarro S., Surralles J., Choi G., Schwartz J.D., Mosaicism in Fanconi anemia: concise review and evaluation of published cases with focus on clinical course of blood count normalization (2020) ANN HEMATOL, 99 (5), 913-924. **IF: 2.9040**

Peña-Chilet M, Roldán G, Perez-Florido J, Ortuño FM, Carmona R, Aquino V, Lopez-Lopez D, Loucera C, Fernandez-Rueda JL, Gallego A, García-Garcia F, González-Neira A, Pita G, Núñez-Torres R, Santoyo-López J, Ayuso C, Minguez P, Avila-Fernandez A, Corton M, Moreno-Pelayo MÁ, Morin M, Gallego-Martinez A, Lopez-Escamez JA, Borrego S, Antiñolo G, Amigo J, Salgado-Garrido J, Pasalodos-Sanchez S, Morte B; Spanish Exome Crowdsourcing Consortium, Carracedo Á, Alonso Á, Dopazo J. CSVS, a crowdsourcing database of the Spanish population genetic variability. NUCLEIC ACIDS RES. 2020 Sep 29:gkaa794. doi: 10.1093/nar/gkaa794. Online ahead of print. **IF: 11.5**

Pino-Barrio M.J., Gimenez Y., Villanueva M., Hildenbeutel M., Sanchez-Dominguez R., Rodriguez-Perales S., Pujol R., Surralles J., Rio P., Cathomen T., Mussolino C., Bueren J.A., Navarro S., TALEN mediated gene editing in a mouse model of Fanconi anemia (2020) SCI REP-UK, 10 (1). **IF: 3.998**

Ramirez M.J., Minguillon J., Loveless S., Lake K., Carrasco E., Stjepanovic N., Balmana J., Catala A., Mehta P.A., Surralles J., Chromosome fragility in the buccal epithelium in patients with Fanconi anemia (2020) CANCER LETT, 472, 1-7. **IF: 7.3600**

Ramos-Campoy O., Antonell A., Falgas N., Balasa M., Borrego-Ecija S., Rodriguez-Santiago B., Datta D., Armengol L., Fernandez-Villullas G., Bosch B., Olives J., Munoz-Garcia C., Castellvi M., Tort-Merino A., Sanchez-Valle R., Llado A., Screening of dementia genes by whole-exome sequencing in Spanish patients with early-onset dementia: likely pathogenic, uncertain significance and risk variants (2020) NEUROBIOL AGING, 93, e1-e9. **IF: 4.3470**

Riera P., Rodríguez-Santiago B., Lasa A., Gonzalez-Quereda L., Martín B., Salazar J., Sebio A., Virgili A.C., Minguillón M. , Camps C., Surrallés J. and Páez D. Novel Somatic Genetic Variants as Predictors of Resistance to EGFR-Targeted Therapies in Metastatic Colorectal Cancer Patients. CANCERS 2020, 12, 2245; doi:10.3390/cancers12082245. **IF: 6.37**

Diffusion Activities

Dissemination to the Society

- Jordi Surrallés. Interview at the radio program "La nit dels ignorants". La tecnologia permet llegir el mapa genètic de cadascú, conformat per 3.000 milions de lletres. 18 February 2020. https://www.ccma.cat/catradio/alacarta/la-nit-dels-ignorants-3-0/la-tecnologia-permet-llegir-el-mapa-genetic-de-cadascu-conformat-per-3-000-milions-de lletres/audio/1063997/#.XkuKsryN584.twitter

Scientific Dissemination Activities

- Surrallés J. Clinical consequences of BRCA2 hypomorphism. Presentación oral en el Internacional Fanconi anemia Research Symposium. Virtual, September 2020.
- Jordi Surrallés. Organiser of the Scientific Retreat 2020. Institut de Recerca Hospital Sant Pau (online). 17 December 2020.

AREA 3

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iseases

AREA 3 · Haematological and Oncological Diseases

Clinical Oncology

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Maroto Rey, José Pablo (FGS)
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Martín Richard, Marta (FGS)
Menéndez Cuervo, Dulce María (IR)
Molina Bayona, Sílvia (IR)
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Paez López-Bravo, David (FGS)
Ramon y Cajal Asensio, Teresa (FGS)
Ribas Carbonell, Romina (IR)
Roca Solà, Marc (IR)
Salazar Blanco, Juliana (IR)
Sebio García, Ana (FGS)
Serra López, Jorgina (FGS)
Tibau i Martorell, Ariadna (FGS)
Tijeras Pérez, Sandra (IR)
Vañó Sempere, Lourdes C. (IR)
Virgili Manrique, Anna Cristina (FGS)

Main Lines of Research

Clinical Research

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

Translational Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Oncogenesis and Antitumour Drugs (Dr. Ramon Mangues).
- Molecular Pathology of Urologic Cancer (Dr. F. Algaba).
- Genetic Diseases (Dra. A. Lasa and Dr. J. Surrallés).
- Breast Cancer (Dr. E. Lerma).

External Collaborations

- Tumoural progression modelling group at the Biomedical Research Institute (IRB) (Dr. A. Nebreda).
- Methylation and resistance to chemotherapy in ovarian cancer (Dr. M. Esteller).
- CIBERONC; Member of the Breast Cancer Program.

Active Grants

- Ana Sebio García. Evaluación de las alteraciones de la distrofina y proteínas afines como factores pronósticos en pacientes afectos de leiomiosarcoma. PI17/00143. Instituto de Salud Carlos III. Duration: 2018-2021. 61,500 €.
- Agustí Barnadas Molins. Grup de recerca clínica en oncologia. 2017 SGR 01084. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Antonio López Pousa. Desarrollo clínico nuevo sistema de liberación local de fármacos. RTC-2017-6347-1. Ministerio de Economía y Competitividad. Duration: 2018-2021. 132,186.25 €.
- Daniel Escuín Borràs. Investigación del papel de los miRNAs y snoRNAs circulantes como marcadores surrogados del estatus de los ganglios linfáticos en pacientes con cáncer de mama. PI19/00362. Instituto de Salud Carlos III. Duration: 2020-2022. 109,000 €.
- Andrés Barba Joaquín. Estudio prospectivo en búsqueda de marcadores genéticos predictivos de respuesta y/o toxicidad a quimioterapia y radioterapia en carcinoma de pulmón de célula pequeña. SCBO 2019. Societat Catalano-Balear d'Oncologia. Duration: 2019-2022. 5,454.55 €.

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

Grants Awarded in 2020

- Jorgina Serra López. Impacto de una intervención enfermera en el manejo de pacientes con cáncer de pulmón en curso de tratamiento con inmunoterapia. PR-405/2020. Fundació Infermeria i Societat. Duration: 2021-2023. 3,900 €.

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

Doctoral Theses

- Pau Riera Armengol. Genetic markers of efficacy and toxicity in colorectal cancer. Directors: David Paez; Jordi Surrallés. Date of defense: 23/09/2020.

Scientific Production

Total Impact Factor: 405.601 · Mean Impact Factor: 9.657

Bademci R., Bollo J., Ramon y Cajal T., Martinez M.C., Hernandez M.P., Targarona E.M., Presentation and Follow-up of Familial Adenomatous Polyposis: Differences Between APC and MUTYH Mutations Presentación y seguimiento de poliposis adenomatosa familiar (PAF): diferencias entre las mutaciones APC y MUTYH (2020) CIR ESPAN, 98 (8), 465-471. **IF: 1.3230**

Balana C., Vaz M.A., Manuel Sepulveda J., Mesia C., Del Barco S., Pineda E., Munoz-Langa J., Estival A., de Las Penas R., Fuster J., Girones R., Navarro L.M., Gil-Gil M., Alonso M., Herrero A., Peralta S., Olier C., Perez-Segura P., Covela M., Martinez-Garcia M., Berrocal A., Gallego O., Luque R., Perez-Martin F.J., Esteve A., Munne N., Domenech M., Villa S., Sanz C., Carrato C., A phase II randomized, multicenter, open-label trial of continuing adjuvant temozolomide beyond 6 cycles in patients with glioblastoma (GEINO 14-01) (2020) NEURO-ONCOLOGY, 22 (12), 1851-1861. **IF: 10.2470**

Brausi M., Hoskin P., Andritsch E., Banks I., Beishon M., Boyle H., Colecchia M., Delgado-Bolton R., Hockel M., Leonard K., Lovey J., Maroto P., Mastris K., Medeiros R., Naredi P., Oyen R., de Reijke T., Selby P., Saarto T., Valdagni R., Costa A., Poortmans P., ECCO Essential Requirements for Quality Cancer Care: Prostate cancer (2020) CRIT REV ONCOL HEMAT, 148. **IF: 5.8330**

Carrato C., Alameda F., Esteve-Codina A., Pineda E., Arpi O., Martinez-Garcia M., Mallo M., Gut M., Lopez-Martos R., Barco S.D., Ribalta T., Capellades J., Puig J., Gallego O., Mesia C., Munoz-Marmol A.Ma., Archilla I., Arumi M., Blanc J.M., Bellosillo B., Menendez S., Esteve A., Bague S., Hernandez A., Craven-Bartle J., Fuentes R., Vidal N., Aldecoa I., de la Iglesia N., Balana C., Glioblastoma TCGA mesenchymal and IGS 23 tumors are identifiable by ihc and have an immune-phenotype indicating a potential benefit from immunotherapy (2020) CLIN CANCER RES, 26 (24), 6600-6609. **IF: 10.1070**

Chowdhury S., Bjartell A., Lumen N., Maroto P., Paiss T., Gomez-Veiga F., Birtle A., Kramer G., Kalinka E., Spaeth D., Feyerabend S., Matveev V., Lefresne F., Lukac M., Wapenaar R., Costa L., Real-World Outcomes in First-Line Treatment of Metastatic Castration-Resistant Prostate Cancer: The Prostate Cancer Registry (2020) TARGET ONCOL, 15 (3), 301-315. **IF: 4.0360**

Cotes Sanchis A., Gallego J., Hernandez R., Arrazubi V., Custodio A., Cano J.M., Aguado G., Macias I., Lopez C., Lopez F., Visa L., Garrido M., Martinez Lago N., Fernandez Montes A., Limon M.L., Azkarate A., Pimentel P., Reguera P., Ramchandani A., Cacho J.D., Martin Carnicero A., Granja M., Martin Richard M., Hernandez Perez C., Hurtado A., Serra O., Buxo E., Vidal Tocino R., Jimenez-Fonseca P., Carmona-Bayonas A., Second-line treatment in advanced gastric cancer: Data from the Spanish AGAMENON registry (2020) PLOS ONE, 15 (7 July), e0235848-. **IF: 2.7400**

Earl J., Galindo-Pumarino C., Encinas J., Barreto E., Castillo M.E., Pachon V., Ferreiro R., Rodriguez-Garrote M., Gonzalez-Martinez S., Ramon y Cajal T., Diaz L.R., Chirivella-Gonzalez I., Rodriguez M., de Castro E.M., Garcia-Seisdedos D., Munoz G., Rosa J.M.R., Marquez M., Malats N., Carrato A., A comprehensive analysis of candidate genes in familial pancreatic cancer families reveals a high frequency of potentially pathogenic germline variants (2020) EBIOMEDICINE, 53. **IF: 5.7360**

Etan T., Amir E., Tibau A., Yerushalmi R., Moore A., Shepshelovich D., Goldvaser H., National comprehensive cancer network recommendations for drugs without US food and drug administration approval in metastatic breast cancer: A cross-sectional study (2020) CANCER TREAT REV, 91. **IF: 8.8850**

Feliu J., Garcia-Carbonero R., Capdevila J., Guasch I., Alonso-Orduna V., Lopez C., Garcia-Alfonso P., Castanon C., Sevilla I., Cerezo L., Conill C., Quintana-Angel B., Sanchez M.E., Ghanem I., Martin-Richard M., Lopez-Gomez M., Leon A., Caro M., Fernandez T., Maurel J., VITAL phase 2 study: Upfront 5-fluorouracil, mitomycin-C, panitumumab and radiotherapy treatment in nonmetastatic squamous cell carcinomas of the anal canal (GEMCAD 09-02) (2020) CANCER MED-US, 9 (3), 1008-1016. **IF: 3.4910**

Gafter-Gvili A., Tibau A., Raanani P., Shepshelovich D., Safety-Related Postmarketing Modifications of Drugs for Hematological Malignancies (2020) ACTA HAEMATOL-BASEL, 143 (1), 73-77. **IF: 1.1960**

Gallardo E., Medina J., Sanchez J.C., Viudez A., Grande E., Porras I., Ramon y Cajal T., Trigo J., Iglesias L., Capdevila J., SEOM clinical guideline thyroid cancer (2019) (2020) CLIN TRANSL ONCOL, 22 (2), 223-235. **IF: 2.7370**

Garcia-Campelo R., Arrieta O., Massuti B., Rodriguez-Abreu D., Granados A.L.O., Majem M., Vicente D., Lianes P., Bosch-Barrera J., Insa A., Domine M., Reguart N., Guirado M., Sala M.A., Vazquez-Estevez S., Caro R.B., Drozdowskyj A., Verdu A., Karachaliou N., Molina-Vila M.A., Rosell R., Combination of gefitinib and olaparib versus gefitinib alone in EGFR mutant non-small-cell lung cancer (NSCLC): A multicenter, randomized phase II study (GOAL) (2020) LUNG CANCER, 150, 62-69. **IF: 4.7020**

Gomez de Liano Lista A., van Dijk N., de Velasco Oria de Rueda G., Necchi A., Lavaud P., Morales-Barrera R., Alonso Gordoa T., Maroto P., Ravaud A., Duran I., Szabados B., Castellano D., Giannatempo P., Loriot Y., Carles J., Anguera Palacios G., Lefort F., Raggi D., Gross Goupil M., Powles T., Van der Heijden M.S., Clinical outcome after progressing to frontline and second-line Anti–PD-1/PD-L1 in advanced urothelial cancer[Formula presented] (2020) EUR UROL, 77 (2), 269-276. **IF: 17.9470**

Gonzalez-del-Alba A., Arranz J.A., Bellmunt J., Maroto J.P., Fernandez-Calvo O., Valderrama B.P., Gonzalez-Billalabeitia E., Mendez-Vidal M.J., Cassinello J., Romero-Laorden N., Climent M.A., Puente J., Pelaez I., Lazaro-Quintela M., Gallardo E., Suarez C., Latest progress in molecular biology and treatment in genitourinary tumours (2020) CLIN TRANSL ONCOL, 22 (12), 2175-2195. **IF: 2.7370**

Gonzalez-Santiago S., Ramon y Cajal T., Aguirre E., Ales-Martinez J.E., Andres R., Balmana J., Grana B., Herrero A., Llort G., Gonzalez-del-Alba A., SEOM clinical guidelines in hereditary breast and ovarian cancer (2019) (2020) CLIN TRANSL ONCOL, 22 (2), 193-200. **IF: 2.7370**

Gridelli C., Ciuleanu T., Domine M., Szczesna A., Bover I., Cobo M., Kentepozidis N., Zarogoulidis K., Kalofonos C., Kazarnowisz A., Korozan M., de las Penas R., Majem M., Chella A., Griesinger F., Bournakis E., Sadjadian P., Kotsakis A., Chinet T., Syrigos K.N., Correale P., Gallou C., Jamet J.-M., Vetsika E.-K., Kosmatopoulos K., Georgoulias V., Clinical activity of a htert (vx-001) cancer vaccine as post-chemotherapy maintenance immunotherapy in patients with stage IV non-small cell lung cancer: final results of a randomised phase 2 clinical trial (2020) BRIT J CANCER, 122 (10), 1461-1466. **IF: 5.7910**

Gronchi A., Palmerini E., Quagliuolo V., Martin Broto J., Lopez Pousa A., Grignani G., Brunello A., Blay J.-Y., Tendero O., Diaz Beveridge R., Ferraresi V., Lugowska I., Merlo D.F., Fontana V., Marchesi E., Braglia L., Donati D.M., Palassini E., Bianchi G., Marrari A., Morosi C., Stacchiotti S., Bague S., Coindre J.M., Dei Tos A.P., Picci P., Bruzzi P., Casali P.G., Neoadjuvant chemotherapy in high-risk soft tissue sarcomas: Final results of a randomized trial from Italian (ISG), Spanish (GEIS), French (FSG), and Polish (PSG) sarcoma groups (2020) J CLIN ONCOL, 38 (19), 2178-2186. IF: **32.9560**

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Diffusion Activities

Meeting Organization

- Immunotherapy for Oncologic Patients. Barcelona, 5 November 2020.
- Multidisciplinary Meeting in Lung Cancer. Barcelona, 20 November.

Communications

- Bujosa A, Molto C, Hwang TJ, Vokinger, KN, Tapia JC, Gich I, Templeton AJ, Barnadas A, Amir E, Tibau A. Factors associated with change in the magnitude of clinical benefit of anti-cancer drugs in the post marketing period. American Society of Clinical Oncology Annual Meeting. June 2020.
- Tapia JC, Gavira J, Riudavets M, Ponce OJ, Gich I, Barnadas A, Majem M. Clinical characteristics and 28-day mortality among patients with solid cancers and COVID-19 in a tertiary hospital. European Society for Medical Oncology Annual Meeting. October 2020.
- Bujosa A, Moltó C, Tapia JC, Gich I, Barnadas A, Amir E, Tibau A. Factors associated with change in overall survival and quality of life between time of approval and post-marketting among anti-cancer therapies. European Society for Medical Oncology Annual Meeting. October 2020.
- Blanco R, Nadal E, Loutfi S, Dómine M, Saldanya J, Alfaro J, González Larriba JL, Campos B, Gironés R, Hidalgo J, Barba A, Majem M, Márquez D, Martinez M, Olaverri A, Balsalobre J, Juan O. Survival, Quality of life (QoL) and Geriatric Outcomes of Elderly Patients (pt) with Advanced Non small-cell Lung Cancer (NSCLC), treated with Pembrolizumab (P) in the first line setting. PEBEL. GECP 16/06. European Society for Medical Oncology Annual Meeting. October 2020.

AREA 3 · Haematological and Oncological Diseases

Oncogenesis and Antitumour Drugs

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Seira Oriach, Clara (IR)
Unzueta Elorza, Ugutz (IR)

Main Lines of Research

- Development of novel animal models of disseminated disease in solid tumours and haematological neoplasms for the mechanistic study of metastases and preclinical drug development.
- Development of protein-only nanoparticles or drug-nanoconjugates for targeted delivery of anticancer agents, aiming at the selective killing of metastasis stem cells and induction of antimetastatic effects in the absence of systemic toxicity.
- Development of protein-based drug delivery systems for the sustained release of cell-targeted polypeptide nanoparticles and nanoconjugates.

Scientific Challenges

- Obtain funding to ensure stable employment of senior researchers, attract postdoctoral fellows and reinforce current collaborations with clinicians.
- Develop molecular markers for therapeutic decision-making and personalized medicine.
- Develop anticancer drugs selectively targeted at cancer stem cells to achieve antitumor activity and antimetastatic effect in chemotherapy-resistant tumours, in solid tumours and haematological neoplasias.
- Enhance international collaboration and participation in EU networks and industrial projects.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Drs. Isolda Casanova, Víctor Pallarès, Ugutz Unzueta and Doctoral students Aïda Falgàs and Rita Sala collaborate in the project Implicación de la vía CXCR4/CXCL12/CXCR7 en la resistencia, recidiva y fenotipo de célula madre tumoral en leucemia mieloide aguda. PI17/01246, IP: Jordi Sierra. Instituto de Salud Carlos III. Duration: 2018-2020. 219,000 €.
- Drs. Irene Arroyo, Lorena Alba-Castellón, Ugutz Unzueta and Doctoral student Rita Sala collaborate with the Otorhinolaryngology Service (led by Drs. Miquel Quer and Xavier León) in the Project Estudio de factores pronóstico en cáncer de cabeza y cuello, PI17/00584, IP: Miquel Quer, 111.000 € (2018-2020), and with the Pharmacy Service in the project SP181117001, Roche Pharma, IP: Maria Antònia Mangues. 30,000 €.
- Dr. Patricia Álamo and Doctoral student Rita Sala collaborate with the research groups of the Pharmacy Service (led by Dr. Maria Antònia Mangues), the Pathological Anatomy Service (led by Dr. Enrique Lerma and Dr. Alberto Gallardo) and the Medical Oncology Service (led by Drs. Agustí Barnadas and Antonio López-Pousa), and with the IIB-Sant Pau groups headed by Àlex Bayés and Marta Valle in the project Targeted nanocongugates for the selective elimination of stem cells in disseminated cancer. PIE15/00028 - IP: Ramon Mangues. Instituto de Salud Carlos III. Duration: 2016-2019. 423,000 €.

External Collaborations

National Collaborations

- Antonio Villaverde, Departament de Microbiologia Aplicada, Universitat Autònoma de Barcelona (UAB).
- Eduard Batlle, Biomedical Research Institute (IRB) and Barcelona Scientific Park (PCB).
- Ramon Mangues is a Member of the Executive Committe and Coordinator of Clinical Translation of the Network Consortium for Biomedical Research in Biomaterials, Bioengeeniering and Nanomedicine (CIBER-BBN).
- Ramon Mangues is a Panelist of the Comisión Científico-Técnica de Biotecnología of the Agencia Estatal de Investigación de España.
- OncoCat. Member of the Catalonian Cancer Research Network. Xarxa ConnectEU, Biocat, Generalitat de Catalunya.
- NanoBioMed. Member of the Catalonian Network on Nanobiotechnology, Xarxa Connect-EU. Biocat.

International Collaborations

- Jason P. Holland, Department of Chemistry, University of Zürich, Switzerland.
- Jan Paul Medema, University of Amsterdam, Center for Experimental and Molecular Medicine and Oncode Institute, Amsterdam, Netherlands.
- Arne Östman, Cancer Center Karolinska, Karolinska Institutet, Stockholm (Sweden).
- Alberto Bardelli, University of Torino, Medical School, Turin (Italy).
- Our group is a Member of the COST Action CA17140. Nano2Clinic. Cancer Nanomedicine - from the bench to the bedside (Nano2Clinic) (http://www.cost.eu/actions/CA17140)
- Ramon Mangues collaborates with the French Institut National du Cancer (INCa). He is a Member of the Scientific Evaluation Commit-

tee of the Translational Cancer Research Programme (PRT-K) since 2016, Ministry of Health (DGOS).

- ATMP-EATRIS, European Union. Member of the Working Group on Advanced therapies and biologicals of ATMP (Advanced Therapy Medicinal Products), EATRIS (European Insfrastructure for Translational Medicine) Network.
- ETP Nanomedicine, European Union, Member of the European Technology Platform on Nanomedicine.
- TME-AACR member. Member of the Tumor Microenvironment Working Group, American Association for Cancer Research (AACR
- TME-AACR member. Member of the Tumor Microenvironment Working Group, American Association for Cancer Research (AACR).

Active Grants

- Ramon Mangues Bafalluy. Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina. CIBERBBN. CB06/01/1031. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 782,193.87 €.
- Ramon Mangues Bafalluy. Targeted nanocongugates for the selective elimination of stem cells in disseminated cancer. PIE15/00028. Instituto de Salud Carlos III. Duration: 2016-2020. 423,912 €.
- Rita Sala Faig. Contratos predoctorales de formación en investigación en salud 2016. FI16/00017. Instituto de Salud Carlos III. Duration: 2017-2020. 82,400 €.
- Aïda Falgàs Comamala. Avaluació de l'activitat antitumoral de nous nanoconjugats dirigits al receptor CXCR4 en Limfoma Difús de Cèl·lules Grans B (LDCGB). 2017 FI_B 00680. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2020. 60,809.20 €.
- Olivia Cano Garrido. Subprograma Juan de la Cierva - Formación 2016. FJCI-2016-31206. Ministerio de Economía y Competitividad. Duration: 2018-2020. 50,000 €.
- Ramon Mangues Bafalluy. Grup d'Oncogènesi i Antitumorals (GOA). 2017 SGR 865. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 35,200 €.
- Ramon Mangues Bafalluy. NANOTRAC. Desarrollo de un nuevo medicamento selectivo con potente actividad antimetastática. RTC-2017-6125-1. Ministerio de Economía y Competitividad. Duration: 2018-2021. 220,063.21 €.
- Ramon Mangues Bafalluy. Émbolos tumorales circulantes hCXCR4/SerpinE1 en el pronóstico del cáncer de cabeza y cuello. PI17/00584. Instituto de Salud Carlos III. Duration: 2018-2021. 90,000 €.
- Ramon Mangues Bafalluy. Implicación de la vía CXCR4/CXCL12/CXCR7 en la resistencia, recidiva y fenotipo de célula madre de la leucemia mieloide aguda. PI17/01246. Instituto de Salud Carlos III. Duration: 2018-2021. 108,000 €.
- Ramon Mangues Bafalluy. Nanopartículas Dirigidas en Combinación para la Eliminación Selectiva de Células Madre Mestatáticas y Fibroblastos Asociados a Metástasis en Cáncer Colorectal. PI18/00650. Instituto de Salud Carlos III. Duration: 2019-2021. 225,750 €.
- Pau Riera Armengol. Identificación de marcadores farmacogenéticos de respuesta/resistencia a las terapias biológicas (anti-EGFR) en cáncer colorrectal. CM18/00207. Instituto de Salud Carlos III. Duration: 2019-2020. 64,926.17 €.
- Elisa Rioja Blanco. Papel de CXCR4 en la diseminación metastásica del carcinoma escamoso de cabeza y cuello. 2018 FI_B 00320. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2018-2021. 63,189.92 €.
- Ugutz Unzueta Elorza. Improved colorectal cancer therapy by targeting the CXCR4 receptor using functional protein nanoparticles with enhanced cytosolic release. CP19/00028. Instituto de Salud Carlos III. Duration: 2020-2024. 202,500 €.
- Luis Miguel Carrasco Díaz. Nanopartículas dirigidas en combinación para la eliminación selectiva de células madre mestatáticas CXCR4+ en Cáncer Colorectal. FI19/00148. Instituto de Salud Carlos III. Duration: 2020-2023. 82,400 €.
- Ugutz Unzueta Elorza. Improved colorectal cancer therapy by targeting the CXCR4 receptor using functional protein nanoparticles with enhanced cytosolic release. CP19/00028(P). Instituto de Salud Carlos III. Duration: 2020-2023. 40,000 €.
- Ramon Mangues Bafalluy. Humanized nanomedicines selectively killing CXCR4+ cancer cells for Acute Myeloid Leukemia therapy. MARATO 201941-30. Fundació La Marató de TV3. Duration: 2020-2023. 144,924.35 €.
- Jaime Kulisevsky/Jordi Surrallés. ITEMAS Plataforma de Innovación en Tecnologías Médicas y Sanitarias. Plataformas de apoyo a la investigación 2017. PT17/0005/0015. Instituto de Salud Carlos III. Duration: 2018-2020. 91,500 €.
- Unidad de Nanotoxicologia. NANBIOSIS. Centro de Investigación en Red en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN). MINECO. Duration: 2018-2020. 18,000 €.
- Ramón Mangues. Nanotrac. BBN-TRF17. Humanized antitumoral nanodrug for the treatment of CXCR4-positive cancers (CIBER-BBN Technology Transfer Program (coordinated project). CIBER-BBN and Nanoligent SL. Duration: 2017-2019. 35,000 €.

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

Grants Awarded in 2020

- Ugutz Unzueta Elorza. Conjugación dirigida de nanomedicinas proteicas inteligentes para la mejora de la terapia selectiva del cáncer metastásico de colon. PI20/00400. Instituto de Salud Carlos III. Duration: 2021-2023. 142,000 €.
- Lorena Alba Castellón. Cancer-Associated Fibroblast-Targeted Nanoparticles to Improve Antimetastatic Therapy in Colorectal Cancer. POSTDOC AECC 2020. Asociación Española Contra el Cáncer. Duration: 2020-2022. 85,000 €.

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

Doctoral Theses

- Rita Sala Faig. Targeted drug delivery for the selective elimination of CXCR4+ cancer cells in metastatic colorectal cancer model. Universitat Autònoma de Barcelona. Director: Ramon Mangues Bafalluy. Date of defense: 21/12/2020

Patents

- Antonio Villaverde, Esther Váquez, Ugutz Unzueta, Ramon Mangues, María Virtudes Céspedes, Isolda Casanova, Héctor López Laguna. Therapeutic nanoconjugates based on Stefin A. EP19382031.3. European Patent. 26/12/2020
- Ester Vázquez, Antonio Villaverde, Naroa Serna, Juan Cedano, Olivia Cano, Ugutz Unzueta, Ramon Mangues, Patricia Álamo, Scaffold proteins and therapeutic nanoconjugates based on nidogen. PCT/EP2018/069303. European Patent. 18/02/2020

- Antonio Villaverde, Esther Vázquez, Héctor López, Julieta Sánchez, Ramon Mangues, Patricia Alamo. Protein nano- or microparticles as artificial inclusion bodies. WO2020208065A1. European Patent. 15/10/2020
- Antonio Villaverde, Esther Váquez, Ugutz Unzueta, Ramon Mangues, María Virtudes Céspedes, Isolda Casanova. Therapeutic Nanoconjugates and uses thereof. WO2020148398A1. European Patent. 23/07/2020
- Antonio Villaverde Esther Vázquez, Naroa Serna, Laura Sánchez García, Ugutz Unzueta, Ramon Mangues, María Virtudes Céspedes, Isolda Casanova. Nanostructured Proteins and uses thereof. EP3619226A2. European Patent. 11/03/2020
- Esther Vázquez, Ugutz Unzueta, Neus Ferrer, Antonio P. Villaverde, María Virtudes Céspedes, Isolda Casanova, Ramon Mangues. Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells. US10813975B2. United States of America. 27/10/2020

Transfer Products

- Ramon Mangues is Founder of NANOLIGENT, SLU. (B-66970088), a Spin-off of the Biomedical Research Institute Sant Pau and the Autonomous University of Barcelona, devoted to Industrial transfer of protein-based nanoparticues and nanoconjugates for targeted drug delivery of antitumor and antimetastatic agents.
- License agreement between the Universitat Autònoma de Barcelona, the Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau and the Centro de Investigtación Biomédica en Red with the company Nanoligent SL. 5/08/2018

Scientific Production

Total Impact Factor: 137.968 · Mean Impact Factor: 8.623

Álamo P, Pallares A, Céspedes MV, Falgàs A, Serna N, Sánchez-García L, Morris GA, Casanova I, Mangues R, Vazquez E, Villaverde A, Unzueta U. Fluorescent dye labeling changes the biodistribution of cell-targeted nanoparticles. PHARMACEUTICS 2020, 12 (11):1004; doi:10.3390/pharmaceutics12111004, PMID: 33105866. **IF: 4.421**

Cespedes M.V., Cano-Garrido O., Alamo P., Sala R., Gallardo A., Serna N., Falgas A., Volta-Duran E., Casanova I., Sanchez-Chardi A., Lopez-Laguna H., Sanchez-Garcia L., Sanchez J.M., Unzueta U., Vazquez E., Mangues R., Villaverde A., Engineering Secretory Amyloids for Remote and Highly Selective Destruction of Metastatic Foci (2020) ADV MATER, 32 (7). **IF: 27.3980**

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AREA 3 · Haematological and Oncological Diseases

Haematological Diagnosis

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Sánchez García, Jana (FGS)
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Úbeda Rodenas, Jose (FGS)

Main Lines of Research

- Haematological malignancies: diagnosis using morphology, cytogenetics, flow cytometry, and molecular techniques (NGS).
- RNA-based methods (digital PCR, RNA-seq) in haematology. New resequencing platforms.
- Molecular characterization of acute myeloid leukaemia. Biologic and prognostic relevance of driver mutations.
- Age-related clonal haematopoiesis. Molecular characterization of good and bad responders to inflammatory challenges (COVID-19).
- Familial leukaemias: predisposing alleles.
- WT1 in haematology: from basic mechanisms to diagnostic applications.
- Metabolic alterations in leukemic cells.
- IgVH mutations in CLL.

Scientific Challenges

- Development of technical tools to study metabolic alterations in leukemic cells.
- Application of machine learning approaches to malignant and non-malignant hematologic disorders.
- CRISPR-Cas9 and other genetic resources applied to leukemic-cell models.
- Animal models in haematology.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Immunology (PI: Silvia Vidal).
- Core facilities at the IIB (Elena Serrano and Matilde Parreño).
- Oncology / Haematology and Transplantation (PI: Jordi Sierra).
- Molecular Bases of Disease (PI: Pablo Fuentes).

External Collaborations

- Dr. G. Saglio. Torino University. Italy.
- Dr. G. Gaidano. Novara University. Italy.
- Dr. C. Mecucci. Perugia University. Italy.
- Dr. Patrice Dubreuil. Université Marseille/Aix-en-Provence. France.
- Prof. Ginés Morata. CSIC. Madrid.
- Prof. Antonio Zorzano. Universitat de Barcelona.
- Dr. Anna Bigas. IMIM Hospital del Mar.
- Dr. Luciano di Croce. CRG. Barcelona.
- Dr. Pablo Menéndez. Josep Carreras Foundation (Hospital Clínic).
- Dr. Alberto Villanueva. IDIBELL-Bellvitge Biomedical Research Institute.
- Dr. G. Vassiliou. University of Cambridge. Jeffrey Cheah Biomedical Centre. Cambridge. UK
- Dr. J. Fitzgibbon. Cancer Research UK Barts Centre. London. UK.

Active Grants

- Josep Francesc Nomdedéu Guinot. Grup de Diagnòstic Hematològic. 2017 SGR 00999. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.

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

Grants Awarded in 2020

- Josep Francesc Nomdedéu Guinot. Nuevas aproximaciones al análisis molecular de WT1 en neoplasias mieloides. Utilidad del estudio de célula única. PI20/00867. Instituto de Salud Carlos III. Duration: 2021-2023. 56,000 €.
- Josep Francesc Nomdedéu Guinot. Immune response to COVID-19 in Hospital workers: identification of suitable donors for hyperimmune plasma therapy. SLD0017/20/00001. Departament de Salut. Duration: 2020. 109,428.05 €.

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

Scientific Production

Total Impact Factor: 56.554 · Mean Impact Factor: 6.284

Baroni M.L., Sanchez Martinez D., Gutierrez Aguera F., Roca Ho H., Castella M., Zanetti S., Velasco Hernandez T., Diaz de la Guardia R., Castano J., Anguita E., Vives S., Nomdedeu J., Lapillone H., Bras A.E., van der Velden V.H.J., Junca J., Marin P., Bataller A., Esteve J., Vick B., Jeremias I., Lopez A., Sorigue M., Bueno C., Menendez P., 41BB-based and CD28-based CD123-redirected T-cells ablate human normal hematopoiesis in vivo (2020) J IMMUNOTHER CANCER, 8 (1). **IF: 9.9130**

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AREA 3 · Haematological and Oncological Diseases

Molecular Pathology of Gynaecologic Cancer

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González Vidal, Alan (FGS)
López Vilaró, Laura (FGS)
Mozos Rocafort, Ana (FGS)
Orellana Fernández, Ruth J. (FGS)
Sánchez Güerri, Ignacio (FGS)
Szafranska, Justyna (FGS)

Main Lines of Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Metabolic Bases of Cardiovascular Risk Goup:
  - Collaborator: Dr. Enrique Lerma. Estudio de las alteraciones del metabolismo intracelular del colesterol en el cáncer de mama y carcinoma epitelial de tiroides: Evaluación de estrategias terapéuticas basadas en la HDL. PI16/00139.
  - Collaborator: Dr. Victoria Fusté. Adiposity, inflammation and cholesterol deregulation in epithelial thyroid carcinoma. Evaluation of cholesterol-lowering and LXR-based therapies. PI19/00136.
- Oncogenesis and Antitumour Drugs Group (Collaborator: Dr. Alberto Gallardo):
  - Site-directed conjugation of smart protein nanomedicines to improve targeted therapy of metastatic colorectal cancer. PI20/00400. Ugutz Unzueta Elorza. (IIB-Sant Pau). 01/01/2021-01/01/2023
  - Evaluation of nanoparticles in targeted therapy against CXCR4+ cells in in vitro and mouse models of Head and Neck Squamous Cell Carcinoma. FIS 2019.
  - Development of a new selective drug with potent anti-metastatic activity. RTC-2017-6125-1.
  - Desenvolupament d'un nanoconjugat antimetastàtic dirigit a cèl·lules mare metastàtiques CXCR4+l'obtenció de prototipus i a la valorització i transferència dels resultats d'investigació generada per equips de recerca de Catalunya (product). AGAUR 2014. PROD 00055.
  - Genotoxic Nanoparticles targeting colorectal cancer stem cells. Marató 416/C/2013-2030. Coordinated project.
- Neuromuscular Diseases Group. Collaborator: Dr. Alberto Gallardo.
- Chronic Respiratory Diseases Group. Collaborator: Dr. Laura López.
- Clinical Oncology Group (Dr. Agustí Barnadas Molins). Collaborators: Drs. Enrique Lerma, Laura López, Alberto Gallardo.
- Ear, Nose and Throat Cancer Group:
  - Collaborators: Dra. Laura López, Dr. Alberto Gallardo. Evaluation of nanoparticles for targeted drug delivery against CXCR4+ cancer cells in in vitro and mouse models of Head and Neck Squamous Cell Carcinoma. PI19/01661. Xavier Leon Vintró (Institut de Recerca, Hospital de la Santa Creu i Sant Pau). 01/01/2020-01/12/2022.
  - Dra. Justyna Szafranska.
- Genome Instability and DNA Repair Syndromes Group (Dr. Jordi Surrallés Calonge).

Scientific Production

Total Impact Factor: 181.370 · Mean Impact Factor: 9.069

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Falgàs A, Pallarès V, Serna N, Sánchez-García L, Sierra J, Gallardo A, Alba-Castellón L, Álamo P, Unzueta U, Villaverde A, Vázquez E, Mangues R, Casanova I. Selective delivery of T22-PE24-H6 to CXCR4+ diffuse large B-cell lymphoma cells leads to wide therapeutic index in a disseminated mouse model. THERANOSTICS. 2020 Apr 6;10(12):5169-5180. doi: 10.7150/thno.43231. eCollection 2020.PMID: 32373205. **IF: 8.579**

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Gronchi A., Palmerini E., Quagliuolo V., Martin Broto J., Lopez Pousa A., Grignani G., Brunello A., Blay J.-Y., Tendero O., Diaz Beveridge R., Ferraresi V., Lugowska I., Merlo D.F., Fontana V., Marchesi E., Braglia L., Donati D.M., Palassini E., Bianchi G., Marrari A., Morosi C., Stacchiotti S., Bague S., Coindre J.M., Dei Tos A.P., Picci P., Bruzzi P., Casali P.G., Neoadjuvant chemotherapy in high-risk soft tissue sarcomas: Final results of a randomized trial from Italian (ISG), Spanish (GEIS), French (FSG), and Polish (PSG) sarcoma groups (2020) J CLIN ONCOL, 38 (19), 2178-2186. **IF: 32.9560**

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Lopez-Sanchez C., Iznardo H., Mozos A., Flores-Climente V., Puig L., Purple ulcerated nodules in a middle-aged man (2020) INT J DERMATOL, 59 (4), e96-e98. **IF: 2.0670**

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Montanuy H., Martinez-Barriocanal A., Antonio Casado J., Rovirosa L., Ramirez M.J., Nieto R., Carrascoso-Rubio C., Riera P., Gonzalez A., Lerma E., Lasa A., Carreras-Puigvert J., Helleday T., Bueren J.A., Arango D., Minguillon J., Surralles J., Gefitinib and Afatinib Show Potential Efficacy for Fanconi Anemia-Related Head and Neck Cancer (2020) CLIN CANCER RES, 26 (12), 3044-3057. **IF: 10.1070**

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Pallarès V, Unzueta U, Falgàs A, Sánchez-García L, Serna N, Gallardo A, Morris GA, Alba-Castellón L, Álamo P, Sierra J, Villaverde A, Vázquez E, Casanova I, Mangues R. An Auristatin nanoconjugate targeting CXCR4+ leukemic cells blocks acute myeloid leukemia dissemination. J Hematol Oncol. 2020 Apr 15;13(1):36. doi: 10.1186/s13045-020-00863-9.PMID: 32295630. **IF: 10.743**

Ramis-Zaldivar J.E., Gonzalez-Farre B., Balague O., Celis V., Nadeu F., Salmeron-Villalobos J., Andres M., Martin-Guerrero I., Garrido-Pontnou M., Gaafar A., Sunol M., Barcena C., Garcia-Bragado F., Andion M., et al. Distinct molecular profile of IRF4-rearranged large B-cell lymphoma (2020) BLOOD, 135 (4), 274-286. **IF: 17.5430**

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Samouillan V, Martinez de Lejarza Samper IM, Amaro AB, Vilades D, Dandurand J, Casas J, Jorge E, Calvo DG, Gallardo A, Lerma E, Ramos JMG, Carreras F, Leta R, Llorente Cortes V. Biophysical and Lipidomic Biomarkers of Cardiac Remodeling Post-Myocardial Infarction in Humans. BIOMOLECULES. 2020 Oct 22;10(11):1471. doi: 10.3390/biom10111471.PMID: 33105904. **IF: 4.082**

Santaliestra M, Bussaglia E, Pratcorona M, Monter-Rovira A, Saavedra S, Mozos A, Martínez C, Nomdedéu JF. Bone marrow fibrosis, sequence variant of asxl1, and Sjogren syndrome: A case report. CLIN CASE REP. 2020 Apr 29;8(7):1269-1273. doi: 10.1002/ccr3.2813. eCollection 2020 Jul.PMID: 32695373 Free PMC article. **IF: 0.50**

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AREA 3 · Haematological and Oncological Diseases

Ear, Nose and Throat Cancers

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Pujol Olmo, Albert (FGS)
Venegas Pizarro, María del Prado (FGS)

Main Lines of Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

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

Active Grants

- Miquel Quer Agustí. Émbolos tumorales circulantes hCXCR4/SerpinE1 en el pronóstico del cáncer de cabeza y cuello. PI17/00584. Instituto de Salud Carlos III. Duration: 2018-2021. 2,000 €.
- Xavier Leon Vintró. Evaluación de nanopartículas para la entrega dirigida de fármacos contra células tumorales CXCR4+ en modelos in vitro y murinos de Carcinoma Escamoso de Cabeza y Cuello. PI19/01661. Instituto de Salud Carlos III. Duration: 2020-2022. 104,000 €.

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

Scientific Production

Total Impact Factor: 26.524 · Mean Impact Factor: 2.947

Coca-Pelaz A., Rodrigo J.P., Suarez C., Nixon I.J., Makitie A., Sanabria A., Quer M., Strojan P., Bradford C.R., Kowalski L.P., Shaha A.R., de Bree R., Hartl D.M., Rinaldo A., Takes R.P., Ferlito A., The risk of second primary tumors in head and neck cancer: A systematic review (2020) HEAD NECK-J SCI SPEC, 42 (3), 456-466. **IF: 2.5380**

Eckel H.E., Simo R., Quer M., Odell E., Paleri V., Klussmann J.P., Remacle M., Sjogren E., Piazza C., European Laryngological Society position paper on laryngeal dysplasia Part II: diagnosis, treatment, and follow-up (2020) EUR ARCH OTO-RHINO-L. **IF: 1.8090**

Lop J., Valero C., Garcia J., Quer M., Ganly I., Shah J.P., Patel S.G., Leon X., Does age influence disease-specific survival in patients with squamous cell carcinomas of the head and neck? (2020) J SURG ONCOL, 121 (7), 1058-1066. **IF: 2.7710**

Martinez-Tellez E., Orus Dotu C., Trujillo-Reyes J.C., Guarino M., Cladellas Gutierrez E., Planas Canovas G., Ramon Cervello J., Carvi Mallo A., Venegas Pizarro M.D.P., Leon Vintro X., Belda-Sanchis J., Tracheotomy in patients COVID-19: A necessary high risk procedure. Two center experience Traqueotomía en pacientes COVID-19: un procedimiento necesario

de alto riesgo. Experiencia de dos centros (2020) ARCH BRONCONEUMOL, 56 (10), 673-674. **IF: 4.9570**

Pujol-Olmo A, Mirapeix RM, Sañudo-Tejero JR, Quer-Agustí M. Description and relationships of the parotid gland levels proposed by the European Salivary Gland Society staging system: an anatomical study. SURG RADIOL ANAT. 2020; 42(9):1101-1107. doi: 10.1007/s00276-020-02483-x. Epub 2020 May 5. PMID: 32372113. **IF: 1.092**

Quer M., Leon X., Casasayas M., Sansa A., Lopez M., Garcia Lorenzo J., Salvage surgery in head and neck cancer: External validation of predictors of disease-specific survival (2020) ORAL ONCOL, 109. **IF: 3.9790**

Sansa-Perna A., Casasayas-Plass M., Rovira-Martinez C., Lopez-Vilas M., Garcia-Lorenzo J., Quer-Agusti M., Leon-Vintro X., Pharyngeal closure after a total laryngectomy: Mechanical versus manual technique (2020) J LARYNGOL OTOL, 134 (7), 626-631. **IF: 1.0980**

Valero C., Pardo L., Sansa A., Garcia Lorenzo J., Lopez M., Quer M., Leon X., Prognostic capacity of Systemic Inflammation Response Index (SIRI) in patients with head and neck squamous cell carcinoma (2020) HEAD NECK-J SCI SPEC, 42 (2), 336-343. **IF: 2.5380**

Valero C., Zanoni D.K., McGill M.R., Ganly I., Morris L.G.T., Quer M., Shah J.P., Wong R.J., Leon X., Patel S.G., Pretreatment peripheral blood leukocytes are independent predictors of survival in oral cavity cancer (2020) CANCER-AM CANCER SOC, 126 (5), 994-1003. **IF: 5.7420**

Other Publications

- Quer M, Olsen KD, Silver CE, Hamoir M, Mäkitie AA, Rodrigo JP, Vander Poorten V, Takes RP, Hellquist H, García Lorenzo J, Guntinas-Lichius O, de Bree R, Suárez C, Kowalski LP, Vartanian JG, Sanabria A, Shaha AR, Zbären P, Rinaldo A, Ferlito A. Is There A Role for Limited Parotid Resections for Primary Malignant Parotid Tumors? SURGERIES 2020, 1, 2-9; doi:10.3390/surgeries1010002.

AREA 3 · Haematological and Oncological Diseases

Oncology/Haematology and Transplantation

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Main Lines of Research

- Study of the molecular and cellular pathophysiology of haematological cancers, particularly focusing on AML, CLL, and aggressive lymphomas.
- Study of the prognostic value of clinical and biological parameters in haematological malignancies.
- Design of new modalities of chemotherapy, biotherapy and drug treatment targeting molecular mechanisms.
- Design of new modalities of haematopoietic stem-cell transplantation and cell treatments, including CAR-T cell therapy.

Scientific Challenges

- Identify new prognostic parameters for risk and therapeutic stratifications.
- Molecularly characterize acute myeloid leukaemia and determine the prognostic value of known genes and other genes of uncertain significance (with the Haematology Laboratory).
- Evaluate targeted therapy in cell lines and animal models (with the Oncogenesis and Antitumour Drugs group).
- Reduce toxicity and increase availability of allogeneic transplants.
- Model leukaemia and lymphoma in animals to better understand cell physiopathology and test new drugs (with the Oncogenesis and Antitumour Drugs group).
- Preclinical (mice) and clinical studies on immunotherapy for lymphoproliferative diseases. Development of non-commercial CAR-T cell therapies.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Oncogenesis and Antitumour Drugs (Dr. Ramon Mangues).
- Haematological Diagnosis (Dr. Josep Nomdedéu).
- Microbiology and Infectious Diseases (Dr. Pere Coll).

External Collaborations

- European Research Initiative on Chronic Lymphocytic Leukemia (ERIC): C. Moreno, coordinator.
- Spanish lymphoma transplantation groups (GELTAMO): J. Briones, S. Novelli.
- Spanish haematologic malignancies consortium (PETHEMA): J. Sierra, M. Granell, S. Brunet.
- Spanish CETLAM acute myeloid leukaemia and myelodysplasia group hospitals.
- EureCart Consortium (H2020): Universities of Milan, Wurzburg, Hospital Bambino Gessú, Rome.
- Ulm University and German Austrian AML Study Group.
- Erasmus University Rotterdam and HOVON Cooperative Group.
- European Haematology Association (EHA). J. Sierra, member of the Nomination and Scientific Working Groups Committee.
- European Blood and Marrow Transplantation Group.

Active Grants

- Javier Briones Meijide. Células T de memoria "STEM" transducidas con un receptor quimérico antígeno-específico (CAR) dirigido al antigeno BCMA en linfoma de Hodgkin. PI15/01383. Instituto de Salud Carlos III. Duration: 2016-2020. 51,500 €.
- Javier Briones Meijide. Memory stem T cells with optimized chimeric antigen receptors targeting CD30 for the treatment of peripheral T cells lymphomas. DJCLS 10R/2016. Fundació Josep Carreras Internacional. Duration: 2017-2020. 135,000 €.
- Jordi Sierra Gil. Red de Terapia Celular (TerCel). RD16/0011/0028. Instituto de Salud Carlos III. Duration: 2017-2021. 3,945 €.
- Jordi Sierra Gil. EURE-CART EURopean Endeavour for Chimeric Antigen Receptor Therapies. H2020-SC1-PM09-EURE-CART. European Union. Duration: 2017-2021. 195,552 €.
- Carmen Álvarez Fernández. Inmunoterapia mediante linfocitos T de memoria STEM con receptores antígeno-específicos (CARs) en linforma de Hodgkin. AIO 2017. Asociación Española Contra el Cáncer. Duration: 2017-2021. 165,000 €.
- Jordi Sierra Gil. Implicación de la vía CXCR4/CXCL12/CXCR7 en la resistencia, recidiva y fenotipo de célula madre de la leucemia mieloide aguda. PI17/01246. Instituto de Salud Carlos III. Duration: 2018-2021. 73,000 €.
- Jordi Sierra Gil. Grup de Diagnòstic i Tractament de les Neoplàsies Hematològiques. 2017 SGR 1395. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 35,200 €.
- Javier Briones Meijide. Modulación farmacológica y diseño de CARs duales inmunoestimuladores para inmunoterapia con células T de memoria stem con alta eficacia antitumoral. PI18/01023. Instituto de Salud Carlos III. Duration: 2019-2021. 92,000 €.
- Yaiza Núñez Amela. Desarrollo de nanopartículas para la entrega dirigida de fármacos a células madre leucémicas CXCR4+. FI18/00268. Instituto de Salud Carlos III. Duration: 2019-2023. 82,400 €.
- Silvana Ana Rina Novelli Canales. ATAC-seq as a reliable and fast method for peripheral T-cell lymphoproliferation subclassification. FEHH-CRIS 2019. Fundación Española de Hematología y Hemoterapia. Duration: 2019-2020. 45,000 €.
- Nela Klein González. Células T CAR modificadas genéticamente con receptores quiméricos coestimuladores para incrementar su eficacia antitumoral. FEHH 2018. Fundación Española de Hematología y Hemoterapia. Duration: 2019-2020. 36,000 €.
- Javier Briones Meijide. Avaluació clínica dels MTA tipus CAR-TCELL. Convenio BST 2018. Banc de Sang i Teixits. Duration: 2018-2021. 82,066 €.
- Carolina Moreno Atanasio. Nuevas estrategias para monitorizar la enfermedad mínima residual (EMR) en la Leucemia Linfática Crónica. PI19/00753. Instituto de Salud Carlos III. Duration: 2020-2022. 82,000 €.
- Javier Briones Meijide. Generació de limfòcits T memòria "STEM" modificats amb receptors quimèrics antigen-específic (CARs) per immunoteràpia adoptiva en limfoma. LA CAIXA 2018. Fundació "La Caixa". Duration: 2019-2022. 1,818,181.80 €.
- Jordi Sierra Gil. Humanized nanomedicines selectively killing CXCR4+ cancer cells for Acute Myeloid Leukemia therapy. MARATO 201941-30. Fundació La Marató de TV3. Duration: 2020-2023. 15,000 €.
- Javier Briones Meijide. Non-invasive tumor immunoglobulin gene next generation sequencing from circulating tumor DNA in diffuse large B cell lymphoma: prognostic implications and assessment of tumor response. GILEAD 2019-1. Gilead Sciencies, S.L.U. Duration: 2019-2021. 45,450 €.
- Javier Briones Meijide. Ensayo fase I-II de inmunoterapia con células HSP-CAR30 para pacientes con linfoma de HODGKIN y linfoma T con expresion CD30 refractario o en recidiva. ICI19/00060. Instituto de Salud Carlos III. Duration: 2020-2023. 1,068,229 €.

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

Grants Awarded in 2020

- Javier Briones Meijide. Accelerating development and improving access to car and TCR engineered TC THERAPY. 945393 T2EVOLVE. European Union. Duration: 2021-2025. 217,048 €.
- Jordi Sierra Gil. Poblaciones subclonales de LMA y células madre leucémicas identificadas mediante secuenciación de ARN de una sola célula y citometría de flujo multiparamétrica: impacto en la respuesta al tratamiento. PI20/01621. Instituto de Salud Carlos III. Duration: 2021-2023, 252,000 €.
- Guadalupe Oñate Hospital. Contratos Rio Hortega 2020. CM20/00061. Instituto de Salud Carlos III. 2021-2023. Duration: 53,732 €.
- Alba Mora Raya. Nuevas estrategias para monitorizar la enfermedad mínima residual (EMR) en la Leucemia Linfática Crónica. FEHH 2020. Fundación Española de Hematología y Hemoterapia. Duration: 2021-2021. 36,000 €.

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

Scientific Production

Total Impact Factor: 281.511 · Mean Impact Factor: 5.865

Averbuch D., Tridello G., Hoek J., Mikulska M., Pabst T., Yanez San Segundo L., Akan H., Ozcelik T., Donnini I., Klyasova G., Botelho de Sousa A., Zuckerman T., Tecchio C., de la Camara R., Aki S.Z., Ljungman P., et al. Intercontinental study on pre-engraftment and post-engraftment Gram-negative rods bacteremia in hematopoietic stem cell transplantation patients: Risk factors and association with mortality (2020) J INFECTION, 81 (6), 882-894. **IF: 4.8420**

Baron F., Labopin M., Ruggeri A., Sierra J., Robinson S., Labussiere-Wallet H., Potter M., Ribera J.-M., Deconinck E., Rambaldi A., Rohrlich P.-S., de Revel T., Gluckman E., Nagler A., Mohty M., Impact of detectable measurable residual disease on umbilical cord blood transplantation (2020) AM J HEMATOL, 95 (9), 1057-1065. **IF: 6.9730**

Bastos-Oreiro M., Muntanola A., Panizo C., Gonzalez-Barca E., de Villambrosia S.G., Cordoba R., Lopez J.L.B., Gonzalez-Sierra P., Terol M.J., Gutierrez A., Grande C., Ramirez M.J., Iserte L., Perez E., Navarro B., et al. RELINF: prospective epidemiological registry of lymphoid neoplasms in Spain. A project from the GELTAMO group (2020) ANN HEMATOL, 99 (4), 799-808. **IF: 2.9040**

Bataller A., Onate G., Diaz-Beya M., Guijarro F., Garrido A., Vives S., Tormo M., Arnan M., Salamero O., Sampol A., Coll R., Vall-Llovera F., Oliver-Caldes A., Lopez-Guerra M., Pratcorona M., Zamora L., Villamon E., Roue G., Blanco A., Nomdedeu J.F., Colomer D., Brunet S., Sierra J., Esteve J., Acute myeloid leukemia with NPM1 mutation and favorable European LeukemiaNet category: outcome after preemptive intervention based on measurable residual disease (2020) BRIT J HAEMATOL, 191 (1), 52-61. **IF: 5.5180**

Bejanyan N., Zhang M., Bo-Subait K., Brunstein C., Wang H., Warlick E.D., Giralt S., Nishihori T., Martino R., Passweg J., Dias A., Copelan E., Hale G., Gale R.P., Solh M., Kharfan-Dabaja M.A., Diaz M.A., Ganguly S., et al. Myeloablative Conditioning for Allogeneic Transplantation Results in Superior Disease-Free Survival for Acute Myelogenous Leukemia and Myelodysplastic Syndromes with Low/Intermediate but not High Disease Risk Index: A Center for International Blood and Marrow Transplant Research Study (2020) BIOL BLOOD MARROW TR. **IF: 3.8530**

Bento L., Diaz-Lopez A., Barranco G., Martin-Moreno A.M., Baile M., Martin A., Sancho J.M., Garcia O., Rodriguez M., Sanchez-Pina J.M., Novelli S., Salar A., Bastos M., Rodriguez-Salazar M.J., Gonzalez de Villambrosia S., Cordoba R., Garcia-Recio M., Martinez-Serra J., del Campo R., Luzardo H., Garcia D., Hong A., Abrisqueta P., Sastre-Serra J., Roca P., Rodriguez J., Gutierrez A., New prognosis score including absolute lymphocyte/

monocyte ratio, red blood cell distribution width and beta-2 microglobulin in patients with diffuse large B-cell lymphoma treated with R-CHOP: Spanish Lymphoma Group Experience (GELTAMO) (2020) BRIT J HAEMATOL, 188 (6), 888-897. **IF: 5.5180**

Boque C., Abad M.R., Agustin M.J., Garcia-Goni M., Moreno C., Gabas-Rivera C., Granados E., Castro-Gomez A., Pardo C., Lizan L., Treatment decision-making in chronic lymphocytic leukaemia: Key factors for healthcare professionals. PRELIC study (2020) J GERIATR ONCOL, 11 (1), 24-30. **IF: 2.7610**

Burger J.A., Barr P.M., Robak T., Owen C., Ghia P., Tedeschi A., Bairey O., Hillmen P., Coutre S.E., Devereux S., Grosicki S., McCarthy H., Simpson D., Offner F., Moreno C., Dai S., Lal I., Dean J.P., Kipps T.J., Long-term efficacy and safety of first-line ibrutinib treatment for patients with CLL/SLL: 5 years of follow-up from the phase 3 RESONATE-2 study (2020) LEUKEMIA, 34 (3), 787-798. **IF: 8.6650**

Bussaglia E., Pratcorona M., Carricondo M., Sansegundo L., Rubio M.A., Monter A., Brell A., Badell I., Esteve J., Arnan M., Talarn C., Tormo M., Garcia A., Vall-Llovera F., Ortin X., Pedro C., Bargay J., Brunet S., Sierra J., Nomdedeu J., Application of a digital PCR method for WT1 to myeloid neoplasms in CR and deep ELN WT1 molecular response (< 10 copies) (2020) ANN HEMATOL, 99 (4), 765-772. **IF: 2.9040**

Dandoy C.E., Kim S., Chen M., Ahn K.W., Ardura M.I., Brown V., Chhabra S., Diaz M.A., Dvorak C., Farhadfar N., Flagg A., Ganguly S., Hale G.A., Hashmi S.K., Hematti P., Martino R., Nishihori T., Nusrat R., Olsson R.F., Rotz S.J., Sung A.D., Perales M.-A., Lindemans C.A., Komanduri K.V., Riches M.L., Incidence, Risk Factors, and Outcomes of Patients Who Develop Mucosal Barrier Injury-Laboratory Confirmed Bloodstream Infections in the First 100 Days after Allogeneic Hematopoietic Stem Cell Transplant (2020) JAMA NETW OPEN, 3 (1), e1918668-. **IF: 5.0320**

Davids M.S., Kuss B.J., Hillmen P., Montillo M., Moreno C., Essell J., Lamanna N., Nagy Z., Tam C.S., Stilgenbauer S., Ghia P., Delgado J., Lustgarten S., Weaver D.T., Youssoufian H., Jager U., Efficacy and safety of duvelisib following disease progression on ofatumumab in patients with relapsed/refractory CLL or SLL in the DUO crossover extension study (2020) CLIN CANCER RES, 26 (9), 2096-2103. **IF: 10.1070**

Diaz-Beya M., Labopin M., Maertens J., Alijurf M., Passweg J., Dietrich B., Schouten H., Socie G., Schaap N., Schwerdtfeger R., Volin L., Michallet M., Polge E., Sierra J., Mohty M., Esteve J., Nagler A., Allogeneic stem cell transplantation in AML with t(6;9)(p23;q34);DEK-NUP214 shows a favourable outcome when performed in first complete remission (2020) BRIT J HAEMATOL, 189 (5), 920-925. **IF: 5.5180**

Diaz-Santa J., Rodriguez-Romanos R., Osca G., Pratcorona M., Garrido A., Coll R., Moret C., Escoda L., Tormo M., Heras I., Arnan M., Vives S., Salamero O., Lloveras N., Bargay J., Sampol A., Cruz D., Garcia A., Quinones T., Esteve J., Sierra J., Gallardo D., UGT1A1 genotype influences clinical outcome in patients with intermediate-risk acute myeloid leukemia treated with cytarabine-based chemotherapy (2020) LEUKEMIA, 34 (11), 2925-2933. **IF: 8.6650**

Dohner K., Thiede C., Jahn N., Panina E., Gambietz A., Larson R.A., Prior T.W., Marcucci G., Jones D., Krauter J., Heuser M., Voso M.T., Ottone T., Nomdedeu J.F., Mandrekar S.J., Klisovic R.B., Wei A.H., Sierra J., Sanz M.A., Brandwein J.M., de Witte T., Jansen J.H., Niederwieser D., Appelbaum F.R., Medeiros B.C., Tallman M.S., Schlenk R.F., Ganser A., Serve H., Ehninger G., Amadori S., Gathmann I., Benner A., Pallaud C., Stone R.M., Dohner H., Bloomfield C.D., Impact of NPM1/FLT3-ITD genotypes defined by the 2017 European LeukemiaNet in patients with acute myeloid leukemia (2020) BLOOD, 135 (5), 371-380. **IF: 17.5430**

Escamilla Gomez V., Garcia-Gutierrez V., Lopez Corral L., Garcia Cadenas I., Perez Martinez A., Marquez Malaver F.J., Caballero-Velazquez T., Gonzalez Sierra P.A., Viguria Alegria M.C., Parra Salinas I.M., Calderon et al. Ruxolitinib in refractory acute and chronic graft-versus-host disease: a multicenter survey study (2020) BONE MARROW TRANSPL, 55 (3), 641-648. **IF: 4.7250**

Esquirol A., Querol S., Garcia-Cadenas I., Novelli S., Garrido A., Saavedra S., Moreno C., Granell M., Caballero A., Brunet S., Briones J., Martino R., Sierra J., When an HLA identical donor is not available in adults with hematological neoplasms: single-center comparison of single-unit cord blood transplantation and haploidentical-related PBSC transplantation with PTCy using a standardized conditioning platform (thiotepa-busulfan-fludarabine) (2020) ANN HEMATOL, 99 (1), 157-165. **IF: 2.9040**

Falgas A., Pallares V., Unzueta U., Cespedes M.V., Arroyo-Solera I., Moreno M.J., Gallardo A., Mangues M.A., Sierra J., Villaverde A., Vazquez E., Mangues R., Casanova I., A CXCR4-targeted nanocarrier achieves highly selective tumor uptake in diffuse large B-cell lymphoma mouse models (2020) HAEMATOLOGICA, 105 (3), 741-753. **IF: 7.1160**

Falgas A., Pallares V., Serna N., Sanchez-Garcia L., Sierra J., Gallardo A., Alba-Castellon L., Alamo P., Unzueta U., Villaverde A., Vazquez E., Mangues R., Casanova I., Selective delivery of T22-PE24-H6 to CXCR4+ diffuse large B-cell lymphoma cells leads to wide therapeutic index in a disseminated mouse model (2020) THERANOSTICS, 10 (12), 5169-5180. **IF: 8.5790**

Fox M.L., Garcia-Cadenas I., Perez A.M., Villacampa G., Pinana J.L., Orti G., Montoro J., Roldan E., Bosch Vilaseca A., Martino R., Salamero O., Saavedra S., Hernandez-Boluda J.C., Esquirol A., Sierra J., Sanz J., Solano C., Bosch F., Barba P., Valcarcel D., Feasibility of thiotepa addition to the fludarabine-busulfan conditioning with tacrolimus/sirolimus as graft vs host disease prophylaxis (2020) LEUKEMIA LYMPHOMA, 1-10. **IF: 2.9690**

Garcia-Cadenas I., Awol R., Esquirol A., Saavedra S., Bosch-Vilaseca A., Novelli S., Garrido A., Lopez J., Granell M., Moreno C., Briones J., Brunet S., Sierra J., Martino R., Incorporating posttransplant cyclophosphamide-based prophylaxis as standard-of-care outside the haploidentical setting: challenges and review of the literature (2020) BONE MARROW TRANSPL, 55 (6), 1041-1049. **IF: 4.7250**

Gascon y Marin I.G., Munoz-Novas C., Figueroa I., Hernandez-Sanchez M., Rodriguez-Vicente A.-E., Quijada-Alamo M., Perez-Carretero C., Moreno C., Collado R., Espinet B., Puiggros A., Heras N.D.L., Bosch F., Hernandez J.-A., Prognosis Assessment of Early-Stage Chronic Lymphocytic Leukemia: Are We Ready to Predict Clinical Evolution Without a Crystal Ball? (2020) CL LYMPH MYELOM LEUK, 20 (8), 548-555.e4. **IF: 2.2980**

Gonzalez-Barca E., Boumendil A., Blaise D., Trneny M., Masszi T., Finel H., Michieli M.G., Bittenbring J.T., Gritti G., Snowden J.A., Bishton M., Bruno B., de Villambrosia S.G., Janikova A., Leleu X., Anagnostopoulos A., Poire X., Crysandt M., Ozkurt Z.N., Vandenberghe E., Itala-Remes M., Cahn J.Y., Jantunen E., Schroyens W., Maertens J., Esquirol A., Dreger P., Montoto S., Sureda A., Outcome in patients with diffuse large B-cell lymphoma who relapse after autologous stem cell transplantation and receive active therapy. A retrospective analysis of the Lymphoma Working Party of the European Society for Blood and Marrow Transplantation (EBMT) (2020) BONE MARROW TRANSPL, 55 (2), 393-399. **IF: 4.7250**

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Other Publications

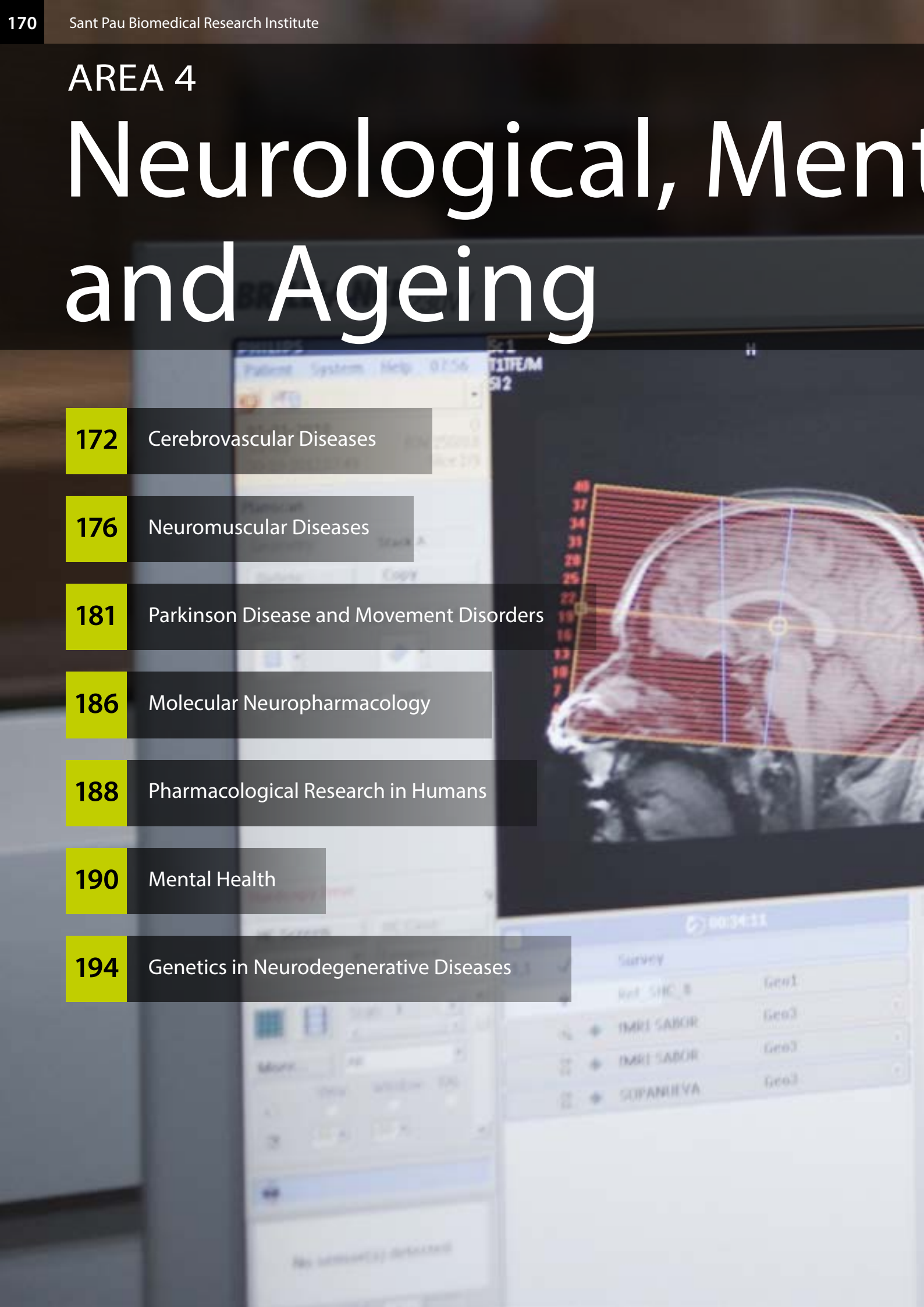
- Novelli S, Soto L, Caballero A, Moreno ME, Lara MJ, Bayo D, Quintas A, Jimeno P, Zamora MI, Bigorra T, Sierra J, Briones J. Assessment of Confirmed Clinical Hypersensitivity to Rituximab in Patients Affected with B-Cell Neoplasia (2020) ADV HEMATOL Jun 11;2020:4231561. doi: 10.1155/2020/4231561. PMID: 32577119

Diffusion Activities

- Jorge Sierra. Oral presentation. Aspectos básicos del trasplante de progenitores hematopoyéticos (TPH) para médicos hematólogos no relacionados con el TPH y coordinadores hospitalarios de trasplante. IX edición. Grupo Español de Trasplante Hematopoyético y Terapia Celular. Barcelona, 24 January 2020.
- Jorge Sierra. Chair. Conclusions. The American Society of Hematology 61st Annual Meeting and Exposition. Sociedad Española de Hematología y Hemoterapia. Alicante, 6-7 February 2020.
- Ana Garrido. Conclusions. Oral presentation: Leucemia aguda mieloblástica. The American Society of Hematology 61st Annual Meeting and Exposition. Sociedad Española de Hematología y Hemoterapia. Alicante, 6-7 February 2020.
- Jorge Sierra. Oral presentation: Tratamiento actual y futuro de la leucemia mieloide aguda en paciente de edad avanzada. XIV Reunión Anual de la AVHH (Asociación Valenciana de Hematología y Hemoterapia). 28 February 2020.
- Jorge Sierra. Oral presentation: The CART cell process in Europe: Guidance for centers. 46th Annual Meeting of the EBMT (European Society for Blood and Marrow Transplantation). Virtual, 29 August - 1 September 2020.
- Rodrigo Martino. Oral presentation: Impact (known or potential) of community respiratory virus infections on the outcome of recipients of an allogeneic HSCT or CAR T-cell therapy. 46th Annual Meeting of the EBMT (European Society for Blood and Marrow Transplantation). Virtual, 29 August - 1 September 2020.
- Jorge Sierra. Chair. EHA (European Hematology Association), SWG (Scientific Working Group on Immunotherapy). Scientific Meeting on Immunotherapy for Hematological Disorders. Virtual, 19-20 November 2020.
- Jorge Sierra. Oral presentation: Phase 3b Study Assessing the Safety and Efficacy of Midostaurin in Younger and Older Patients with Newly Diagnosed, FLT3-Mutated Acute Myeloid Leukemia (AML) Who Are Eligible for 7+3 or 5+2 Chemotherapy. 62nd ASH (American Society of Hematology) Annual Meeting and Exposition. Virtual, 5-8 December 2020.
- Ana Garrido. Poster: Risk-Adapted Intensive Chemotherapy for Primary ACUTE Myeloid Leukemia during the Last 25 YEARS: Increase in Complete Remission RATE, Hematopoietic Cell Transplantation Access and Decrease in Relapse Incidence Have LED to Improved Survival. 62nd ASH (American Society of Hematology) Annual Meeting and Exposition. Virtual, 5-8 December 2020.
- Ana Carolina Caballero. Poster: CAR-T Cells with High CAR Expression Intensity Have Improved In Vitro and In Vivo Anti-Lymphoma Effect without Functional Exhaustion. 62nd ASH (American Society of Hematology) Annual Meeting and Exposition. Virtual, 5-8 December 2020.

AREA 4

Neurological, Ment and Ageing



172 Cerebrovascular Diseases

176 Neuromuscular Diseases

181 Parkinson Disease and Movement Disorders

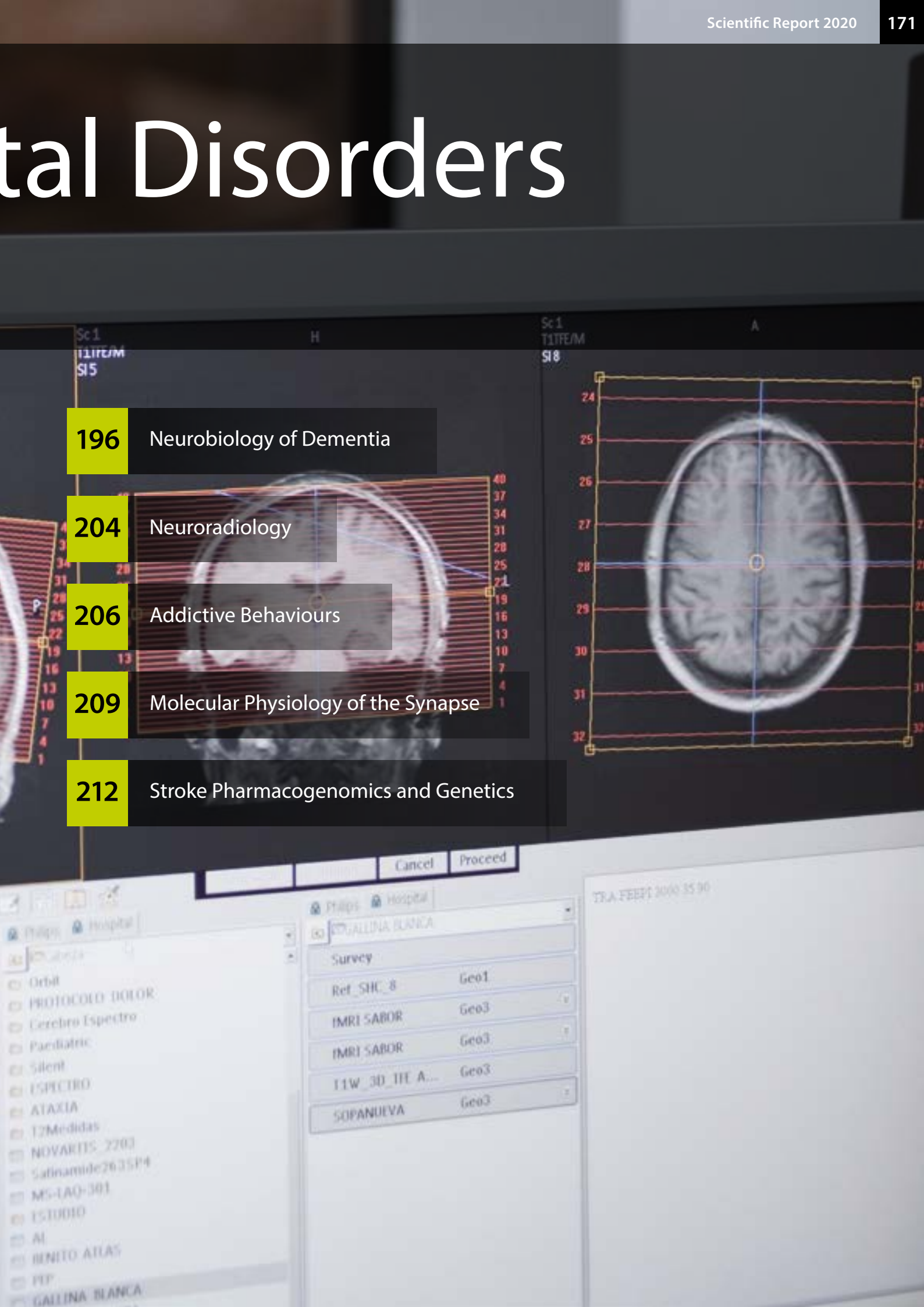
186 Molecular Neuropharmacology

188 Pharmacological Research in Humans

190 Mental Health

194 Genetics in Neurodegenerative Diseases

tal Disorders



196 Neurobiology of Dementia

204 Neuroradiology

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AREA 4 · Neurological, Mental Disorders and Ageing

Cerebrovascular Diseases

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Main Lines of Research

- Brain neurorepair after stroke.
- Role of statins in ischaemic and haemorrhagic stroke.
- Intracerebral haemorrhage: Prevention of cerebral haemorrhage with anticoagulants, prevention and treatment of hematoma growth, etiological classification, multi-centre registry.
- Endothelial progenitor cells in stroke.
- Reperfusion therapies: Benefits and risks of intravenous thrombolysis and mechanical thrombectomy, collateral circulation in acute ischaemic stroke
- Non-invasive monitoring of cerebral flow with applied optic methods.
- Vulnerability of the atherosclerotic plaque
- Stroke and infection with COVID-19
- Participation in clinical trials.

Scientific Challenges

- Enhance cooperation with other groups within the framework of Spanish stroke research.
- Spanish research network (RETICS/INVICTUS PLUS) and also intrahospital and extra-hospital cooperation.
- Obtain funding from FIS, European Community calls, regional authorities and private companies.
- Increase the number of contracted and grant-aided researchers and professionally develop existing researchers.

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

- Dr. García-Verdugo. Universidad de Valencia, Spain.
- Dr. Carles Arús. Facultat de Ciències, Universitat Autònoma de Barcelona, Spain.
- Dr. Turgut Durduran. Instituto de Ciencias Fotónicas, Castelldefels, Barcelona, Spain.
- Dr. Tomás Sobrino. Hospital General Universitario, Santiago de Compostela, Spain.
- Dr. Blanca Fuentes. Hospital La Paz, Madrid, Spain.
- Dr. Ángel Chamorro. Hospital Clínic de Barcelona, Spain.
- Dr. Antonio Dávalos. Hospital Germans Trias i Pujol, Badalona, Spain.
- Dr. Jaume Roquer. Hospital del Mar, Barcelona, Spain.
- Dr. Francesc Purroy. Hospital Arnau de Vilanova, Lleida, Spain.
- Dr. David Rodríguez Luna., Hospital Vall d'Hberon, Barcelona, Spain.
- Dr. Miquel Terceño. Hospital Dr. Josep Trueta, Girona, Spain.
- RETICS (cooperative health research network) / INVICTUS (ictus research).

Clinical trials

- SWITCH
- RESPECT-ESUS
- NAVIGATE-ESUS

- CONVINCE
- PACIFIC
- Dr. David Werring (HERO and CROMIS-2 study, Microbleeds consortium), National Hospital for Neurology and Neurosurgery, London.
- Dr. Peter Kelly (BIOVASC study, CONVINCE study), Mater University Hospital, Dublin.
- Dr Ashkan Soamanesch (ENRICH-AF trial).

Active Grants

- Joan Martí Fàbregas. REgenerative Stem cell therapy for STroke in Europe - RESSTORE. PHC-15-2015. European Union. Duration: 2015-2020. 389.58 €.
- Joan Martí Fàbregas. Red de Enfermedades Vasculares Cerebrales. INVICTUS PLUS. RD16/0019/0010. Instituto de Salud Carlos III. Duration: 2017-2021. 125,020 €.
- Raquel Delgado Mederos. Cerebral blood flow-guided early rehabilitation intervention after stroke: a pilot randomized trial. MARATO 20170930. Fundació La Marató de TV3. Duration: 2018-2021. 118,500 €.
- Elena Jiménez Xarrie. Biomarcadors lipoproteics per determinar la inflamació de la placa carotídia en l'ictus isquèmic. MARATO 20171610. Fundació La Marató de TV3. Duration: 2018-2021. 158,060 €.
- Joan Martí Fàbregas. Malalties Vasculars Cerebrals. 2017 SGR 00665. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Daniel Guisado Alonso. Evaluación multidisciplinar del pronóstico neurológico tras una muerte súbita cardiaca. CM18/00065. Instituto de Salud Carlos III. Duration: 2019-2021. 53,732 €.
- Joan Martí Fàbregas. Circulación colateral en ictus isquémico agudo con oclusión de gran vaso: un estudio de los factores clínicos, radiológicos, plasmáticos y genéticos relacionados. PI19/00859. Instituto de Salud Carlos III. Duration: 2020-2022. 122,000 €.
- Pol Camps / Sonia Benítez González. Lipoproteínas modificadas y marcadores inflamatorios asociados con vulnerabilidad de placa carotídea e ictus isquémico. PI19/00421. Instituto de Salud Carlos III. Duration: 2020-2022. 108,000 €.
- Registre multicèntric de pacients amb hemorràgia intracerebral a Catalunya (HIC-CAT). Dades sobre els circuits assistencials i avaluació del pronòstic en funció del temps fins a l'ingrés i del tipus de centre on es fa l'assistència. Fundació Ictus

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

Grants Awarded in 2020

- Luis Antonio Prats Sánchez. Proyecto MISTIC: papel del MIcrobioma inteStinal en la evolución neurológica de pacienTes con hemorragia IntraCerebral espontánea. PI20/00925. Instituto de Salud Carlos III. Duration: 2021-2023. 72,000 €.
- Joan Martí Fàbregas, Contractes per a la intensificació de l'activitat investigadora 2020. INT20/00011. Instituto de Salud Carlos III. Duration: 2021-2022. 60,000 €.
- Núria Puig Grífol, Contractes Predoctorals PFIS 2020. FI20/00252. Instituto de Salud Carlos III. Duration: 2021-2024. 82,400 €.
- Cristina Gallego Fàbrega, Contractes Sara Borrell 2020., CD20/00043, Instituto de Salud Carlos III. Duration: 2021-2023. 80,598 €.
- Joan Martí Fàbregas. Ensayo clínico sobre optimización hemodinámica de la perfusión cerebral tras el tratamiento endovascular en pacientes con ictus isquémico (Estudio HOPE). ICI20/00137. Instituto de Salud Carlos III. Duration: 2021-2021. 329,945 €.

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

Doctoral Theses

- Luis Prats Sánchez. Hemorragia remota secundaria al tratamiento fibrinolítico endovenoso en el ictus isquémico: frecuencia, factores de riesgo y pronóstico. Universitat Autònoma de Barcelona. Director: Joan Martí Fàbregas. Date of defense: 10/01/2020
- Pol Camps Renom. Nous marcadors de vulnerabilitat de l'aterosclerosi carotídia en pacients amb ictus isquèmic, Universitat Autòoma de Barcelona. Directors: Joan Martí Fàbregas, Raquel Delgado Mederos. Date of defense: 02/07/2020

Scientific Production

Total Impact Factor: 239.179 · Mean Impact Factor: 7.715

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Diffusion Activities

Communications to Congresses

- Lisa Kobayashi Frisk; Daniel Guisado Alonso; Anna Bosch de Basea Gómez; Marta Navarro Roman; Joan Marti-Fabregas; Raquel Delgado-Mederos. Diffuse optical evaluation of hemodynamic and metabolic biomarkers towards guiding management in acute ischemic stroke. 2020 OSA Biophotonics Congress: Biomedical Optics (BioMed 2020), Fort Lauderdale, April 2020.
- Francisco Purroy, Joan Martí-Fàbregas. Remote Ischemic Perconditioning Among Acute Ischemic Stroke Patients in Catalonia: Remote-Cat Project. International Stroke Conference. Los Angeles, February 2020.
- Raquel Delgado-Mederos, Pol Camps-Renom, Alejandro Martínez-Domeño, Luis Prats-Sanchez, Daniel Guisado-Alonso, Joan Martí Fàbregas. Impact of neurosonology beyond carotid ultrasound screening on perioperative stroke risk in cardiac surgery. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Raquel Delgado-Mederos, Rebeca Marín-Bueno, Pol Camps-Renom, Joan Martí Fàbregas. Clinical value of poststroke delirium screening with the confusion assessment method for the intensive care unit (CAM-ICU) in the stroke unit: a prospective study. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Cristina Gallego Fabrega, Pol Camps-Renom, Luis Prats-Sanchez, Elena Jiménez-Xarrié, Joan Martí-Fábregas. Epigenetic biological age might explain age differences between sexes at stroke onset. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Daniel Guisado-Alonso, Alejandro Martínez-Domeño, Raquel Delgado-Mederos, Pol Camps-Renom, Luis Prats-Sanchez, Rebeca Marín-Bueno, Joan Martí-Fábregas. Reasons for excluding patients with acute ischemic stroke from mechanical thrombectomy. A population-based study. ESO/WSO virtual conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Luis Prats-Sanchez, Marina Guasch-Jiménez, Alejandro Martínez-Domeño, Daniel Guisado-Alonso, Pol Camps-Renom, Raquel Delgado-Mederos, Joan Martí-Fábregas. Detection of potential organ donors in patients with intracerebral hemorrhage with limitation of life-sustaining treatment. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Luis Prats-Sánchez, Marina Guasch-Jiménez, Pol Camps-Renom, Daniel Guisado-Alonso, Alejandro Martínez-Domeño, Raquel Delgado-Mederos, Rebeca Marín-Bueno, Elena Jiménez-Xarrié, Joan Martí-Fábregas. Influence of intensity and lipophilicity of statins on early neurological deterioration, mortality and long-term functional outcome in spontaneous intracerebral hemorrhage. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Pol Camps-Renom, Raquel Delgado-Mederos, Daniel Guisado-Alonso, Alejandro Martínez-Domeño, Luis Prats-Sanchez, Joan Martí-Fábregas. A risk score including plaque inflammation on 18FDG-PET and carotid stenosis predicts early stroke recurrence in traditionally considered "low-risk" patients with carotid atherosclerosis. ESO/WSO Virtual Conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.
- Joan Martí Fàbregas, Raquel Delgado-Mederos, Alejandro Martínez-Domeño, Pol Camps-Renom, Daniel Guisado-Alonso, Marina Guasch-jiménez, Elena Jiménez-Xarrié, Rebeca Marín-Bueno, Luis Prats-Sanchez. Wake-up intracerebral hemorrhage: clinical and radiological characteristics and outcome. ESO/WSO virtual conference (Viena), 7-9 November 2020. https://virtual-eso-wso20.kenes.com/en/hall.

Diffusion Activities

- Ictus, reconèixe'l i actuar. Cycle "Medicina al teu abast". Hospital de Sant Pau, 30 January 2020.
- ¿Cuándo se debe reiniciar la anticoagulación después de un infarto cerebral?, ¿y de una HIC? Papel de la anticoagulación después de microbleeds. Jornadas "Actualización en ictus. Una realidad que ocupa y preocupa. Consideraciones en el paciente mayor" Málaga, 1 February 2020.
- Tractament de prevenció secundària en pacients amb fibril·lació auricular i l'antecedent d'una hemorràgia cerebral. Perspectiva del Neuròleg. XXXIV Reunió de la Societat Catalana de Neurologia. Barcelona, October 2020.

AREA 4 · Neurological, Mental Disorders and Ageing

Neuromuscular Diseases

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Main Lines of Research

Accreditation after audit as a CSUR-ENM centre (2016), ERN-NMD centre (2016), XUEC centre (2019) for rare neuromuscular diseases. ISO certification for the study of specific autoantibodies in ENM (all reviewed annually).

A) Autoimmune neuromuscular diseases (myasthenia and neuropathies)

- Characterization of new target antigens in myasthenia gravis (MG), and immune neuropathies (CIDP, GBS, MMN). Their use as diagnostic and therapeutic biomarkers.
- Nerve damage biomarkers.
- Pathogenesis of newly recognized antigens in both MG and CIDP.
- Analysis of innate immunity in inflammatory myopathies.
- Analysis of the impact of new immunomodulating therapies on IgG4 mediated neuromuscular diseases (NMD).
- Functional aspects of immune system cells (response to ligands, production of antibodies, etc).
- Phase I to III clinical trials in autoimmune neuromuscular diseases.
- Collaborators of the IGOS database for Guillain Barre syndrome.
- Coordinators of the INCBase (international database for CIDP)
- NMD-ES Spanish registry for neuromuscular diseases.

B) Muscular dystrophy, dysferlinopathy and inflammatory myopathies

- Muscle MRI analysis as a biomarker of different muscular dystrophies.
- Role of PDGF in muscular dystrophies fibrosis. Study of nintedanib as an antifibrotic drug in muscular dystrophies.
- Role of fibroadipogenic progenitors in muscular dystrophies
- Natural history of dysferlinopathies. The Jain Foundation International COS Study.
- Study of proteasome and autophagy inhibitors in dysferlin myopathy. Development of cell models of NMDs to study pathogenic mechanisms and drug screening.
- Pathogenic mechanisms in inflammatory myopathies (DM, necrotizing myopathies)
- Clinical trials in muscular dystrophies and metabolic muscle diseases.

C) Amyotrophic lateral sclerosis

- Genetic profile of ALS patients in Spain.
- Biomarkers profile in different ALS phenotypes.
- Cell models of ALS.

Scientific Challenges

- Advance in the knowledge of the immunological mechanisms involved in the pathogenesis of autoimmune neuromuscular diseases (MG, CIDP, MMN).
- Evaluate the use of Nfl and myelin proteins as biomarkers of nerve damage in inflammatory neuropathies
- Develop 2D and 3D cell-based assays to understand the effect of autoantibodies in myasthenia gravis.
- Advance in the knowledge of the pathogenetic mechanisms of inflammatory myopathies (DM, necrotizing myopathies).
- Search for new antigens and develop diagnostic tests with new biomarkers for immune-mediated neuropathies and myasthenia gravis.
- Implement new diagnostic and disease follow-up methods for muscular dystrophies resulting from research into dysferlinopathy and other myopathies, for example biomarkers (miRNA, secretome), MRI, etc.
- Advance in the knowledge of the pathogenetic mechanisms involved in dysferlin deficiency and other muscular dystrophies.
- Search for new genes and biomarkers among the different ALS phenotypes.
- Advance in the knowledge of the pathogenetic mechanisms involved in ALS
- Use of the NMD.ES register to perform research in different NMD.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Genetics in Neurodegenerative Diseases (J. Clarimón)
- Neurobiology of Dementia (A. Lleó)
- Genetic Diseases (P. Gallano)
- Inflammatory Diseases (C. Juárez)

External Collaborations

- Jerome Devaux, researcher CNRS (Institut de Neurosciences de Montpellier, U1051R1), France.
- Dr. Javier Ramón. Grupo de Biosensores y Bioingeniería. IBEC. Barcelona.
- Dr. Antonio del Río. Grupo de Neurobiotecnología Molecular y Celular. IBEC. Barcelona.
- R. Martí, Elena Garcia Arumí, Tomás Pinós. Institut de Recerca Hospital Vall d'Hebron, Barcelona. CIBERER Unit CB 06/07/015.
- Al Chalabi A. King's College, London, UK.
- O. Benveniste. Hôpital Salpetriere, Paris, France.
- K. Nagaraju, J. Jaiswal. Children's Hospital, Washington D.C. USA.
- V. Mouly. Institut de Myologie, Paris, France.
- I. Pinal. National Institutes of Health, Bethesda, MD, USA.
- I. Lundberg. Karolinska Institute, Stockholm, Sweden.
- J. Dalmau. IDIBAPS, Barcelona.
- A. Selva-O'Callaghan. Hospital Vall d'Hebron, Barcelona.
- Bart Jacobs, Erasmus Medical Center, Rotterdam, Netherlands.
- Simon Rinaldi, Oxford University, UK.
- Filip Eftimov, Amsterdam Medical Center, Netherlands.

Active Grants

- Maria Isabel Illa Sendra. Estudios moleculares y celulares en Miastenia Gravis: Correlaciones clínicas y terapéuticas. PI16/01440. Instituto de Salud Carlos III. Duration: 2017-2020. 111,500 €.
- Maria Isabel Illa Sendra. Aproximaciones terapéuticas en distrofias musculares mediante modelos celulares y animales. GEMIO 2016. Fundación Isabel Gemio. Duration: 2016-2020. 160,908.99 €.
- Eduard Gallardo Vigo. Recerca en Malalties Neuromusculars. 2017 SGR 01727. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Rodrigo Álvarez Velasco. Contratos Río Hortega 2018. CM18/00063. Instituto de Salud Carlos III. Duration: 2019-2020. 53,732 €.
- Jorge Alberto Díaz Manera. Avances en técnicas de imagen y terapia en distrofias musculares: evaluación y tratamiento de la fibrosis. PI18/01525. Instituto de Salud Carlos III. Duration: 2019-2021. 107,000 €.
- Xavier Suárez Calvet. Fisiopatogenia y nuevas estrategias terapéuticas en las distrofias musculares. CD18/00195. Instituto de Salud Carlos III. Duration: 2019-2022. 80,598 €.
- Lorena Martín Aguilar. Contratos Rio Hortega 2019. CM19/00042. Instituto de Salud Carlos III. Duration: 2020-2021. 53,732 €.
- Luis Antonio Querol Gutiérrez. Biomarcadores diagnósticos y de daño tisular en neuropatías autoinmunes. PI19/01407. Instituto de Salud Carlos III. Duration: 2020-2022. 102,000 €.
- Ricardo Rojas García. Validación de biomarcadores candidatos para el diagnóstico y la progresión de la Esclerosis Lateral Amiotrófica y estudio de las vías fisiopatogénicas implicadas. PI19/01543. Instituto de Salud Carlos III. Duration: 2020-2022. 102,000 €.
- Maria Isabel Illa Sendra. Estudio de la heterogeneidad de la Miastenia Gravis: Investigación clínica y preclínica mediante la implementación de modelos celulares 2D y 3D y utilización de biosensores. PI19/01774. Instituto de Salud Carlos III. Duration: 2020-2022. 80,000 €.
- Jorge Alonso Pérez. Contratos Río Hortega 2019. CM19/00178. Instituto de Salud Carlos III. Duration: 2020-2022. 53,732 €.
- Rodrigo Álvarez Velasco. Desenvolupament d'un model tridimensional de teixit muscular humà in vitro per a la seva aplicació diagnòstica i terapèutica en la miastenia gravis. SLT008/18/00207. Departament de Salut. Duration: 2019-2022. 93,941.52 €.
- Elena Cortés Vicente. Contratos Juan Rodés 2019. JR19/00037. Instituto de Salud Carlos III. Duration: 2020-2024. 180,000 €.
- Jorge Alberto Díaz Manera. Effect of Nintedanib in muscle fibrosis in a mouse model of sarcoglycanopathy and in the function of human and mouse FAP cells. AFM 22525. The French Muscular Dystrophy Association (AFM-Téléthon). Duration: 2019-2020. 49,200 €.
- Eduard Gallardo Vigo. Aproximaciones terapéuticas en distrofias musculares mediante modelos celulares y animales. GEMIO 2019. Fundación Isabel Gemio. Duration: 2019-2022. 136,363.65 €.
- Eduard Gallardo Vigo. Search of biomakers in Pompe's Disease. SANOFI/GENZYME.GZ-2015-11342. Duration: 2017-2020. 134,920 €.
- Luis Antonio Querol Gutiérrez. Molecular biomarkers of IVIg response in chronic inflammatory demyelinating polyradiculoneuropathy. Instituto Grifols, S.A. Duration: 2019-2020. 95,000 €.
- Jorge Alberto Díaz Manera. Effect of Nintedanib in muscle fibrosis in a mouse model of sarcoglycanopathy and in the function of human and FAP cells. AFM 22525. Duration: 2019-2020. 49,200 €.
- Jorge Alberto Díaz Manera. Boehringer Ingelheim Nintedanib as an antifibrotic drug in two murine models of muscle dystrophy. Duration: 2019-2020. 66,300 €.
- Jorge Alberto Díaz Manera. Caracterización del papel de los precursores fibroadipogénicos en el proceso degenerativo de las distrofias musculares. ACCI86 CIBERER. Duration: 2019-2020. 40,700 €.
- Luis Antonio Querol Gutiérrez. Detección de neurofilamentos en pacientes con enfermedades neuroinmunológicas raras. ACCI87 CIBERER. Duration: 2019-2020. 35,500 €
- Ricardo Rojas Garcia. Improving diagnostic yield and discovering novel genes causing hereditary spastic paraplegias and motor neuropathies using. ACCI85 CIBERER. Duration: 2019-2020. 5,000 €.
- Noemí De Luna Salva. Nueva aproximación farmacológica para el tratamiento la enfermedad de McArdle y otras glucogenosis minoritarias y actualización del registro europeo. ACCI77 CIBERER. Duration: 2019-2020. 13,800 €.
- Eduard Gallardo Vigo. Validació de l'eficàcia dels PS-Liposomes-haAChR-EP per el tractament de la Miastènia Gravis: estudi de generació de tolerancia antígen específica en un model murí de Miastènia Gravis. Ahead Therapeutics. Duration: 2020-2021. 50,000 €.

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

Grants Awarded in 2020

- Luis Antonio Querol Gutiérrez. Contratos para la intensificación de la actividad investigadora 2020. INT20/00080. Instituto de Salud Carlos III. Duration: 2021-2022. 60,000 €.
- Lorena Martín Aguilar. M-AES 2020. MV20/00024. Instituto de Salud Carlos III. Duration: 2021-2021. 7,015 €.
- Xavier Suárez Calvet. New therapies targeting fibroadipogenic cell subpopulations implicated in muscle degeneration. MARATO 202034-10. Fundació La Marató de TV3. Duration: 2021-2022. 110,528 €.
- Luis Antonio Querol Gutiérrez. Precision medicine in chronic inflammatory neuropathy assessment. GBS/CIDP 2020. GBS CIDP Foundation International. Duration: 2020-2021. 50,245.70 €.

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

Doctoral Theses

- Esther Fernández Simón. Estudios fisiopatológicos en distrofias musculares: Biomarcadores pronósticos y aproximaciones terapéuticas. Universitat Autònoma de Barcelona. Directors: Jorge Alberto Díaz-Manera, Noemí de Luna Salvà, Date of defense: 17/06/2020.

Patents

- N de Luna, T. Pinós, R. Martí, E Gallardo. Compounds for treating a glycogen storage disease. CT/EP2020/061469. European. 20/08/2022.

Scientific Production

Total Impact Factor: 251.774 · Mean Impact Factor: 6.294

Almodóvar-Payá A, Villarreal-Salazar M, de Luna N, Nogales-Gadea G, Real-Martínez A, Andreu AL, Martín MA, Arenas J, Lucia A, Vissing J, Krag T, Pinós T. Preclinical Research in Glycogen Storage Diseases: A Comprehensive Review of Current Animal Models. INT J MOL SCI. 2020 Dec 17;21(24):9621. doi: 10.3390/ijms21249621. PMID: 33348688. **IF: 4.556**

Alonso-Perez J., Segovia S., Dominguez-Gonzalez C., Olive M., Mendoza Grimon M.D., Fernandez-Torron R., Lopez de Munain A., Munoz-Blanco J.L., Ramos-Fransi A., Almendrote M., Illa I., Diaz-Manera J., Spanish Pompe registry: Baseline characteristics of first 49 patients with adult onset of Pompe disease Registro español de la enfermedad de Pompe: análisis de los primeros 49 pacientes con enfermedad de Pompe del adulto (2020) MED CLIN-BARCELONA, 154 (3), 80-85. **IF: 1.6350**

Alonso-Perez J., Gonzalez-Quereda L., Bello L., Guglieri M., Straub V., Gallano P., Semplicini C., Pegoraro E., Zangaro V., Nascimento A., Ortez C., Comi G.P., Dam L.T., De Visser M., van der Kooi A.J., Garrido C., et al. New genotype-phenotype correlations in a large European cohort of patients with sarcoglycanopathy (2020) BRAIN, 143 (9), 2696-2708. **IF: 11.3370**

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mutation presenting as distal weakness. Neuropathy or neuromuscular junction dysfunction? J PERIPHER NERV SYST. 2020 Dec 15. doi: 10.1111/jns.12425. Online ahead of print. PMID: 33320396. **IF: 2.46**

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Books or Chapters with ISBN

- I Illa, L Querol, E Gallardo. Autoantibodies in Neuromuscular Disorders. In: Acquired Neuromuscular Disorders: Pathogenesis, Diagnosis and Treatment 2020. Ed. Springer. https://www.springer.com/gp/book/9783319295121
- Ricardo Rojas-García. Chapter 179.2: Enfermedad de Neurona Motora. In: Ciril Rozman. Farreras Rozman, Medicina Interna, 19ª ed. Elsevier España, S. L. U., ISBN 978-84-9113-545-6.
- Ricardo Rojas-García. Chapter 187.2: Neuropatiashereditarias. In: Ciril Rozman. Farreras Rozman, Medicina Interna, 19ª ed. Elsevier España, S. L. U., ISBN 978-84-9113-545-6.

Diffusion Activities

- Miastenia. Evolució i nous tractaments. Continuing education nursing. Hospital de dia Polivalent. Hospital Sant Pau. 14 February 2020
- I. Illa. Miastenia Gravis. Diversidad clínica y tratamiento. 26º Curso Internacional de Investigación en Neurociencias, Instituto Nacional de Ciencias Neurológicas (streaming). Sesión plenaria. Lima. Perú, 28 August 2020.
- I. Illa. Alternativas terapéuticas a la IGEV en Neuroimmunología. XXIV Curso de Introduccion a la Farmacoterapia de los Hemoderivados. Hospital Vall d'Hebron. Virtual, 16 November 2020.
- I. Illa. Nodal and paranodal autoantibodies. 8th Annual Meeting of The Korean Society of Neuromuscular Disorders (KNMD). Plenary Lecture. Streaming, 5 December 2020.
- I. Illa, E. Cortés. Miastenia Gravis. Jornada d'actualització en el tractament de malalties neuromusculars. Societat Catalana de Neurologia. 27 February 2020.
- Sistema inmune y autoinmunidad. E. Cortés, Características clínicas de la miastenia según la edad de inicio R. Álvarez i Tratamiento actual y nuevos tratamientos en miastenia I. Illa/E. Cortés. XIII Congreso Nacional de Miastenia 2020. AMES. 29 February 2020.
- E. Cortés Miastènia Gravis. Sessió Patologia Neuromuscular. VI Curs de Formació en Neurologia Clínica. March 2020.
- E. Cortés. Myasthenia Gravis: Clinical evaluation and current limitations. ICNMD 2020 Webinar. 2020.
- E. Cortés. Miastenia Gravis farmacorresistente: Características clínicas y terapéuticas. Oral communication. SEN 2020. Virtual, 25 November 2020.
- E. Gallardo. European Reference Network (ERN) Euro-NMD NMJ Working Group Session. Autoantibody testing in Myasthenia gravis: Status quo and future developments. Virtual, 10 July 2020.
- R Rojas. Abordaje de la Atrofia Muscular Espinal (AME) en adultos. Roche Neurociencias: Un viaje al futuro. 22 October 2020.
- R. Rojas. Procés diagnòstic de l'ELA i atenció integral Esclerosi Lateral Amiotròfica (ELA) i Malalties de la Motoneurona (MMN). XI Congrés de la Societat Catalano-Balear de Cures Pal·liatives. Barcelona, 14 February 2020.
- M. Olivé. El llarg camí per descriure una nova malaltia muscular. Residència d'Investigadors. Barcelona, 23 November 2020.
- M. Olivé. Miopatías miofibrilares EVELAM. Escuela de verano eurolatinoamericana de miología. Virtual, 30 November - 5 December 2020.
- L. Querol. Dysimmune Nodo-Paranodopathies. ICNMD. Virtual, 11-14 September 2020.
- L. Querol. Chair of the Scientific Committee. PNS Virtual Meeting, 27-30 June 2020.
- L. Querol. Silenciadors gènics en el tractament de l'amiloidosi: nou algoritme. SCN Neurologia, 1 October 2020.
- L. Querol. Antibodies in Inflammatory Neuropathies: What to test, how to test, why to test. AANEM. Virtual, 9 October 2020.

AREA 4 · Neurological, Mental Disorders and Ageing

Parkinson Disease and Movement Disorders

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Main Lines of Research

Cognitive impairment, behavioural dysfunctions and other non-motor symptoms in Parkinson Disease (PD)

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

Huntington's disease (HD)

- Characterization of the natural course of HD in large and international cohort and studies (Enroll-HD).
- Study of the neural correlates of clinical progression, cognitive performance, mild cognitive impairment, dementia and behavioural alterations in HD using neurophysiological techniques (event-related brain potentials), structural, functional, and molecular neuroimaging.
- Identification of potential neuroimaging, blood-based, muscular tissue, CSF and clinical biomarkers of disease progression in premanifest and manifest HD.
- Study of the prevalence and neural substrates of behavioural alterations in premanifest and manifest HD.
- Development and validation of HD-specific tools for cognitive and functional assessment to detect subtle changes in cognitive performance and treatment response.
- Study of the effect of intermediate alleles and homozygosis on the clinical presentation of HD.
- Data science applied to large HD databases such as Enroll-HD and Registry.
- Identification of different cognitive phenotypes in HD.

Progressive supranuclear palsy (PSP)

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

Essential tremor

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

Scientific Challenges

1. Parkinson's Disease (PD)

A. General

- COPPADIS: COhort of Patients with PArkinson's DIsease in Spain (national collaborative study).
- Intensification for Specialist Physicians of the "Strategic Research and Innovation Plan" (PERIS) Expedient Number: SLT008 / 18.

B. Cognition

- DuoCog: randomized, double blind, crossover study (immediate vs. intraduodenal levodopa effect on cognition and mood).

C. Neuropsychiatric disorders

- Prospective study: new method for music therapy in apathy and depression.
- Choral singing in patients with PD. Study of its effects on apathy and depression.

- Effects of mindfulness on the presence and development of TCI.
- Natural history and neural correlates of psychotic symptoms in PD patients.

D. Advanced PD

- Nutritional analysis in patients with intraduodenal levodopa.
- Prospective study of cognition, behaviour, sleep and quality of life in patients with deep brain stimulation (DBS) and intraduodenal levodopa.
- Prospective study of patient satisfaction after DBS.
- Subthalamic DBS study in PD: functional reorganization of brain networks and repercussion on postsurgical complications.
- Monitoring mobility using a sensor for therapeutic purposes in fluctuating PD. Multi-centre Clinical Trial (INV-PROC-A118).

2. Huntington's Disease (HD)

- Coordination of the "Cognitive Phenotype Working Group" (European Huntington's Disease Network).
- Spanish Coordination of Enroll-HD: A Prospective Registry Study in a Global Huntington's Disease Cohort (PI in Spain: J. Kulisevsky)
- Validation of cognitive (HD-CRS) and functionality (HD-CFRS) scales.
- Development and validation of new tools for cognitive and functional assessment of cognitive impairment in HD.

3. Tremor

- Development of a tremor diagnosis system using a mobile app and software. Joint project with Mediktor company.
- Perampanel for essential tremor. "Real life" study.

4. Other Neurodegenerative Diseases

- Neural correlates of hypofrontality in different subtypes of progressive supranuclear palsy (PSP).
- Neuropsychiatric and behavioural symptoms in PSP subtypes.
- FXTAS: collaborative research between the Genetics area of the Hospital Clínic (Barcelona) and the Associació Catalana X Fràgil (ACXF).
- Collaboration with GEMT-CAT (Movement Disorders Group of the Catalan Neurology Society) on the Consensus Document on Genetics in Movement Disorders.

5. Neuroimaging and Data Engineering

- Dynamic connectivity models in cognitive impairment in PD. In collaboration with the Centre for Brain and Cognition, Pompeu Fabra University, Barcelona.
- Neuroimaging and neurophysiology of hallucinations in PD: Project: "Unravelling dysfunctional brain networks in patients with Parkinson's disease suffering from hallucinations", in collaboration with Prof. Blanke, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
- Effects of dopaminergic treatment of PD on neurocognitive networks. Collaborative study with Hospital del Mar, Barcelona.
- Functional and structural brain correlates in HD: cognition, apathy, depression, irritability, biomarkers, oxytocin levels. Collaborative study with Hospital de Burgos (HUBU).
- Analysis of collaborative databases ("big-data"): ENROLL (EH), PPMI (EP), COPPADIS (EP).
- Analysis of local databases: PSP, EH, EP.

6. Parkinson Disease and other Movement Disorders' Laboratory

- Processing, biobanking, and biomarker analyses of human liquid biological samples (plasma, serum, CSF and urine) and development and optimization of methods for extracellular vesicle isolation from different biofluids in movement disorders.
- Identification of molecular signatures in brain, plasma, CSF and urine extracellular vesicles in Huntington's disease to improve disease prognosis and stratification of patients in clinical trials.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Active collaboration with the Research groups of Neuroradiology, Nuclear Medicine and Psychiatry.

External Collaborations

- Collaboration with the Cognition and Brain Plasticity Group at the Bellvitge Health Science Campus at the University of Barcelona adscribed to the Department of Basic Psychology, Faculty of Psychology - University of Barcelona and the IDIBELL (Institut d'Investigació Biomèdica de Bellvitge).
- Collaboration with the Computational Neuroscience group, Departament de Tecnologies de la Informació i les Comunicacions, Universitat Pompeu Fabra, Barcelona.
- Collaboration with the Functional Genomics of Neurodegenerative Diseases Group, at the Neuroscience Institute, Universitat de Barcelona.
- Collaboration with Professor Olaf Blanke, Laboratory of Cognitive Neuroscience, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
- Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas (CIBERNED), Instituto de Salud Carlos III.
- International Movement Disorders Society (MDS). Task Force for Developing Rating Scales in Parkinson's Disease (Subcommitee for Cognitive Evaluation).
- MDS Task Force for Mild Cognitive Impairment in Parkinson's Disease.
- MDS Task Force for Evidence Based Medicine in Huntington's Disease.
- Spanish Coordinator of the European Huntington Disease Network and the ENROLL Study (Cure for Huntington's Disease International - CHDI).
- Coordination of the Cognitive Phenotype Working Group of the European Huntington's Disease Network (EHDN).

Active Grants

- Jaime Kulisevsky Bojarski. Huntington's Disease Network. EHDN. Duration: 2010-2021. 199,560 €.
- Jaime Kulisevsky Bojarski. Centro de Investigación Biomédica en Red de Enfermedades Neurodegenerativas. CIBERNED. CB06/05/0047. Ministerio de Sanidad y Política Social. Duration: 2006-2020. 961,862.89 €.
- Jaime Kulisevsky Bojarski. Correlatos anatómico-funcionales de los trastornos del control de impulsos y apatía en la enfermedad de Parkinson. PI15/00962. Instituto de Salud Carlos III. Duration: 2016-2020. 61,500 €.
- Jesús Pérez Pérez. Contratos Juan Rodés 2016. JR16/00034. Instituto de Salud Carlos III. Duration: 2017-2020. 135,000 €.
- Jesús Pérez Pérez. Estudio longitudinal de los correlatos clínicos y neuroradiológicos asociados a los niveles de huntingtina y otros biomarcadores en LCR y plasma en la enfermedad de Huntington. PI17/01885. Instituto de Salud Carlos III. Duration: 2018-2021. 97,000 €.

- Jaime Kulisevsky Bojarski. Grup de Trastorns del Moviment de l'Hospital de la Santa Creu i Sant Pau. 2017 SGR 00935. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Jaime Kulisevsky Bojarski. Desarrollo de un medicamento para el tratamiento de los movimientos coreicos asociados a la enfermedad de Huntington. RTC-2017-6354-1. Ministerio de Economía y Competitividad. Duration: 2018-2020. 96,672 €.
- Jaime Kulisevsky Bojarski. Historia natural y correlatos neuronales de los síntomas psicóticos en pacientes con enfermedad de Parkinson. PI18/01717. Instituto de Salud Carlos III. Duration: 2019-2021. 77,000 €.
- Ignacio Aracil Bolaños. Contratos Río Hortega 2019. CM19/00156. Instituto de Salud Carlos III. Duration: 2020-2021. 53,732 €.
- Javier Pagonabarraga Mora. Disfunció de xarxes neuronals en el desenvolupament de trastorns cognitius, conductuals i psiquiàtrics en la malaltia de Parkinson i altres Trastorns del Moviment. SLT008/18/00088. Departament de Salut. Duration: 2019-2021. 160,427.87 €.
- Frederic Vicenç Sampedro Santaló. Contratos técnicos bioinformáticos de apoyo a los IIS 2019. CA19/00007. Instituto de Salud Carlos III. Duration: 2020-2021. 53,732 €.
- Saül Indra Martínez Horta. Neurobiological mechanisms subserving the differential expression and rate of progression of cognitive impairment in Huntington's disease. HDSA 2019. Huntington's Disease Society of America. Duration: 2019-2021. 111,389.46 €.
- R. Pérez-González. Huntington's disease brain pathology signatures in exosomes: potential markers of disease progression. Seed funds Project (2020-2021). European Huntington's Disease Network (EHDN). 32,783.59 €.

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

Scientific Production

Total Impact Factor: 138.839 · Mean Impact Factor: 4.628

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Abdelnour C., Ferreira D., Oppedal K., Cavallin L., Bousiges O., Wahlund L.O., Hort J., Nedelska Z., Padovani A., Pilotto A., Bonanni L., Kramberger M.G., Boada M., Westman E., Pagonabarraga J., Kulisevsky J., Blanc F., Aarsland D., The combined effect of amyloid-β and tau biomarkers on brain atrophy in dementia with Lewy bodies (2020) NEUROIMAGE-CLIN, 27. **IF: 4.3500**

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Kulisevsky J., Bejr-Kasem H., Martinez-Horta S., Horta-Barba A., Pascual-Sedano B., Campolongo A., Marin-Lahoz J., Aracil-Bolanos I., Perez-Perez J., Izquierdo-Barrionuevo C., de Fabregues O., Puente V., Crespo-Cuevas A., Calopa M., Pagonabarraga J., Subclinical affective and cognitive fluctuations in Parkinson's disease: a randomized double-blind double-dummy study of Oral vs. Intrajejunal Levodopa (2020) J NEUROL, 267 (11), 3400-3410. **IF: 3.9560**

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Marin-Lahoz J., Martinez-Horta S., Sampedro F., Pagonabarraga J., Horta-Barba A., Bejr-kasem H., Boti M.A., Fernandez-Bobadilla R., Pascual-Sedano B., Perez-Perez J., Aracil-Bolanos I., Gironell A., Gomez-Anson B., Kulisevsky J., Measuring impulsivity in Parkinson's disease: a correlational and structural neuroimaging study using different tests (2020) EUR J NEUROL. **IF: 4.5160**

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Diffusion Activities

Dissemination Activities to Society

- J. Kulisevsky. Cognición y Neuropsiquiatría en la EP; Entorno Digital – COVID-19. Reunión Post-MDS, 2020.
- J. Pagonabarraga. Aspectos conceptuales y manejo de síntomas depresivos en enfermedades neurológicas. Curso de Depresión en enfermedades neurológicas. Reunión Anual de la SEN, 2020.
- J. Pagonabarraga. Manejo de los síntomas no motores de la enfermedad de Parkinson. Curso del Grupo Español de Trastornos del Movimiento. Reunión Anual de la SEN 2020.
- J. Pagonabarraga. Neuroanatomofisiología para logopedas. Máster de Rehabilitación en Logopedia, 2020.
- J. Pagonabarraga. Diferencias entre Parkinson y Parkinsonismos atípicos. Apuntes de Neurología, 3ª edición, 2020.
- J. Pagonabarraga. Neuroquímica dels ganglis basals: novetats i implicaciones clíniques i terapèutiques. Societat Catalana de Neurologia, 2020.
- J. Pagonabarraga. Trastorno esquizofrenifrome como forma de inicio de enfermedad de Huntington juvenil. Reunión Anual de Neurofarmacología, 2020.
- C. Izquierdo. Consecuencias físicas de la pandemia en las personas con Parkinson. Federación Española de Parkinson, 2020.
- S. Martínez-Horta. Neuropsicología de los parkinsonismos atípicos. Workshop. XXVII Congreso Anual de la Sociedad Española de Enfermería Neurológica and III Congreso Internacional de Enfermería Neurológica, 2020.
- S. Martínez-Horta. Evaluación neuropsicológica y diagnóstico diferencial de los parkinsonismos atípicos. Course. Colegio Oficial de la Psicología de Cataluña, 2020.
- S. Martínez-Horta. Actividad paranormal (y otras historias fantásticas) en Trastornos del Movimiento. Ponencia en II Jornadas Psicología y Cerebro de la Universidad de Almería, 2020.
- S. Martínez-Horta. Manejo conductual en la enfermedad de Huntington. Encuentro Anual Enfermedad de Huntington Chile, 2020.
- S. Martínez-Horta. Enfermedad de Huntington: Aspectos mentales y conductuales. Webinar organised by Roche pacientes, 2020.
- S. Martínez-Horta; J. Pérez-Pérez; A. Campolongo; J. Kulisevsky. XVIII Jornadas técnicas de la Enfermedad de Huntington, 2020.
- B. Pascual; A. Campolongo. Moderators. Webinar: La vida cotidiana de un paciente con demencia. Las enfermedades Neurodegenerativas en el Siglo XXI. Universitat Oberta de Catalunya, 22 September 2020.

Scientific Dissemination Activities

- I. Aracil; J. Pagonabarraga; F. Sampedro; J. Pujol; C. Soriano; J. Kulisevsky. Efectos del tratamiento dopaminérgico sobre las redes cognitivas en la enfermedad de Parkinson. LXXII Reunión Anual de la Sociedad Española de Neurología. Virtual, 2 December 2020.
- H. Bejr-Kasem; S. Martínez-Horta; J. Pagonabarraga; J. Marín-Lahoz; A. Horta-Barba; F. Sampedro; F. Ruiz; I. Aracil; J. Pérez-Pérez; A. Campolongo; C Izquierdo; B Pascual-Sedano; J Kulisevsky. El papel del control atencional sobre las interferencias en las alucinaciones menores en la enfermedad de Parkinson. LXXII Reunión Anual de la Sociedad Española de Neurología. Virtual, 2 December 2020.
- A. Izquierdo; I. Aracil; J. Kulisevsky; A. Gironell; A. Campolongo; R. Rodríguez; M.J. Álvarez; F. Sampedro; B. Pascual-Sedano. Localización espacial y tractografía en relación con la apatía tras cirugía de estimulación cerebral profunda en la enfermedad de Parkinson. LXXII Reunión Anual de la Sociedad Española de Neurología, 12 September 2020.
- S. Martínez-Horta; J. Pérez-Pérez; A. Horta-Barba; F. Sampedro; R. Perez-Gonzalez; A. Campolongo; C. Izquierdo; T Xucla; M Guasch; E Rivas; A Puig-Davi; J Pagonabarraga; J Kulisevsky. Los niveles de proteína TAU se asocian con patrones específicos de afectación cerebral y neuropsicológica en la enfermedad de Huntington. LXXII Reunión Anual de la Sociedad Española de Neurología. Virtual, 2 December 2020.
- A. Puig-Daví; F. Sampedro; J. Pérez-Pérez; A. Horta-Barba; J. Pagonabarraga; J. Kulisevsky; S. Martínez-Horta. Empatía cognitiva y afectiva en la enfermedad de Huntington: Fenomenología y correlatos clínicos y

cerebrales. LXXII Reunión Anual de la Sociedad Española de Neurología. Virtual, 2 December 2020.

- J. Pagonabarraga; A. Horta-Barba; I. Illan-Gala; J. Marín-Lahoz; H. Bejr-Kasem; B. Pascual-Sedano; J. Pérez-Pérez; I. Aracil; S. Martínez-Horta; F. Sampedro; J. Kulisevsky. Progressive Supranuclear Palsy - Oculomotor Rating Scale (PSP-ORS): una nueva escala clínica para la valoración de las alteraciones oculomotoras en la PSP. LXXII Reunión Anual de la Sociedad Española de Neurología. Virtual, 2 December 2020.
- H. Bejr-Kasem; F. Sampedro; J. Pagonabarraga; .J Kulisevsky. Hallucinations in PD: Clinical and Neuroimaging correlates. Advances in Alzheimer's and Parkinson's Therapies (AAT-AD/PD 2020). Vienna, Virtual, 2 April 2020.
- J. Pagonabarraga; R. Pérez-González; H. Bejr-Kasem; J. Marín-Lahoz; A. Horta-Barba; I. Aracil-Bolaños; F. Sampedro; S. Martínez-Horta; J. Pérez-Pérez; B. Pascual-Sedano; J. Kulisevsky. Increased neurofilament light chain plasma levels as a biological marker of mild cognitive impairment in Parkinson's disease. Movement Disorders Society International Congress 2020. 12 September 2020.
- H. Bejr-Kasem; J. Pagonabarraga; F. Sampedro; S. Martínez-Horta; R. Pérez-Gonzalez; J. Marín-Lahoz; A. Horta-Barba; I. Aracil-Bolaños; A. Campolongo; C. Izquierdo; J. Pérez-Pérez; B. Pascual-Sedano; J. Kulisevsky. Minor hallucinations in Parkinson's disease are associated with increased neurofilament plasma levels and reduced white-matter integrity in the inferior longitudinal fasciculus. Movement Disorders Society International Congress 2020. 12 September 2020.
- S. Martínez-Horta; J. Pérez-Pérez; R. Pérez-González; A. Horta-Barba; F. Sampedro; E. Rivas-Asensio; T. Xucla; M. Guash; A. Campolongo; C. Izquierdo; J. Pagonabarraga; J. Kulisevsky. TAU pathology contributes to specific patterns of structural brain damage and neuropsychological heterogeneity in Huntington's disease. Movement Disorders Society International Congress 2020, 12 September 2020.
- S. Martínez-Horta. Neuropsicología del diagnóstico diferencial en enfermedad de Parkinson vs parkinsonismos atípicos. XII Congreso Nacional de Neuropsicología. Sevilla, 6 March 2020.
- J. Kulisevsky. Enfoque terapéutico del deterioro cognitivo en la Enfermedad de Parkinson" y "Perfil Cognitivo en Enfermedad de Parkinson. X Simposio Colombiano de Movimientos Anormales. Virtual, 29 August 2020.
- J. Pagonabarraga. Rotigotina en enfermedad de Parkinson: Uso acorde a perfiles clínicos en el mundo real. X Simposio Colombiano de Movimientos Anormales. Virtual, 29 August 2020.
- J. Kulisevsky. Enfermedad de Parkinson: Qué hay de nuevo? Cuarentena Académica. Movimientos Anormales. Sociedad Salteña de Neurología. Virtual, 5 June 2020.
- J. Kulisevsky. Hallutinations in Parkinson's Disease:Clinical and Neuroimaging Correlates. XIV FORO CIBERNED. Virtual, 19 October 2020.

AREA 4 · Neurological, Mental Disorders and Ageing

Molecular Neuropharmacology

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Roch Alba, Gerard (UAB)
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Main Lines of Research

Chronic pain is an important clinical problem due to the low efficacy of conventional treatments and their numerous side effects. Chronic pain is also accompanied by affective disorders such as depression, anxiety, and memory deficits, which exert a negative influence on the perception of pain, creating a vicious circle that contributes towards impairing patients' quality of life. At present, treating chronic pain and its linked emotional disorders poses a major challenge.

Our main objective is to find new treatments that effectively relieve chronic pain and the associated comorbidities by using pharmacological, molecular, and genetic techniques.

Main research lines:

- New strategies for the treatment of chronic pain. To identify new drugs capable of alleviating inflammatory, osteoarthritis, and/or neuropathic pain in different preclinical pain models and to investigate the precise mechanisms underlying their effects.
- New therapies for the emotional disorders associated with chronic pain. To investigate the role played by different gaseous neurotransmitters in the modulation of anxiety- and depressive-like behaviours and/or the cognitive deficits accompanying persistent chronic pain.
- Neuropharmacology of opioids and cannabinoids. To establish new strategies to maximise the analgesic effects of opioids and cannabinoids during chronic pain, while avoiding the development of side effects as a result of administering high and/or continued doses of these drugs.
- New strategies for the treatment of diabetic neuropathy. To identify new approaches to inhibiting oxidative stress and neuropathy, two of the major complications associated with diabetes, by evaluating the therapeutic action of specific molecules in different preclinical models of diabetes.

Scientific Challenges

- To identify new pharmacological compounds that effectively abolish chronic pain with few side effects and whose use can be transferred to clinical practice and/or be patentable. To evaluate the analgesic, antidepressant and/or anxiolytic effects of hydrogen sulfide in animals with chronic osteoarthritis, inflammatory, or neuropathic pain; the mechanism of action of these compounds in specific areas of the central and peripheral nervous systems; and their effects on the functional disability linked with osteoarthritis.
- Oxidative stress is one of the principal mechanisms involved in the development and persistence of chronic pain. To identify new antioxidant compounds as potential therapeutic targets and to evaluate their effects on proinflammatory signals and plasticity changes caused by nerve injuries, chemotherapeutic agents, or metabolic disorders.
- To study the interaction between carbon monoxide and other gaseous neurotransmitters at the molecular and behavioural levels. To evaluate the effects of these combinations on the modulation of nociceptive responses, emotional disorders, and locomotory activity.
- To evaluate the neuroprotective, anti-apoptotic and antioxidant mechanisms implicated in the modulation of inflammatory pain induced by the activation of the heme oxygenase 1/carbon monoxide signalling pathway in specific brain areas.
- To advance knowledge of the molecular mechanisms involved in the analgesic effects of opioids and cannabinoids. To enhance the analgesic actions of mu- and delta-opioid receptor agonists and cannabinoid 2 receptor agonists in chronic pain through their coadministration with specific activators of gaseous neurotransmitters and to evaluate their effects on emotional and/or cognitive disorders associated with chronic pain.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Metabolic Bases of Cardiovascular Risk

External Collaborations

- Dra. Christie Ramos Andrade Leite-Panissi. University of São Paulo. Brazil.
- Dr. Gianfranco Balboni. University of Calgari. Italy.
- Dra. Loredana Salerno. University of Catania, Italy.
- Dra. Valeria Pittalà. University of Catania, Italy.
- Dr. Roberto Motterlini. INSERM U955. University Paris-Est, France.
- Dr. Luciano Saso, University of Sapienza, Italy.
- Dra. Lydia Giménez-Llort. Universitat Autònoma de Barcelona, Spain.
- Dr. Carles Sindreu. Universitat de Barcelona. Spain

Active Grants

- Olga Pol Rigau. Nuevos enfoques para el tratamiento del dolor crónico y comorbilidades asociadas. PI18/00645. Instituto de Salud Carlos III. Duration: 2019-2021. 97,000 €.
- Rafael Alvez Cazuza. HO-CO pathway activation and NOS2 depletion in inflammatory pain aversiveness and nociception: possible role of μ– and δ-opioid receptors modulation. 88887.368311/2019-00. Fundaçâo CAPES. Programa Institucional de Internacionalização. Duration: 2019-2020. 7,800 €.

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

Doctoral Theses

- Rafael Alves Cazuza. Participação da via HO-CO em áreas encefálicas do sistema límbico na modulação da dor: recrutamento de receptores μ e δ opióides, fatores de transcrição, neurotróficos e oxidativos. University of São Paulo. Brazil. Directors: Olga Pol Rigau, Christie Leite-Panissi. Date of defense: 09/12/2020.

Scientific Production

Total Impact Factor: 13.149 · Mean Impact Factor: 4.383

Batallé G., Cabarga L., Pol O. The inhibitory effects of slow-releasing hydrogen sulfide donors in the mechanical allodynia, grip strength deficits and depressive-like behaviors associated with chronic osteoarthritis pain (2020) ANTOXIDANTS, 9, 31. doi: 10.3390/antiox9010031. **IF: 5.014**

Cabarga L., Batalle G., Pol O. Treatment with slow-releasing hydrogen sulfide donors inhibits the nociceptive and depressive-like behaviours accompanying chronic neuropathic pain: Endogenous antioxidant system activation (2020) J PSYCHOPHARMACOL, 34,737-749. doi: 10.1177/0269881120913154. **IF: 3.121**

Redondo A., Riego G., Pol O. The Antinociceptive, Antioxidant and Anti-Inflammatory Effects of 5-Fluoro-2-Oxindole during Inflammatory Pain (2020) ANTOXIDANTS, 9, 1249. doi: 10.3390/antiox9121249. **IF: 5.014**

Diffusion Activities

Conferences and Communications in International and National Meetings

- Pol O, Ferreira-Chamorro P, Redondo A, Riego G. The administration of 5-fluoro-2-oxindole increases the antinociceptive effects of morphine and inhibits neuropathic pain. 12th FENS Forum of Neuroscience. Glasgow, United Kingdom. 2020.
- Ferreira-Chamorro P, Redondo A, Riego G, Pol O. Treatment with 5-Fluoro-2-Oxindole inhibits neuropathic pain and potentiates the local analgesic effects of morphine. World Congress on Pain (IASP). Amsterdam, Netherlands. 2020.
- Ferreira-Chamorro P, Redondo A, Riego G, Pol O.The Induction of NAD(P)H quinone oxidoreductase 1 alleviates inflammatory pain and improves the local analgesic effects of morphine. World Congress on Pain (IASP). Amsterdam, Netherlands. 2020.
- Batallé G, Cabarga L, Pol O. Hydrogen sulfide donors inhibit the allodynia, grip strength deficits and depressive-like behaviors associated with chronic osteoarthritis pain. World Congress on Pain (IASP). Amsterdam, Netherlands. 2020.
- Cabarga L, Batallé G, Pol O.Treatment with hydrogen sulfide donors inhibits the nociceptive responses and the emotional disorders associated with chronic neuropathic pain by activating the antioxidant system. World Congress on Pain (IASP). Amsterdam, Netherlands. 2020.
- Redondo A, Riego G, Pol O. The administration of 5-fluoro-2-oxindole inhibits inflammatory pain and augments morphine antinociceptive actions. 22nd International Conference on Oxidative Stress Reduction, Redox Homeostasis and Antioxidants. Paris, France. 2020.

Master Theses Directed

- Aina Porta Darbra. The treatment with slow-releasing hydrogen sulfide donors produces antinociception and enhances the expression and analgesic effects of delta opioid receptors in an inflammatory pain model. Institut de Recerca-IIB Sant Pau and Universitat Autònoma de Barcelona. Director: Olga Pol Rigau

Supervised Graduate Internships

- Sergi Bravo Bravo. CORM-2 and CoPP in the treatment of chronic inflammatory pain in mice. Institut de Recerca-IIB Sant Pau and Universitat Autònoma de Barcelona. Director: Olga Pol Rigau

Stays of Doctoral Students from Other Centers in Our Group

- Rafael Alves Cazuza. Laboratory of Neurophysiology of Pain and Behavior. Department of Psychology. Faculty of Philosophy, Science and Letters of Ribeirão Preto. University of São Paulo. Brazil.

Other Activities

- Olga Pol Rigau. Guest Editor of the journal ANTIOXIDANTS in the special issue "Antioxidants in Chronic Pain". D1 in Food Science & Technology and Q1 in Medicinal Che

AREA 4 · Neurological, Mental Disorders and Ageing

Pharmacological Research in Humans

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Gich Saladich, Ignasi Josep (FGS)
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Martínez Bonifacio, David (IR)
Martínez Colomer, Juan (IR)
Martínez Dominguez, Pura (IR)
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Mercader Segui, Esteve (IR)
Molina Perelló, Pol (IR)
Mora Amargós, Sara (IR)
Puntes Rodríguez, Montserrat (IR)
Sánchez Núñez, Isabel (IR)

Main Lines of Research

Clinical trials with no therapeutic benefits to volunteer participants

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

Neuro-physio-pharmacology of sleep/wake states

- Investigate human brain activity in sleep and wakefulness, mechanisms involved in these states, problems derived from sleep disturbances and possible interventions.
- Approach the phenomenon as a continuum: appropriate interpretation of the impact of a certain intervention, whether pharmacological or not, should take into account the complementarity of evaluations performed during sleep and during wakefulness.
- Develop psychomotor performance tests, subjective evaluation scales and pupillometric tests.

Scientific Challenges

- Consolidate and strengthen leadership in this field in Spain, consolidate relationships with the pharmaceutical industry on a national level and strengthen and extend relations abroad with multinational enterprises and industries from other sectors.
- Broaden the range of questions to address in research projects along the lines of the neuro-physio-pharmacology of sleep/wake states, focusing on pharmacotherapeutic objectives and also on physiopathological objectives in related fields, such as dreams.
- Develop neurophysiological recording performance in outpatient conditions, simplifying participation of volunteers but without lowering the quality of data obtained (non-negotiable element of their application as a research variable).
- Promote dissemination of our activity with a dual objective: to return the knowledge generated to society and to demystify research in humans, bringing it closer to the community in order to foster participation in clinical trials (particularly among specific sectors of the population, such as the elderly).
- Set up educational activities related to our two main research lines: the application of good clinical practices in clinical research into sleep medicine and the medical (pathology, and treatment) and social (quality of life, prevention of accident risk) consequences.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Parkinson Disease and Movement Disorders
- Sant Pau Memory Unit
- Neurobiology of Dementia
- Clinical Psychiatry
- Chronic Respiratory Diseases
- Pituitary Gland Disorders
- Oncology/Haematology and Transplantation
- Ageing Institute

External Collaborations

- Phase I-II clinical trials for national and international pharmaceutical companies.
- Scientific advisement and study designs about clinical trials for national and international pharmaceutical companies.
- Collaborations with pharmaceutical departments of universities.

Active Grants

- Rosa Maria Antonijoan Arbós. I+D Fase 1 de nuevos inhibidores de quinasas como medicamentos para enfermedades que cursan en el eje de inflamación, fibrosis y cáncer. RTC-2017-6403-1. Ministerio de Economía y Competitividad. Duration: 2018-2020. 240,655.35 €.
- Rosa Maria Antonijoan Arbós. Investigación y Desarrollo Fase I de nuevos inhibidores de quinasas como medicamentos para enfermedades que cursan en el eje de inflamación, fibrosis y cáncer. RTC-2018-6403-1. 260,107.50 €.

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

Grants Awarded in 2020

- Rosa Maria Antonijoan Arbós. Descubrimiento y desarrollo de nuevos tratamientos Inmuno-Oncológicos. RTC2019-006865-1. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2022. 251,174 €.
- Rosa Maria Antonijoan Arbós. Descubrimiento y desarrollo de nuevos tratamientos Inmuno-Oncológicos y anti-fibróticos con efecto local INMUNORGAN. RTC2019-007449-1. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2022. 137,574 €.
- Rosa Maria Antonijoan Arbós. Estudio de una nueva estrategia terapéutica para tratar la infertilidad femenina basada en el compuesto OXO-001. RTC2019-007454-1. Ministerio de Ciencia, Innovación y Universidades. Duration: 2020-2021. 242,382 €.

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

Scientific Production

Total Impact Factor: 28.893 · Mean Impact Factor: 4.128

Alvarez G., Sola I., Sitja-Rabert M., Fort-Vanmeerhaeghe A., Gich I., Fernandez C., Bonfill X., Urrutia G., A methodological review revealed that reporting of trials in manual therapy has not improved over time (2020) J CLIN EPIDEMIOL, 121, 32-44. **IF: 4.9520**

Bollo J., Turrado V., Rabal A., Carrillo E., Gich I., Martinez M.C., Hernandez P., Targarona E., Randomized clinical trial of intracorporeal versus extracorporeal anastomosis in laparoscopic right colectomy (IEA trial) (2020) BRIT J SURG, 107 (4), 364-372. **IF: 5.6760**

Cassado J., Simo M., Rodriguez N., Porta O., Huguet E., Mora I., Girvent M., Fernandez R., Gich I., Prevalence of levator ani avulsion in a multicenter study (PAMELA study) (2020) ARCH GYNECOL OBSTET, 302 (1), 273-280. **IF: 2.2830**

Corrochano M., Jimenez B., Millon J., Gich I., Rambla M., Gil E., Caparros P., Macho R., Souto J.C., Patient self-management of oral anticoagulation with vitamin K antagonists in everyday practice: Clinical outcomes in a single centre cohort after long-term follow-up (2020) BMC CARDIOVASC DISOR, 20 (1), 166-. **IF: 2.0780**

Garcia-Patterson A., Ovejero D., Minambres I., Chico A., Gil P.A., Martinez M.-J., Adelantado J.M., de Leiva A., Gich I., Desoye G., de Mouzon S.H., Corcoy R., Both glycaemic control and insulin dose during pregnancy in women with type 1 diabetes are associated with neonatal anthropometric measures and placental weight (2020) DIABETES-METAB RES. **IF: 3.3140**

Molto C., Hwang T.J., Borrell M., Andres M., Gich I., Barnadas A., Amir E., Kesselheim A.S., Tibau A., Clinical benefit and cost of breakthrough cancer drugs approved by the US Food and Drug Administration (2020) CANCER-AM CANCER SOC, 126 (19), 4390-4399. **IF: 5.7420**

Riudavets M., Mosquera J., Garcia-Campelo R., Serra J., Anguera G., Gallardo P., Sullivan I., Barba A., del Carpio L., Barnadas A., Gich I., Majem M., Immune-Related Adverse Events and Corticosteroid Use for Cancer-Related Symptoms Are Associated With Efficacy in Patients With Non-small Cell Lung Cancer Receiving Anti-PD-(L)1 Blockade Agents (2020) FRONT ONCOL, 10. **IF: 4.8480**

Other Publications

- Ballester MR, Puntes M, Coimbra J, Perelló J, Gich I, Antonijoan MR. Pharmacokinetics, safety, and tolerability of Pentoxifylline intravaginal gel for subfertile/infertile couples with low sperm quality: phase I randomized controlled clinical trial in healthy women. Vol 21:1-10, TRENDS MED 2020, ISSN: 1594-2848. DOI: 10.15761/TiM.1000263

AREA 4 · Neurological, Mental Disorders and Ageing

Mental Health

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De Diego Adeliño, Francisco Javier (FGS)
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Roldan Bejarano, Alejandra (IR)
Soler Ribaudi, Joaquín (FGS)
Tiana Sastre, Thais (FGS)

Main Lines of Research

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

Scientific Challenges

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

Research into psychotic disorders

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

Research into affective disorders

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

Research into personality disorders

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

Research into community intervention

- Community psychiatry.
- Validation of patient and caregiver satisfaction scales and programmes.

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

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

Active Grants

- Francisco Javier de Diego Adeliño. Estudio longitudinal de predicción precoz de la respuesta en depresión con la combinación multimodal de biomarcadores epigenéticos, neurocognitivos y clínicos. PI16/00302. Instituto de Salud Carlos III. Duration: 2017-2021. 86,500 €.
- Enric Álvarez Martínez. Efectos de un análogo de la Ayahuasca sobre el reprocesamiento emocional en pacientes con Trastorno Límite de la Personalidad. PI16/00078. Instituto de Salud Carlos III. Duration: 2017-2020. 46,500 €.
- Maria Jesús Portella Moll. Contratos Miguel Servet II 2016. CPII16/00020. Instituto de Salud Carlos III. Duration: 2017-2020. 101,250 €.
- Maria Jesús Portella Moll. RIDEM: Rehabilitación Integral para Depresión Mayor. Estudio de eficacia de un programa de rehabilitación integral. PI17/00056. Instituto de Salud Carlos III. Duration: 2018-2021. 47,000 €.
- Maria Jesús Portella Moll. Grup de Recerca en Trastorns Psiquiàtrics de Sant Pau. 2017 SGR 1343. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 16,250 €.
- Maria Jesús Portella Moll. Marcadors transdiagnòstics dels símptomes cognitius en els trastorns afectius. SLT006/17/00177. Departament de Salut. Duration: 2018-2020. 63,213.33 €.
- Maria Jesús Portella Moll. Marcadors transdiagnòstics dels símptomes cognitius en els trastorns afectius. SLT006/17/00177-01. Departament de Salut. Duration: 2018-2020. 27,203.17 €.
- Juan Carlos Pascual Mateos. Autolesió no suïcida en adolescents i adults joves a Catalunya: prevalença, característiques i implicacions clíniques. SLT006/17/00159. Departament de Salut. Duration: 2018-2020. 750 €.
- Eva Maria Grasa Bello. Cognició social i biaixos cognitius en persones amb primers episodis psicòtics en comparació amb esquizofrènia crònica i controls sans. SLT006/17/00231. Departament de Salut. Duration: 2018-2020. 1,550 €.
- Iluminada Corripio Collado. Estimulación Cerebral Profunda: hacia una nueva intervención para la recuperación del paciente con esquizofrenia resistente al tratamiento. PI19/00242. Instituto de Salud Carlos III. Duration: 2020-2022. 85,000 €.
- Joaquín Soler Ribaudi. Ensayo clínico sobre los efectos de un entrenamiento de habilidades en síntomas de larga evolución en pacientes con Trastorno Límite de Personalidad. PI19/00087. Instituto de Salud Carlos III. Duration: 2020-2022. 20,800 €.
- Alejandra Roldán Bejarano. Contratos Rio Hortega 2019. CM19/00043. Instituto de Salud Carlos III. Duration: 2020-2022. 53,732 €.
- Francisco Javier de Diego Adeliño. DePREDIgen - Estudio longitudinal de predicción precoz de la respuesta en depresión con la combinación multimodal de biomarcadores epigenéticos, neurocognitivos y clínicos. SLT008/18/00092. Departament de Salut. Duration: 2019-2021. 165,909.04 €.
- Carlo Alemany Santamaria. sAPPtisfacció: Creació d'una plataforma digital per l'avaluació de la satisfacció dels usuaris i cuidadors d'hospitalització psiquiàtrica domiciliària. SCPSM 2019. Societat Catalana de Psiquiatria i Salut Mental. Duration: 2019-2021. 2,608.70 €.
- Iluminada Corripio. Programa de intervención y tipificación neurobiológica de la Esquizofrenia Resistente– AMA DABLAM.
- Iluminada Corripio, Eva Grasa, Anna Alonso. European project: e-MOTIPH; Smart and innovative e-mental health solution to manage and patients with schizophrenia. 12470. Duration: 2018-2021.
- Maria J. Portella. ENIGMA Consortium: Enhancing Neuro Imaging Genetics Through Metanalysis. ENIGMA Major Depressive Disorder (MDD) Working Group.
- Dolors Puigdemont, Aina Fernández. Prevención e Intervención en Suicidio (SURVIVE): estudio de cohorte y ensayos clínicos controlados anidados de programas de prevención secundaria para intentos de suicidio. PI19/00236.

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

Grants Awarded in 2020

- Iluminada Corripio Collado. Contratos para la intensificación de la actividad investigadora 2020., INT20/00008, Instituto de Salud Carlos III. Duration: 2021-2022. 60,000 €.
- Maria Jesús Portella Moll. Rehabilitación Integral cognitiva para DEpresión Mayor (RIDEM). Ensayo clínico multicéntrico, aleatorizado para investigar su eficacia. PI20/00270. Instituto de Salud Carlos III. Duration: 2021-2023. 96,500 €.
- Christian Núñez Leanez. Contratos Sara Borrell 2020. CD20/00142. Instituto de Salud Carlos III. Duration: 2021-2023. 80,598 €.

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

Awards

- Elisabeth Casellas, David Almenta, Unitat de Teràpia Familiar. Award for the project: Estudio piloto: la terapia sistémica y la terapia de aceptación y compromiso en la problemática familiar asociada a psicopatología. Premio Investigación FEATF 2020.

Doctoral Theses

- Eva M. Grasa Bello. M-RESIST: atenció terapèutica mòbil per a l'esquizofrènia resistent al tractament. Estudi prospectiu multicèntric de viabilitat i acceptabilitat. Universitat Autònoma de Bacelona. Directors: Iluminada Corripio, Víctor Pérez, Enric Álvarez. Date of defense: 25/11/2020
- Metodi Draganov. Neurobiological factors associated with treatment response and resistance in major depression. Universitat Autònoma de Barcelona. Directors: Maria J. Portella, Roser Nadal. Date of defense: 22/12/2020

Scientific Production

Total Impact Factor: 112.966 · Mean Impact Factor: 5.379

Aguilar-Ortiz S., Salgado-Pineda P., Vega D., Pascual J.C., Marco-Pallares J., Soler J., Brunel C., Martin-Blanco A., Soto A., Ribas J., Maristany T., Sarro S., Rodriguez-Fornells A., Salvador R., McKenna P.J., Pomarol-Clotet E., Evidence for default mode network dysfunction in borderline personality disorder (2020) PSYCHOL MED, 50 (10), 1746-1754. **IF: 5.8130**

Amoretti S., Rosa A.R., Mezquida G., Cabrera B., Ribeiro M., Molina M., Bioque M., Lobo A., Gonzalez-Pinto A., Fraguas D., Corripio I., Vieta E., De La Serna E., Morro L., Garriga M., Torrent C., Cuesta M.J., Bernardo M., The impact of cognitive reserve, cognition and clinical symptoms on psychosocial functioning in first-episode psychoses (2020) PSYCHOL MED. **IF: 5.8130**

Arnaiz J.A., Rodrigues-Silva C., Mezquida G., Amoretti S., Cuesta M.J., Fraguas D., Lobo A., Gonzalez-Pinto A., Diaz-Caneja M.C., Corripio I., Vieta E., Baeza I., Mane A., Garcia-Rizo C., Bioque M., Saiz J., Bernardo M., et al. The usefulness of Olanzapine plasma concentrations in monitoring treatment efficacy and metabolic disturbances in first-episode psychosis (2020) PSYCHOPHARMACOLOGY. **IF: 3.1300**

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Kong XZ; ENIGMA Laterality Working Group, Francks C. Reproducibility in the absence of selective reporting: An illustration from large-scale brain asymmetry research. HUM BRAIN MAPP. 2020 Aug 25. doi: 10.1002/hbm.25154. Online ahead of print. PMID: 32841457. **IF: 4.421**

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Mas S., Gasso P., Rodriguez N., Cabrera B., Mezquida G., Lobo A., Gonzalez-Pinto A., Parellada M., Corripio I., Vieta E., Castro-Fornieles J., Bobes J., Usall J., Saiz-Ruiz J., Contreras F., Parellada E., Bernardo M., et al. Personalized medicine begins with the phenotype: identifying antipsychotic response phenotypes in a first-episode psychosis cohort (2020) ACTA PSYCHIAT SCAND, 141 (6), 541-552. **IF: 5.3620**

Mas S., Boloc D., Rodriguez N., Mezquida G., Amoretti S., Cuesta M.J., Gonzalez-Penas J., Garcia-Alcon A., Lobo A., Gonzalez-Pinto A., Corripio I., Vieta E., Castro-Fornieles J., Mane A., Saiz-Ruiz J., Gasso P., Bioque M., Bernardo M., Examining gene-environment interactions using aggregate scores in a first-episode psychosis cohort (2020) SCHIZOPHRENIA BULL, 46 (4), 1019-1025. **IF: 7.9580**

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van Velzen L.S., Kelly S., Isaev D., Aleman A., Aftanas L.I., Bauer J., Baune B.T., Brak I.V., Carballedo A., Connolly C.G., Couvy-Duchesne B., Cullen K.R., Danilenko K.V., Dannlowski U., Enneking V., Filimonova E., et al. White matter disturbances in major depressive disorder: a coordinated analysis across 20 international cohorts in the ENIGMA MDD working group (2020) MOL PSYCHIATR, 25 (7), 1511-1525. **IF: 12.3840**

Vicent-Gil M., Portella M.J., Serra-Blasco M., Navarra-Ventura G., Crivilles S., Aguilar E., Palao D., Cardoner N., Dealing with heterogeneity of cognitive dysfunction in acute depression: A clustering approach (2020) PSYCHOL MED. **IF: 5.8130**

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Other Publications

- De Diego-Adeliño J y Alemany C. (2021). Abordaje terapéutico de la depresión. In: Cardoner N (scientific coordinator). Pautas de actuación y seguimiento (PAS) – Depresión. (pp 11-26). Madrid: Organización Médica Colegial e IMC S.L.

Books or Chapters with ISBN

- Maria J. Portella (coord.). Protocolo psicoeducativo para pacientes con depresión. Barcelona: Ed. Permanyer, 2020. ISBN: 978-84-18150-64-7
- De Diego-Adeliño J. (2020). Abordaje del paciente con depresión mayor: tratamiento farmacológico. En: Navío M, Pérez V (scientific coordinators). Libro Blanco: Depresión y Suicidio 2020. Documento estratégico para la promoción de la Salud Mental. (pp 43-54). Madrid: Wecare-u. ISBN: 978-84-09-23078-5
- Soler J, Domínguez B (2020). Abordaje del paciente con depresión mayor: tratamiento no farmacológico. En: Navío M, Pérez V (scientific coordinators). Libro Blanco: Depresión y Suicidio 2020. Documento estratégico para la promoción de la Salud Mental. (pp 54-62). Madrid: Wecare-u. ISBN: 978-84-09-23078-5

Diffusion Activities

Permanent Specialized Educational Activities

- Participation as coordinators and professors in the Master's Degree in Research in Mental Health. Universitat Autònoma de Barcelona, Universidad de Cantabria, Universitat de Barcelona, Universidad Complutense de Madrid, Universidad de Cádiz, CIBERSAM. Since 2013.
- Maria J. Portella and Víctor Pérez. Coordination of the Training Day: Introduction to Scientific Career in Mental Health. Streaming Emission. 4 December 2020.
- Maria J. Portella, Muriel Vicent, Eva Grasa. Professors of the Master of Cognitive Rehabilitation and Neuropsychology: Neuropsychology of Psychiatric Diseases. Universitat Autònoma de Barcelona.

Congresses and Scientific Seminars

- Javier de Diego. Conference: Visitando la nevera de la Psiquiatría: Dieta en el marco del abordaje de los pacientes con depresión. XXIII Congreso Nacional de Psiquiatría. Oviedo (online). 30 October 2020.
- Javier de Diego. Conference: Ansiedad y depresión, la pandemia en la sombra. Neurotalks. Online seminar adressed to health professionals on the impact of COVID-19 on Mental Health.
- Alexandra Roldán Bejarano. Symposium Challenges of early intervention in psychosis in women. Conference-Moderator: WMH psychosis and gender. 17 November 2020.
- Alexandra Roldán Bejarano. Conference: Refractariedad en la esquizofrenia. Jornadas en patologías resistentes, 11 December 2020.
- Maria J Portella. Conference (Sección de Neuropsicología): Procognitive effects of Deep Brain Stimulation in Treatment Resistant Depression and Schizophrenia. LXXII Reunión Annual de la Sociedad Española de Neurología, 24 November 2020.
- A. Martín-Blanco. Conference: Hospitalización domiciliaria. Webinar (Otsuka-Lundbeck): Atención domiciliaria en psiquiatría: distintos modelos, distintos objetivos. October 2020.
- A. Martín-Blanco. Conference: Challenges of the treatment of women with psychosis in a Domiciliary Hospitalization Unit. Simposium Challenges of early intervention in psychosis in women. European Meeting on Women's Mental Health. Barcelona (online), November 2020.
- Eva Grasa. Oral communication: Adaptación del protocolo unificado para el tratamiento transdiagnóstico de los trastornos emocionales en pacientes con esquizofrenia. Invited speach: El papel de las intervenciones psicosociales en la recuperación clínica, funcional y personal de la esquizofrenia y otros trastornos psicóticos: un enfoque cognitivo-conductual. XIII Congreso Internacional and XVIII Nacional de Psicología Clínica. Online, 11-14 November 2020.
- Eva Grasa. Oral communication: Adaptación del protocolo unificado para el tratamiento transdiagnóstico de los trastornos emocionales en pacientes con esquizofrenia. Simposium: Intervenciones psicosociales en la recuperación clínica, funcional y personal de la psicosis: un enfoque cognitivo-conductual. Jornada XXXV del SCRITC. Online, 11 December 2020.
- Iluminada Corripio. Oral communication: Projecte eMOTIPH: Experiència de pacient de les persones amb diagnòstic d'esquizofrènia resistent al tractament. X Patient Barcelona Congress. Online, 29-30 September 2020.
- Fernández-Vidal, A., Portella, M.J., Tiana, T., Casellas-Pujol, E., Àvila, A., Raventós, B., Ancochea, A., Durán-Sindreu, S., Borràs, C., Àlvarez, E. Poster: Left behind after suicide: Suicide Survivor Programme, a longitudinal study. 33 European College of Neuropsychopharmacology (ECNP) Congress. Online, 12-15 September 2020.
- Alemany C, Puigdemont D, Martín Blanco A, Rodríguez Rodríguez R, Aibar-Durán JA, Álvarez-Holzapfel MJ, Álvarez E, Portella MJ, de Diego-Adeliño J. Poster: Subgenual cingulate deep brain stimulation confers long-term benefits in severe treatment-resistant depression. 33rd European College of Neuropsychopharmacology (ECNP) Congress. Online, 12-15 September 2020.

Dissemination to Society

- Javier de Diego. Conference to the general public: Medicina al teu abast. La depressió a la tercera edat. Barcelona, 27 February 2020.
- Maria J. Portella. Conference to the general public: Remediació Cognitiva per a persones de l'Espectre Autista. Jornada Internacional de la Síndrome d'Asperger. 22 February 2020.
- Maria J Portella. Conference to the general public: Educar en la Neurodiversitat en temps de COVID-19. Barcelona, 18 November 2020.

Media and News

- Maria J. Portella. Interview in La Vanguardia: https://www.lavanguardia.com/vivo/20200907/48333671117/síndrome-asperger-adultos-trabajo-tea.html (07/09/2020).
- Enric Álvarez. Interview in TV3 "Preguntes freqüents": https://www.ccma.cat/tv3/alacarta/preguntes-frequents/enric-alvarez-cap-de-psiquiatria-de-lhospital-sant-pau-es-normal-tenir-por-i-tristesa/video/6038766/ (11/04/2020).
- Aina Fernández Vidal. Launching of the suicide attention helpline: https://www.ccma.cat/324/barcelona-crea-un-telefon-per-prevenir-el-suicidi-arran-de-la-crisi-de-la-covid/noticia/3045291/ (06/09/2020).
- Ana Martín-Blanco. Domiciliary Hospitalization Unit. TV programme "Informe semanal": La cuarta ola: la salud mental. https://www.rtve.es/alacarta/videos/informe-semanal/28-11-20/5726993/ (28/11/2020).

AREA 4 · Neurological, Mental Disorders and Ageing

Genetics in Neurodegenerative Diseases

Coordinator
Clarimon Echavarria, Jordi (IR)
jclarimon@santpau.cat

Members
Dols Icardo, Oriol (IR)

Main Lines of Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

National and international consortiums

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

Collaborations with International Centers

- Dr. John Hardy, University College of London, UK.
- Dr. Andrew Singleton, National Institutes of Health, USA.
- Dr. Jean-Charles Lambert, INSERM. Lille, France.
- Dr. Alfredo Ramírez, University of Bonn. Germany.
- Dr. Ekaterina Rogaeva, University of Toronto, Canada.
- Dr. Mikko Hiltunen, Kuopio University, Finland.
- Dr. Martin Ingelsson, Uppsala University, Sweden.
- Dr. Liana Fidani, Aristotle, University of Thessaloniki, Greece.
- Dr. Christine Van Broekhoven, University of Antwerp, Belgium.
- Dra. Rita Guerreiro, Van Andel Research Institute, Michigan, USA.
- Dra. Iris Jansen, VU Medical Center Amsterdam, Netherlands.

Active Grants

- Jordi Clarimon Echavarria. Grup de Recerca en Demències: Sant Pau. 2017 SGR 547. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 35,200 €.
- Jordi Clarimon Echavarria. Estudio transcriptómico de la demencia frontotemporal para la comprensión de sus bases moleculares e identificación de biomarcadores que reflejen su sustrato neuropatológico in vivo. PI18/00326. Instituto de Salud Carlos III. Duration: 2019-2021. 112,000 €.

- Oriol Dols Icardo. Identification of an RNA-based biomarker in FTD. AFTD 2019-003. Association for Frontotemporal Degeneration. Duration: 2020-2021. 98,387.50 €.
- Jordi Clarimon Echavarria. Descubrimiento de nuevos marcadores diagnósticos y pronósticos para la ELA. FUNDELA 2019. Fundación Española para el Fomento de la Investigación de la Esclerosis Lateral Amiotrófica. Duration: 2019-2021. 26,087 €.
- Oriol Dols Icardo. FUNDELA 2020 - Estudio del transcriptoma de las células inmunitarias periféricas en la ELA. Fundación Española para el Fomento de la Investigación en Esclerosis Lateral Amiotrófica. Duration: 2020-2021. 30,000 €.
- Jordi Clarimon Echavarria. Estudio del microRNA en el compartimento exosomal del líquido cefalorraquídeo como biomarcador de la demencia frontotemporal y herramienta para el conocimiento de las bases biológicas de la enfermedad. CIBERNED. PI2017/01. Duration: 2018-2020. 200,000 €.

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

Scientific Production

Total Impact Factor: 157.000 · Mean Impact Factor: 10.467

Berthier M.L., Davila G., Torres-Prioris M.J., Moreno-Torres I., Clarimon J., Dols-Icardo O., Postigo M.J., Fernandez V., Edelkraut L., Moreno-Campos L., Molina-Sanchez D., de Zaldivar P.S., Lopez-Barroso D., Developmental Dynamic Dysphasia: Are Bilateral Brain Abnormalities a Signature of Inefficient Neural Plasticity? (2020) FRONT HUM NEUROSCI, 14. **IF: 2.6730**

Cervera-Carles L., Dols-Icardo O., Molina-Porcel L., Alcolea D., Cervantes-Gonzalez A., Munoz-Llahuna L., Clarimon J., Assessing circular RNAs in Alzheimer's disease and frontotemporal lobar degeneration (2020) NEUROBIOL AGING, 92, 7-11. **IF: 4.3470**

Clarimon J. Genetic-environmental factors finally assessed together in Parkinson's disease. J NEUROL NEUROSURG PSYCHIATRY. 2020 Oct;91(10):1030. doi: 10.1136/jnnp-2020-324472. PMID: 32934106. **IF: 8.234**

Clarimon J., Moreno-Grau S., Cervera-Carles L., Dols-Icardo O., Sanchez-Juan P., Ruiz A., Genetic architecture of neurodegenerative dementias (2020) NEUROPHARMACOLOGY, 168. **IF: 4.4310**

Costa B, Manzoni C, Bernal-Quiros M, Kia DA, Aguilar M, Alvarez I, Alvarez V, Andreassen O, Anfossi M, Bagnoli S, Benussi L, Bernardi L, Binetti G, Blackburn D, Boada M, Borroni B, Bowns L, Bråthen G, Bruni AC, Chiang HH, et al. C9orf72, age at onset, and ancestry help discriminate behavioral from language variants in FTLD cohorts. NEUROLOGY. 2020 Dec 15;95(24):e3288-e3302. doi: 10.1212/WNL.0000000000010914. PMID: 32943482. **IF: 8.055**

De Luna N., Turon-Sans J., Cortes-Vicente E., Carrasco-Rozas A., Illan-Gala I., Dols-Icardo O., Clarimon J., Lleo A., Gallardo E., Illa I., Rojas-Garcia R., Downregulation of miR-335-5P in Amyotrophic Lateral Sclerosis Can Contribute to Neuronal Mitochondrial Dysfunction and Apoptosis (2020) SCI REP-UK, 10 (1). **IF: 3.9980**

Delaby C., Alcolea D., Carmona-Iragui M., Illan-Gala I., Morenas-Rodriguez E., Barroeta I., Altuna M., Estelles T., Santos-Santos M., Turon-Sans J., Munoz L., Ribosa-Nogue R., Sala-Matavera I., Sanchez-Saudinos B., Subirana A., Videla L., Benejam B., Sirisi S., Lehmann S., Belbin O., Clarimon J., Blesa R., Pagonabarraga J., Rojas-Garcia R., Fortea J., Lleo A., Differential levels of Neurofilament Light protein in cerebrospinal fluid in patients with a wide range of neurodegenerative disorders (2020) SCI REP-UK, 10 (1). **IF: 3.9980**

Dols-Icardo O., Montal V., Sirisi S., Lopez-Pernas G., Cervera-Carles L., Querol-Vilaseca M., Munoz L., Belbin O., Alcolea D., Molina-Porcel L., Pegueroles J., Turon-Sans J., Blesa R., Lleo A., Fortea J., Rojas-Garcia R., Clarimon J., Motor cortex transcriptome reveals microglial key events in amyotrophic lateral sclerosis (2020) NEUROL-NEUROIMMUNOL, 7 (5). **IF: 7.7240**

Fortea J., Vilaplana E., Carmona-Iragui M., Benejam B., Videla L., Barroeta I., Fernandez S., Altuna M., Pegueroles J., Montal V., Valldeneu S., Gimenez S., Gonzalez-Ortiz S., Munoz L., Estelles T., Illan-Gala I., Belbin O., Camacho V., Wilson L.R., Annus T., Osorio R.S., Videla S., Lehmann S., Holland A.J., Alcolea D., Clarimon J., Zaman S.H., Blesa R., Lleo A., Clinical and biomarker changes of Alzheimer's disease in adults with Down syndrome: a cross-sectional study (2020) LANCET, 395 (10242), 1988-1997. **IF: 60.3920**

Gao Y, Wang T, Yu X; International FTD-Genomics Consortium (IFGC), Zhao H, Zeng P. Mendelian randomization implies no direct causal association between leukocyte telomere length and amyotrophic lateral sclerosis. SCI REP. 2020 Jul 22;10(1):12184. doi: 10.1038/s41598-020-68848-9. PMID: 32699404. **IF: 3.998**

Guelfi S., D'Sa K., Botia J.A., Vandrovcova J., Reynolds R.H., Zhang D., Trabzuni D., Collado-Torres L., Thomason A., Quijada Leyton P., Gagliano Taliun S.A., Nalls M.A., Noyce A.J., Nicolas A., Cookson M.R., et al. Regulatory sites for splicing in human basal ganglia are enriched for disease-relevant information (2020) NAT COMMUN, 11 (1). **IF: 12.1210**

Hernandez I, Gelpi E, Molina-Porcel L, Bernal S, Rodríguez-Santiago B, Dols-Icardo O, Ruiz A, Alcolea D, Boada M, Lleó A, Clarimón J. Heterozygous APOE Christchurch in familial Alzheimer's disease without mutations in other Mendelian genes. NEUROPATHOL APPL NEUROBIOL. 2020 Oct 23. doi: 10.1111/nan.12670. PMID: 33095930. **IF: 7.5**

Illán-Gala I, Montal V, Pegueroles J, Vilaplana E, Alcolea D, Dols-Icardo O, de Luna N, Turón-Sans J, Cortés-Vicente E, Martinez-Roman L, Sánchez-Saudinós MB, Subirana A, Videla L, Sala I, Barroeta I, Valldeneu S, Blesa R, Clarimón J, Lleó A, Fortea J, Rojas-García R. Cortical microstructure in the amyotrophic lateral sclerosis-frontotemporal dementia continuum. NEUROLOGY. 2020 Nov 3;95(18):e2565-e2576. doi: 10.1212/WNL.0000000000010727. PMID: 32913016. **IF: 8.055**

Montal V, Vilaplana E, Pegueroles J, Bejanin A, Alcolea D, Carmona-Iragui M, Clarimón J, Levin J, Cruchaga C, Graff-Radford NR, Noble JM, Lee JH, Allegri R, Karch CM, Laske C, Schofield PR, Salloway S, Ances B, Benzinger T, McDale E, Bateman R, Blesa R, Sánchez-Valle R, Lleó A, Fortea J; Dominantly Inherited Alzheimer Network (DIAN). Biphasic cortical macro- and microstructural changes in autosomal dominant Alzheimer's disease. ALZHEIMERS DEMENT. 2020 Nov 16. doi: 10.1002/alz.12224. PMID: 33196147. **IF: 17.127**

Rosas I., Martinez C., Clarimon J., Lleo A., Illan-Gala I., Dols-Icardo O., Borroni B., Almeida M.R., van der Zee J., Van Broeckhoven C., Bruni A.C., Anfossi M., Bernardi L., Maletta R., Serpente M., Galimberti D., Scarpini E., et al. Role for ATXN1, ATXN2, and HTT intermediate repeats in frontotemporal dementia and Alzheimer's disease (2020) NEUROBIOL AGING, 87, 139.e1-139.e7. **IF: 4.3470**

Diffusion Activities

Scientific Dissemination to Society

- O. Dols-Icardo. Genòmica aplicada a les malalties neurodegeneratives. Escola Sant Marc. Matí de la Recerca 2020.
- La malaltia d'Alzheimer: que és i com l'estudiem. Institut Municipal d'Educació, Ajuntament de Barcelona. Setmana Mundial del Cervell.

Communications in National and International Meetings

- O. Dols-Icardo. Oral communication: Transcriptome characterization of the motor cortex suggests microglial-related key events due to TDP43 aberrant inclusions. Alzheimer's Association International Conference 2020. 27-29 July 2020.

Training

- During 2020 we have supervised one Final Master Thesis Projects (TFM), from the "Advance Genetics" Master at the UAB and two Final Degree Projects from "Biotechnology" (UAB) and "Human Biology" (UPF). The Unit also hosted two students from the "La Guineueta" and "La Bonanova" Institute (Barcelona), who performed their laboratory practices as lab technicians.

AREA 4 · Neurological, Mental Disorders and Ageing

Neurobiology of Dementia

Coordinator
Lleó Bisa, Alberto (FGS)
alleo@santpau.cat

Members
Alcolea Rodríguez, Daniel Andrés (FGS)
Altuna Azkargorta, Miren (IR)
Barroeta Espar, Isabel (FGS)
Bejanin, Alexandre Pierre A. (IR)
Belbin, Olivia (IR)
Blesa González, Rafael (FGS)
Carmona Iragui, Maria (FGS)
El Bounasri El Bennadi, Shaimaa (CIBERNED)
Escolà Lafontana, Concepció (FGS)
Estelles Pals, Maria Teresa (IR)
Ferrer Reventós, Paula (CIBERNED)
Fortea Ormaechea, Juan (FGS)
Garzón Chávez, Diana (IR)
Illan Gala, Ignacio (IR)
Iulita, María Florencia (IR)
Montal Blancafort, Víctor (IR)
Muñoz Llahuna, Laia (CIBERNED)
Núñez Llaves, Raul (IR)
Pegueroles Monllau, Jordi (IR)
Querol Vilaseca, Marta (CIBERNED)
Reyes Vilasalo, Judith (IR)
Ribosa Nogué, Roser (IR)
Sala Matavera, Isabel (FGS)
Sánchez Saudinos, María Belén (IR)
Santos Santos, Miguel Ángel (FGS)
Sirisi Dolcet, Sonia (IR)
Subirana Castillo, Andrea (IR)
Torres Alcalá, Soraya (IR)
Valldeneu Castells, Silvia (IR)
Valle Tamanyo, Natalia (IR)
Videla Toro, Laura (IR)
Vilaplana Martínez, Eduard (IR)
Zhu, Noule (FGS)

Main Lines of Research

- Biomarkers of Alzheimer's disease, Down syndrome and other neurodegenerative dementias: biofluid and imaging markers
- Clinical and biomarker characterization of Alzheimer's disease in Down syndrome.
- Digital neuropathology applied to neurodegenerative diseases.
- The intersection between sleep, epilepsy and Alzheimer's disease.
- Clinical trials in Alzheimer disease and Down syndrome.

Scientific Challenges

- Maintain our scientific production and funding, prioritising those projects with a higher impact.
- Consolidate our number of granted projects in European and international applications.
- Unfold the potential to collaborate with pharma and technological companies to foster additional patent applications and contracts.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Genetics in Neurodegenerative Diseases (PI: Jordi Clarimon).
- Molecular Physiology of the Synapse (PI: Alex Bayés).
- Cerebrovascular Diseases (PI: Joan Martí-Fàbregas).
- Neuromuscular Diseases (PI: Isabel Illa, Ricard Rojas).
- Parkinson disease and Movement Disorders (PI: Jaime Kulisevsky, Javier Pagonabarraga).
- Biochemistry Group (PI: Francisco Blanco, Mireia Tondo).
- Nuclear Medicine (PI: Ignasi Carrió, Valle Camacho).
- Multidisciplinary Sleep Unit (PI: Sandra Giménez).
- Collaboration, article: Department of Nuclear Medicine. In the Assessment of Progressive Supranuclear Palsy. Clin Nucl Med. 2020 May;45(5):e239-e240. doi: 10.1097/RLU.0000000000002977.PMID: 32149810

External Collaborations

National Collaborations

- Amanda Jiménez (PI); Roser Ribosa, Laura Videla, Jordi Pegueroles / Collaborators). Inflamación hipotalámica en obesidad. Papel de la dieta y efectos de la cirugía bariàtrica. PI17/00279. Instituto de Salud Carlos III.

International Collaborations

- Collaboration, article: Institute of Psychiatry, Psychology, and Neuroscience, Department of Forensic and Neurodevelopmental Sciences, King's College London, London, United Kingdom; The London Down Syndrome (LonDownS) Consortium, London, United Kingdom; South London and the Maudsley NHS Foundation Trust.
- Collaboration, article: Department of Neurodegenerative Disease, UCL Queen Square Institute of Neurology, University College London, London, UK.
- Collaboration, article: Alzheimer Center Amsterdam, Department of Neurology, Amsterdam Neuroscience, Vrije Universiteit Amsterdam, Amsterdam UMC - Location VUmc, The Netherlands.
- Collaboration, article: Alzheimer Center, Department of Neurology, VU University Medical Centre, Neuroscience Campus Amsterdam, Amsterdam, The Netherlands.
- Collaboration, article: Centre for Neuroimaging Sciences, Institute of Psychiatry, Psychology and Neuroscience, King's College London, United Kingdom.
- Collaboration, article: INSERM U1183, Laboratoire de Biochimie-Protéomique Clinique, CHU de Montpellier, Université de Montpellier, Montpellier, France.

- Collaboration, article: Department of Neurology, Donders Institute for Brain, Cognition and Behaviour, Radboud Alzheimer Centre, Radboud University Medical Center, Nijmegen, the Netherlands. Department of Laboratory Medicine, Radboud University Medical Center, Nijmegen, the Netherlands.
- Collaboration, article: Alzheimer Center and Department of Clinical Genetics, Neuroscience Campus Amsterdam, VU University Medical Centre, Amsterdam, The Netherlands.
- Collaboration, article: Institute of Neurosciences, University of Barcelona, Barcelona, Spain. Cognition and Brain Plasticity Group, Bellvitge Biomedical Research Institute-IDIBELL, Hospitalet de Llobregat, Spain. Department of Cognition, Development and Education Psychology, University of Barcelona, Hospitalet de Llobregat, Spain. Catalan Institution for Research and Advanced Studies (ICREA), Barcelona, Spain.
- Collaboration, article: Alzheimer's Therapeutics Research Institute and Department of Neurology, University of Southern California, Los Angeles, California, USA.
- Collaboration, article: Department of Psychiatry, University of Oxford, UK.
- Collaboration, article: Endocrinology, Hospital de la Santa Creu i Sant Pau, Barcelona.
- Collaboration, article: Instituto de Investigación Sanitaria del Principado de Asturias -ISPA, Oviedo, Spain; Servicio de Neurología, Hospital Universitario Central de Asturias, Oviedo, Spain.
- Collaboration, article: Institute for Translational Research and Department of Pharmacology and Neuroscience University of North Texas Health Science Center Fort Worth Texas USA.
- Collaboration, article: University of North Texas Health Science Center, Institute for Translational Research and Department of Pharmacology and Neuroscience, Fort Worth, TX, USA.
- Collaboration, article: Department of Neurology and Neurosurgery, McGill University, Montreal, Canada.
- Collaboration, article: Obesity Unit, Endocrinology and Diabetes Department Hospital Clinic Universitari de Barcelona Barcelona Spain. Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS) Barcelona Spain. Centro de Investigación Biomédica en Red de la Fisiopatología de la Obesidad y Nutrición (CIBEROBN) Madrid Spain.
- Collaboration, article: Department of Neurology (E.P.-G., J.F., A.M.-D., L.Q.), Neuroradiology Unit (M.T., B.G.-A.), Radiology Department, Microbiology Department (N.R.), and Gastroenterology Department (C.G.-O.), Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Spain.
- Collaboration, article: Neuromuscular Diseases Unit, Department of Neurology, Hospital de la Santa Creu i Sant Pau.
- Collaboration, article: Molecular and Cellular Neurobiotechnology, Institute for Bioengineering of Catalonia (IBEC), Barcelona Institute of Science and Technology (BIST), Science Park of Barcelona.
- Collaboration, article: Univ Montpellier, INSERM, CHU Montpellier (CMRR), Montpellier, France.
- Collaboration, article: Human Genetics Group, School of Life Sciences, University of Nottingham, Nottingham, UK.
- Collaboration, article: Alzheimer Center Amsterdam, Department of Neurology, Amsterdam.
- Collaboration, article: Department of Radiology, Brain Health Imaging Institute, Weill Cornell Medicine, New York, New York, USA.
- Collaboration, article: University of California, San Francisco | UCSF • Memory and Aging Center.
- Collaboration, article: Lübeck Interdisciplinary Platform for Genome Analytics (LIGA), Institutes of Neurogenetics and Cardiogenetics, University of Lübeck, Lübeck, Germany.
- Collaboration, article: Department of Neurology and Sergievsky Center (W.A.H.), Vagelos College of Physicians and Surgeons and Mailman School of Public Health, Columbia University, New York.
- Collaboration, article: Department of Neurology, Danish Dementia Research Centre, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark.
- Collaboration, article: Neurovascular Research Laboratory. Vall d'Hebron Institut de Recerca (VHIR) - Universitat Autònoma de Barcelona, Barcelona, Spain.
- Collaboration, article: Neuromuscular Diseases Laboratory - Biomedical Research Institute SantPau, Universitat Autónoma de Barcelona, Barcelona, Spain Department of Neurology, Neuromuscular Diseases Unit, Hospital de la Santa Creu i Sant Pau, Universitat Autònoma de Barcelona, Barcelona, Spain Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER), Valencia, Spain.
- Collaboration, article: Department of Biochemistry, Hospital de La Santa Creu i Sant Pau, Biomedical Research Institute (IIB) Sant Pau, Barcelona, Spain.
- Collaboration, article: Centro Cardiologico Universitario and LTTA Centre, University Hospital of Ferrara, Ferrara, Italy.
- Collaboration, article: Center for Brain and Cognition, Pompeu Fabra University, Barcelona, Spain Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain.
- Collaboration, article: Cognitive Neurology and Aphasia Unit, Centro de Investigaciones Médico-Sanitarias, Instituto de Investigación Biomédica de Málaga (IBIMA), University of Malaga, Málaga, Spain. Department of Psychobiology and Methodology of Behavioral Sciences, Faculty of Psychology, University of Malaga, Málaga, Spain.
- Collaboration, article: IRMB, University of Montpellier, INSERM, CHU Montpellier, (LBPC-PPC), Montpellier, France.
- Collaboration, article: Networking Biomedical Research Center on Neurodegenerative Diseases (CIBERNED),Madrid, Spain. Group of Neurodegenerative Diseases, Hospital 12 de Octubre Research Institute (imas12), Madrid, Spain.
- Collaboration, article: Department of Psychiatry, University of Oxford, UK.
- Collaborative research study: Laboratorio del Prof Kevin Morgan, University of Nottingham (UK).
- Collaboration, stay: Memory and aging center. Department of Neurology. University of California San Francisco. Global Brain Health Institute
- Collaboration, article. Department of Psychiatry, University of Oxford, Oxford, UK

Active Grants

- Rafael Blesa González. Pre-clinical Alzheimer's disease and Type 2 diabetes and obesity. Effects of bariatric surgery: a multimodal study. MARATO 201614.31. Fundació La Marató de TV3. Duration: 2017-2020. 142,700 €.
- Rafael Blesa González. Estudio del trazador de tomografía por emisión de positrones (PET) para Tau [18F]THK-5351 en pacientes con diferentes Taupatías. PI16/01825. Instituto de Salud Carlos III. Duration: 2017-2021. 101,500 €.
- Sonia Sirisi Dolcet. Contratos postdoctorales Sara Borrell 2017. CD17/00055. Instituto de Salud Carlos III. Duration: 2018-2021. 91,792.17 €.
- Rafael Blesa González. Down Alzheimer Barcelona Neuroimaging Initiative (DABNI). LA CAIXA - DOWN ALZHEIMER. Fundació La Caixa. Duration: 2017-2020. 783,000 €.
- Alberto Lleó Bisa. Aplicación de Tomografía de Array (AT) para el estudio sistemático a gran escala del daño sináptico en las demencias

neurodegenerativas. PI17/01896. Instituto de Salud Carlos III. Duration: 2018-2021. 77,000 €.

- Juan Fortea Ormaechea. Estudios longitudinales de RM magnética, de difusión y funcional en la enfermedad de Alzheimer preclínica esporádica y asociada al síndrome de Down. PI17/01019. Instituto de Salud Carlos III. Duration: 2018-2022. 127,000 €.
- Juan Fortea Ormaechea. The Role of Inflammation and NGF Dysfunction in the Evolution of Alzheimer Disease Pathology in Down syndrome. 2018-3570. The Regents of the University of California. Duration: 2018-2022. 428,518.83 €.
- Eduard Vilaplana Martínez. Estudios multimodales de resonancia magnética, tomografía de emisión de positrones y líquido cefalorraquídeo en la enfermedad de Alzheimer en el síndrome de Down. SLT006/17/00095. Departament de Salut. Duration: 2018-2020. 93,137.03 €.
- Alexandre Pierre Armand Bejanin. Neuroimagen multimodal para estudiar los mecanismos fisiopatológicos de la enfermedad de Alzheimer y otras enfermedades neurodegenerativas. IJCI-2017-32609. Ministerio de Economía y Competitividad. Duration: 2019-2021. 64,000 €.
- Maria Florencia Iulita. Discovery of novel biomarkers signalling NGF metabollic dysfunction and early AD-dementia in Down sdydrome. JEROME LEJEUNE 2018-2. Jérôme Lejeune Fondation. Duration: 2020-2022. 154,000 €.
- Daniel Andrés Alcolea Rodríguez. Utilidad diagnóstica de Aβ42 y Aβ42/40 en LCR y plasma para detectar amiloidosis cerebral y correlación con marcadores subrogados de producción de β-amiloide en enfermedad de Alzheimer. PI18/00435. Instituto de Salud Carlos III. Duration: 2019-2021. 122,000 €.
- Olivia Belbin. Estudio multimodal de nuevos biomarcadores sinápticos en cohortes de la enfermedad de Alzheimer y la demencia frontotemporal. PI18/00327. Instituto de Salud Carlos III. Duration: 2019-2021. 102,000 €.
- Maria Carmona Iragui. Estudio de biomarcadores bioquímicos y de imagen de angiopatía amiloide cerebral en el continuum de la enfermedad de Alzheimer esporádica y asociada al síndrome de Down. PI18/00335. Instituto de Salud Carlos III. Duration: 2019-2021. 57,000 €.
- Maria Carmona Iragui. Domiciliary Alzheimer Visiting in Down syndrome. GBHI_ALZ-18-543740. ALTUM. Duration: 2018-2022. 18,433.61 €.
- Víctor Montal Blancafort. Cambios longitudinales en la estructura y la función cerebral en el contínuum de la enfermedad de Alzheimer y Síndrome de Down. FI18/00275. Instituto de Salud Carlos III. Duration: 2019-2022. 82,400 €.
- Miguel Ángel Santos Santos. Contratos Juan Rodés 2018. JR18/00018. Instituto de Salud Carlos III. Duration: 2019-2023. 180,000 €.
- Olivia Belbin. Estudio multimodal de nuevos biomarcadores sinápticos en cohortes de la enfermedad de Alzheimer y la demencia frontotemporal. CPII18/00011. Instituto de Salud Carlos III. Duration: 2019-2022. 91,125 €.
- Rafael Blesa González. Estudio pseudoexperimental sobre el efecto de la inflamación asociada a la obesidad sobre el sistema nervioso central y la enfermedad de Alzheimer. PI19/01512. Instituto de Salud Carlos III. Duration: 2020-2022. 192,000 €.
- Miguel Ángel Santos Santos. Afasia primaria progresiva: Caracterización multimodal de los síntomas, fisiopatología y progresión. PI19/00882. Instituto de Salud Carlos III. Duration: 2020-2022. 92,000 €.
- Miren Altuna Azkargorta. Contratos Rio Hortega 2019. CM19/00066. Instituto de Salud Carlos III. Duration: 2020-2021. 53,732 €.
- Maria Teresa Estelles Pals. Contractes Rio Hortega 2019. CM19/00017. Instituto de Salud Carlos III. Duration: 2020-2021. 53,732 €.
- Daniel Andrés Alcolea Rodríguez. Contratos para la intensificación de la actividad investigadora 2019. INT19/00016. Instituto de Salud Carlos III. Duration: 2020-2021. 60,000 €.
- Alberto Lleó Bisa. Proteínas en sangre para la discriminación precoz de las demencias. AC19/00103. Instituto de Salud Carlos III. Duration: 2020-2022. 82,000 €.
- Juan Fortea Ormaechea. Clinical trials to prevent Alzheimer's Disease in Down Syndrome. 127636920. University of Southern California. Duration: 2019-2021. 33,395.56 €.
- Juan Fortea, Consultant (IP: Ann-Charlotte Granholm-Bentley). Biological Correlates of Alzheimer in Down Syndrome. NIH/NIA (National Institute of Health/ National Institute of Aging). R21 AG056974-01. Duration: 2017-2021. 20,000 €.
- Juan Fortea, Consultant (PI: Granholm, Margittai, Mufson). Tau Pathology in Down Syndrome-related Alzheimer's disease. NIA (National Institute of Aging). R01AG061566 (1RF1AG061566-01). Duration: 2018-2023. 8,221.15 €.
- Juan Fortea, Consultant (IP: Vannini). Novel Diffusion-Weighted MRI Assessment of Cortical Microstructural Changes and their Relationship to Amyloid, Tau and Cognition in Aging and Alzheimer's Disease. 1R21AG064348-01. NIH/NIA (National Institute of Health/National Institute of Aging). Duration: 2019-2021. 9,902.43 €.
- Juan Fortea (CoIP). J. Busciglio. Impact of biological and sociodemographic risk factors related to COVID 19 in adults with DS. INCLUDE Supplement (Supplement of the grant: The Role of Inflammation and NGF Dysfunction in the Evolution of Alzheimer Disease Pathology in Down Syndrome – Revision). 3RF1AG056850-NOT-OD-20-129. NIH/NIA (National Institute of Health/National Institute of Aging). Duration: 2020-2021. 463,426.93 €.
- Juan Fortea (CoIP). J. Busciglio. The role of Inflammation and NGF Dysfunction in the Evolution of Alzheimer Disease Pathology in Down syndrome: Revision. 3RF1AG056850-01S1. NIH/NIA (National Institute of Health/National Institute of Aging). Duration: 2018-2022. 247,506.93€.
- Olivia Belbin. Early PROgnostic markers FOr Neurodegenerative Diseases (e-PROFOUND). 2019 PROD 00088. European Funds for Regional Development (FEDER); Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2020-2022. 95,215 €.
- Juan Fortea (Site-IP), M. Rafii (PI). Clinical Trials to Prevent Alzheimer's Disease in Down Syndrome. 1R61AG066543 – 01. NIH/NIA (National Institute of Health/National Institute of Aging). Duration: 2020-2024. 36,067.20 €.
- Alberto Lleó (Coordinator), Tara Spires-Jones (PI); Olivia Belbin, Sònia Sirisi, Marta Querol (Collaborators). NANOSYN: Unravelling synaptic pathology in Alzheimer's disease and Dementia with Lewy bodies using super-resolution microscopy (COEN-NANOSYN). COEN5025. CIBERNED as member of the Centres of Excellence in Neurodegeneration (CoEN). Pathfinder. Duration: 2020-2022. 180,000 €.
- Olivia Belbin (PI); Raúl Núñez Llaves (Associate technician). Evaluation and characterization of synaptic proteins as biomarkers for the synaptic damage related to AD. SLT002/16/00099. Departament de Salut, Pla estratègic recerca i salut (PERIS). Duration: 2017-2020. 65,109 €.

Competitive - Private

- Juan Fortea, Collaborator (PI: Ann-Charlotte Granholm-Bentley). International Brain Bank for DS-related AD. CA2018010. BrightFocus Foundation. Duration: 2017-2022. 2,500 €/brain.
- Florencia Iulita. ProNGF and NfL in neuron-derived extracellular vesicles: the gateway to blood biomarker discovery for Alzheimer's disease prevention in Down syndrome. 1941. Jérôme Lejeune Foundation. Duration: 2020-2022. 40,000 €.
- Ignacio Illán. Microstructural changes in primary progressive aphasia. GBHI ALZ UK-21-720973. Pilot Award for Global Brain Health Leaders. Duration: 2020-2021. 20,548.98 €.

Non Competitive- Private

- Hugo Vanderstichele (PI); Alberto Lleó (Local PI). Development of prototype immunoassays on the SimoA Technology for quantification in biological samples of oligomeric forms of α-Synuclein using new antibody combinations (Acronym: SynOligo). MJ-Fox-Synoligo-20180516-1. MJ FOX PROJECT. Duration: 2018-2020.

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

Grants Awarded in 2020

- Olivia Belbin. Early PROgnostic markers FOr Neurodegenerative Diseases (e-PROFOUND). 2019 PROD 00088. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2020-2022. 76,172 €.
- Maria Carmona Iragui. Inflammatory biomarkers along the Alzheimer's disease continuum in down syndrome. JEROME LEJEUNE 2020. Jérôme Lejeune Fondation. Duration: 2020-2022. 78,812.91 €.
- Maria Florencia Iulita. ProNGF and NfL in neuron-derived extracellular vesicles: the gateway to blood biomarker discovery for Alzheimer's disease prevention in Down syndrome. JEROME LEJEUNE 2020-1. Jérôme Lejeune Fondation. Duration: 2020-2022. 36,000 €.
- Ignacio Illan Gala. Microstructural changes in primary progressive aphasia. GBHI ALZ UK-21-720973. Global Brain Health Institute. Duration: 2020-2021. 19,218.97 €.

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

Awards

- Illán-Gala, I. Cortical microstructure in the behavioural variant of frontotemporal dementia: looking beyond atrophy. Agustí Codina i Puiggròs Award from the Catalan Society of Neurology.
- Carmona, M. Domiciliary Alzheimer Visiting in Down syndrome extension project (DAVIS-2). Beca Fundació Societat Catalana de Neurologia.
- Pegueroles J. AMYQ: An independent index of MR and reference region to standardize amyloid load in the brain. Award to the best oral communication. SEN 2020 Annual Meeting.

Doctoral Theses

- Estrella Morenas. Estudio multimodal de biomarcadores en el contínuum demencia por cuerpos de Lewy – Enfermedad de Alzheimer. Universitat Autònoma de Barcelona. Directors: Juan Fortea, Alberto Lleó. Date of defense: 27/02/2020
- Marta Querol, YKL-40 y neuroinflamación en la enfermedad de Alzheimer y otras enfermedades Neurodegenerativas. Universitat Autònoma de Barcelona. Director: Alberto Lleó. Date of defense: 10/12/2020

Patents

- Olivia Belbin, Alberto Lleó, Álex Bayés, Juan Fortea, Daniel Alcolea. Markers of Synaptopathy in Neurodegenerative Disease. WO 2019/175379, Markers of Synaptopathy in Neurodegenerative Disease. 16/03/2018

Transfer Products

- CORTEXYME. Detection of P. Gingivalis in samples of patients with Down syndrome and Alzheimer's disease. 2019-2021. 27,000 €.
- AGENT. Collaboration on plasma markers for Alzheimer's disease using multiplex platforms. 2019-2021. 43,500 €.
- VISION GLOBAL (HORIZON). Análisis de biomarcadores de inflamación, remodelación sináptica y daño vascular en plasma y tejido cerebral en un modelo de rata tras tratamiento con extracto de cerebro. 02/09/2020. 28,236.16 €.

Scientific Production

Total Impact Factor: 327.792 · Mean Impact Factor: 7.995

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- Illán-Gala I, Lleó A, Karydas A, Staffaroni AM, Zetterberg H, Sivasankaran R, Grinberg LT, Spina S, Kramer JH, Ramos EM, Coppola G, La Joie R, Rabinovici GD, Perry DC, Gorno-Tempini ML, Seeley WW, Miller BL, Rosern HJ, Blennow K, Boxer AL, Rojas JC. Plasma tau and neurofilament light in frontotemporal lobar degeneration and Alzheimer's disease. XXIV Reunió Anual de la Societat Catalana de Neurologia. Virtual, 28 September - 2 October 2020.
- Pegueroles J, Montal V, Vilaplana E, Bejanin A, Aranha M, Santos-Santos MA, Carrió I, Camacho V, Blesa R, Lleó A, Fortea J. AmyQ: an index to accurately measure cerebral amyloid load. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Pegueroles J, Montal V, Vilaplana E, Bejanin A, Aranha M, Santos-Santos MA, Carrió I, Camacho V, Blesa R, Lleó A, Fortea J. AmyQ: an index to accurately measure cerebral amyloid load. LXXII Reunión Anual Sociedad Española de Neurología. Virtual, 23 November - 3 December 2020.
- Pentz R, Iulita MF, Ducatenzeiler A, Carmona Iragui M, Fortea, J and Cuello AC. Distinct plasma and CSF signatures of Down syndrome with Alzheimer's dementia revealed by measuring proteins related to NGF metabolism. AAT-AD/PD™ Focus Meeting. Vienna, Austria, 2-5 April 2020.
- Querol-Vilaseca M, Sirisi S, Molina-Porcel L, Molina B, Pegueroles J, Ferrer-Raventos P, Núñez-Llaves R, Blesa R, Belbin O, Fortea J, Sánchez-Valle R, Lleó A. Reduced non-fibrillar Aß species in a patient treated with low doses of BACE1 inhibitor. CTAD: Clinical Trials in Alzheimer's Disease. Virtual, 4-7 November 2020.
- Sirisi-Dolcet S, Querol-Vilaseca M, Dols-Icardo O, Muñoz L, Torres S, Pegueroles J, Montal V, Blesa R, Belbin O, Fortea J, Clarimon J, Lleó A. Oligodendroglial alterations In FTD caused by C9orf72 expansion. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Valle-Tamayo N, Cervera-Carles L, Muñoz L, Kapravelou G, Cofan M, Chiva G, Jiménez A, Ortega E, Belbin O, Alcolea D, Carmona-Iragui M, Lleó A, Clarimon J, Fortea J, Iulita MF. Optimización de un método de enriquecimiento de vesículas extracelulares neuronales para la búsqueda de biomarcadores cerebrales en biofluidos. LXXII Reunión Anual Sociedad Española de Neurología. Virtual, 23 November - 3 December 2020.
- 2Vanmechelen E, Goossens J, Dewit N, Smirnov D, Jacobs D, Belbin O, Alcolea D, Lleó A, Galasko D. Exploring molecular biomarkers with potential prognostic value in longitudinal observational studies on Alzheimer's disease. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Vilaplana E, Videla L, Carmona-Iragui M, Benejam B, Barroeta I, Fernandez S, Altuna M, Pegueroles J, Montal V, Bejanin A, Iulita MF, Valldeneu S, González-Ortiz S, Muñoz L, Camacho V, Videla S, Alcolea D, Blesa R, Lleó A, Clarimon J and Fortea J. The effect of APOE ?4 in Alzheimer's disease biomarkers in Down syndrome. Alzheimer's Association International Conference. Amsterdam, The Netherlands, 26-30 July 2020.
- Zhu N, Santos M, Montal V, Estelles M, Barroeta I, Altuna M, Muñoz L, Belbin O, Sala I, Sanchez-Saudinos MB, Subirana A, Videla L, Blesa R, Clarimón J, Carmona-Iraqui M, Fortea J, Alcolea D, Lleó. GFAP en plasma como biomarcador de enfermedades neurodegenerativas. LXXII Reunión Anual Sociedad Española de Neurología. Virtual, 23 November - 3 December 2020.

Scientific Posters at Congresses

- Alcolea D, Carmona-Iragui M, Barroeta I, Videla L, Muñoz L, van Pelt K, Schmitt F, Lightner D, Koehl L, Sacco S, Mircher C, Pape S, Nübling G, Levin J, Zaman S, Strydom A, Rebillat AS, Head E, Blesa R, Lleó A, Fortea J. Longitudinal plasma levels of NfL in Down syndrome: a multicenter study. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Belbin O, Clares L, Molina B, Núñez R, Goossens J, Dewit N, Alcolea D, Estellés T, Querol-Vilaseca M, Sirisi S, Muñoz L, Clarimon J, Blesa R, Fortea J, Vanmechelen E, Lleó A. VAMP2 is a cerebrospinal fluid marker of selective hippocampal synapse loss and episodic memory performance in Alzheimer's disease. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Carmona-Iragui M, Iulita MF, Barroeta I, Fernandez S, Altuna M, Videla L, Benejam B, Valldeneu S, Muñoz-Llahuna L, Alcolea D, Blesa R, Lleó A, Fortea J. Cerebrospinal fluid neuroinflammatory biomarkers along the Alzheimer disease continuum in Down syndrome. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Estellés T, Carmona-Iragui M, Illán-Gala I, Barroeta I, Sánchez-Saudinós MB, Sala I, Morenas-Rodriguez E, Altuna M, Santos-Santos MA, Xucla T, Blesa R, Fortea J, Lleó A, Alcolea D. Characteristics and prognosis of patients with mild cognitive impairment by cerebrospinal fluid biomarker profiles. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Gasa-Roqué A, Illán-Gala I, Santos-Santos M, Subirana A, Sánchez-Saudinos B, Valldeneu S, Clarimon J, Alcolea D, Blesa R, Lleó A, Fortea J, Bejanin A. Clinical relevance of a standardized assessment of social behaviors during the clinical examination in the behavioral variant of frontotemporal dementia. AAIC_next, a special edition of AAIC for students and early career investigators. Virtual, 9-10 November 2020.
- Goossens J, Dewit N, Belbin O, Lleó A, Vanmechelen E. Quantifying the synaptic vesicle-associated protein, VAMP2, to verify changes in cerebrospinal fluid in preclinical stages of Alzheimer's disease. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Illán-Gala I, Falgàs N, Castro-Suárez S, Keret O, Friedberg A, Rogers N, Oz D, Nigro S, Quattrone A, Wolf A, Rojas J, Santos-Santos M, Borrego-Écija S, Karydas A, Cobigo Y, Sánchez-Valle R, Fortea J, Lleó A, Miller BL, Grinberg LT, Spina S, Kramer JH, Rabinovici GD, Boxer A, Gorno-Tempini ML, Seeley WW, Rosen HJ, Perry DC. Impact of cortical and subcortical atrophy in the diagnosis and prognosis of bvFTD: a multicenter longitudinal study. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Santos-Santos M, Vilaplana E, Illán-Gala I, Pegueroles J, Montal V, Bejanin A, Carmona-Iragui M, Barroeta I, Sánchez-Saudinos MB, Sala I, Morenas-Rodriguez E, Estellés T, Altuna M, Sánchez-Juan P, Mar-

tinez-Lage P, Blesa R, Clarimon J, Belbin O, Fortea J, Alcolea D, Lleó A. New use for an old friend? Recycling sAPPb as a synaptic marker. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.

- Valldeneu S, Barroeta I, Altuna M, Videla L, Benejam B, Estellés T, Fernandez S, Lleó A, Blesa R, Fortea J, Carmona-Iragui M. Domiciliary Alzheimer Visiting in Down Syndrome Pilot Project: Preliminary results. Alzheimer's Association International Conference 2020 (AAIC). Virtual, 27-31 July 2020.
- Valle Tamayo N, Alcolea D, Lleó A, Clamiron J, Fortea J, Iulita MF. Use of neuron-derived extracellular vesicles for the search of non-invasive biomarkers of basal forebrain cholinergic degeneration in Down syndrome. International Society of Liquid Biopsy Congress, October 2020.
- Valle Tamayo N, Alcolea D, Lleó A, Clamiron J, Fortea J, Iulita MF. Optimization of a method of neuron-derived extracellular vesicle enrichment for the search of non-invasive biomarkers of Alzheimer's disease. Alzheimer's Association Neuroscience Next, November 2020
- Valle Tamayo N, Alcolea D, Lleó A, Clamiron J, Fortea J, Iulita MF. Comparison of two polymer-based precipitation methods for the enrichment of neuron-derived extracellular vesicles. GEIVEX Symposium, December 2020.

Invited Talks

- Iulita F. Sex and Gender Differences in the COVID-19 Pandemic: Data from Spain. Live Webinar, The Women's Brain Project. April 2020.
- Lleó A. Neurologia al dia 2020. Demències. May 2020.
- Iulita F. COVID-19 in Down syndrome: the impact of immune dysregulation, sociodemographic factors and therapeutic implications. Live Webinar, ISTAART, Alzheimer's Association, June 2020.
- Lleó A. Biomarcadores en enfermedades neurodegenerativas. Jornada formación. Biogen. Virtual, 12 November 2020.
- Lleó A. Biofluid Based Biomarkers. PIA. 2020: A year in review. Alzheimer Association. Virtual, 11 December 2020.
- Carmona M, et al. Neuropsychological correlates of plasma NfL in adults with Down syndrome. Professional Interest Area de Down syndrome y Alzheimer Disease. AAIC 10 August 2020.

Divulgative Talks

- Oriol Dols. Divulgative talk: Genomics applied to neurodegenerative diseases. Program Matí de la Recerca 2020. Sant Marc School, Barcelona, November 2020.
- Paula Ferrer Raventós. Divulgative talk. BCNInspiracy (event link: https://bcnspiracy.hablandodeciencia.com/). 20-21 November 2020.
- Jordi Clarimón. Divulgative talk: Genetics in neurodegenerative diseases: The example of Alzheimer's disease. To students of ESO, Batxillerat and Formative Courses. ESCOLAB. Granés School, Barcelona, October 2020.
- Jordi Clarimón. Divulgative talk Master in Health Care Genetics. Universitat Autònoma de Barcelona, Barcelona, May 2020.
- Jordi Clarimón. Divulgative talk: Alois Alzheimer: A psychiatrist who made history. Aula 141 Cycle. Centre Cívic Guinardó. Barcelona, February 2020.

Talks in Courses, Seminars and Workshops

- Laura Videla. Neuropsychological assessment of cognitive impairment in people with Down syndrome. NeuronUp Academy (online training), 26 March 2020.
- Miren Altuna. Down Syndrome: update on Alzheimer's disease and other associated comorbidities. Course: Class in the University Master of Advances in Neurorehabilitation of Communicative and Motor Functions (Gimbernat-Cantabria University Schools, attached to the University of Cantabria). Online, June 2020.

AREA 4 · Neurological, Mental Disorders and Ageing

Neuroradiology

Coordinator
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Members
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Gómez Chiari, Marta C. (FGS)
Lozano Martínez, Gloria Andrea (FGS)
Méndez Escalante, Jorge E. (FGS)
Merino Peña, Elisa (FGS)
Tecame, Mario (FGS)

Main Lines of Research

- Ours is a multidisciplinary research group, which has the added value of combining the neuroimaging skills of the members of the Neuroradiology clinical unit at Hospital de la Santa Creu i Sant Pau with the technological knowledge of PIC/IFAE investigators at the Universitat Autònoma de Barcelona (Spain) and University College London (UCL, UK).
- Our focuses are: 1) Neuroimaging biomarkers in diseases involving the central nervous system, including neurodegenerative and neuropsychiatric conditions; 2) Automatic procedures and software tools, especially those of Deep Learning/Artificial Intelligence, in neuroradiology.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Parkinson Disease and Movement Disorders.
- Pituitary Gland Disorders.
- Cerebrovascular Diseases.
- Endocrinology, Diabetes and Nutrition.
- Neuro-Oncology, Maternal Care/Obstetrics, Clinical Psychiatry, Head and Neck Tumours/Otorhinolaringology.

External Collaborations

- University College London (UCL), London, UK (B. Gómez-Anson is Hon Associate Lecturer).
- Translational Imaging Group, UCL (C. Sudre), and National Hospital for Neurology and Neurosurgery (R. Jäger), London, UK.
- PIC (Information Science Port) / IFAE (Institute for High Energy Physics), Universitat Autònoma de Barcelona, Spain.

Active Grants

- Beatriz Gómez Ansón. Estudio longitudinal de los correlatos clínicos y neuroradiológicos asociados a los niveles de huntingtina y otros biomarcadores en LCR y plasma en la enfermedad de Huntington. FIS PI 17/01885. Duration: 2018-2020. 97,000 €.
- Beatriz Gómez Ansón. Deep Brain Stimulation: Towards a Novel Intervention focused on the Recovery of patients with Treatment Resistant Schizophrenia. PI19/00242. Duration: 2019-2021. 117,854 €.

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

Transfer Products

- C Sudre, B Gómez-Ansón, Prof. R Jäger, MJ Cardoso, et al. The role of conventional radiological approach in machine learning. http://cmictig.cs.ucl.ac.uk/the-role-of-conventional-radiological-approach-in-machine-learning

Scientific Production

Total Impact Factor: 23.615 · Mean Impact Factor: 3.936

Gras-Cabrerizo JR, Rodríguez-Álvarez F, Gomez-Anson B, Cubero-Marcos JM, Martel-Martin M, Granell-Moreno E, Lopez-Vilas M, Montserrat-Gili JR, Massegur-Solench H. Management of Patients With Graves Orbitopathy Using Endonasal Endoscopic Techniques. J CRANIOFAC SURG. 2020 Nov 9. doi: 10.1097/SCS.0000000000007107. Online ahead of print.PMID: 33170828. **IF: 0.953**

Horta-Barba A., Pagonabarraga J., Martinez-Horta S., Marin-Lahoz J., Sampedro F., Fernandez-Bobadilla R., Boti M.A., Bejr-Kasem H., Aracil-Bolanos I., Perez-Perez J., Pascual-Sedano B., Campolongo A., Izquierdo C., Gomez-Anson B., Kulisevsky J., The Free and Cued Selective Reminding Test in Parkinson's Disease Mild Cognitive Impairment: Discriminative Accuracy and Neural Correlates (2020) FRONT NEUROL, 11. **IF: 2.8890**

Marin-Lahoz J., Martinez-Horta S., Sampedro F., Pagonabarraga J., Horta-Barba A., Bejr-kasem H., Boti M.A., Fernandez-Bobadilla R., Pascual-Sedano B., Perez-Perez J., Aracil-Bolanos I., Gironell A., Gomez-Anson B., Kulisevsky J., Measuring impulsivity in Parkinson's disease: a correlational and structural neuroimaging study using different tests (2020) EUR J NEUROL. **IF: 4.5160**

Martinez-Horta S., Sampedro F., Horta-Barba A., Perez-Perez J., Pagonabarraga J., Gomez-Anson B., Kulisevsky J., Structural brain correlates of dementia in Huntington's disease (2020) NEUROIMAGE-CLIN, 28. **IF: 4.3500**

Pascual-Goñi E, Fortea J, Martínez-Domeño A, Rabella N, Tecame M, Gómez-Oliva C, Querol L, Gómez-Ansón B. COVID-19-associated ophthalmoparesis and hypothalamic involvement. Neurol Neuroimmunol Neuroinflamm. 2020 Jun 25;7(5):e823. doi: 10.1212/NXI.0000000000000823. Print 2020 Sep.PMID: 32587102. **IF: 7.724**

Sampedro F, Stantonyonge N, Martínez-Horta S, Alcolea D, Lleó A, Muñoz L, Pérez-González R, Marín-Lahoz J, Gómez-Ansón B, Chico A. Increased plasma neurofilament light chain levels in patients with type-1 diabetes with impaired awareness of hypoglycemia. BMJ Open Diabetes Res Care. 2020 Jul;8(1):e001516. doi: 10.1136/bmjdrc-2020-001516.PMID: 32636221. **IF: 3.183**

Diffusion Activities

Teaching Activities

- Undergraduate Level:
  - B. Gómez Ansón. Associate Professor UAB.
- Postgraduate Level:
  - Dra. Gómez Ansón. Master in Neuropsychology UAB.
  - Dra. Gómez Ansón. Master en Dolor, Universidad de Valencia.
  - Dra. Gómez Ansón. European Course in Neuroradiology, Diagnostic and Interventional. 14th Cycle Antwerp (Belgium).

Other activities

- Dra. Gómez Ansón. Evaluator Research Grants ANEP
- Dra. Gómez Ansón. Reviewer Brain Research
- Dra. Gómez Ansón. Brain Sciences

AREA 4 · Neurological, Mental Disorders and Ageing

Addictive Behaviours

Coordinator
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Bauza Ramis, Joana Maria (FGS)
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Duran-Sindreu Terol, Santiago Francisco (FGS)
Garcia Barrachina, Marina (FGS)
Guardia Serecigni, Josep (FGS)
Madre Rull, Mercè (FGS)
Mallorquí Bagué, Núria (FGS)
Pinet Ogue, Maria Cristina (FGS)
Remis Rebollo, Sergio (FGS)
Ribalta Corona, Elisa (FGS)
Roca Tutusaus, Francisco Javier (FGS)
Sancho Navarro, Marta (FGS)
Tome Pérez, José Alberto (FGS)
Trujols Albet, Joan (FGS)

Main Lines of Research

Alcohol

- Pharmaco-epidemiological, non-interventional, prospectivemulti-centre study with Selincro® on alcohol dependence, to determine patterns of use and consumption of alcohol in routine clinical practice in Spain.
- Prospective observational study for reducing the negative consequences associated with excessive alcohol use (RINCA) through the treatment programme to reduce alcohol consumption with nalmefene.

Cocaine

- Evaluation of cocaine craving during hospitalization conditions.

Tobacco

- Evaluation of the neuropsychiatric safety and efficacy of varenicline and bupropion hydrochloride for smoking cessation in subjects with and without a history of psychiatric disorders.
- Non-treatment follow-up for cardiac assessments following use of smoking cessation treatments in subjects with and without a history of psychiatric disorders.
- Effectiveness of a telephone intervention for smoking cessation in patients with mental disorder: a pragmatic clinical trial.

Opiates

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

Behavioural addictions

- Effectiveness of a mindfulness-based cognitive-behavioural therapy for gambling disorder. A randomized controlled trial.
- Effectiveness of a combined treatment for hypersexual disorder.
- Impact of gambling advertising on the general and clinical population.
- Effectiveness of cognitive-behavioural therapy for behavioural addictions.

Detoxification Hospital Unit

- Retention of treatment in detoxification and dishabituation hospital units.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

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

External Collaborations

- Area of Psychiatric and Mental Health Nursing, Sant Pau School of Nursing, Universitat Autònoma de Barcelona, Barcelona, Spain.
- Monash Institute of Cognitive and Clinical Neurosciences, Monash University, Clayton, Victoria, Australia.
- Department of Clinical and Experimental Psychology, Universidad de Huelva, Huelva, Spain.

- Department of Neurosciences, Universidad de Cádiz, Cádiz, Spain.
- Department of Psychology, Universidad Internacional de La Rioja, Logroño, Spain.
- Department of Psychology, Universidad de Jaén, Jaén, Spain.
- Department of Psychiatry, Hospital Universitari de Bellvitge-IDIBELL, Barcelona, Spain.
- DeustoPsych, R+D+I in Psychology and Health, Universidad de Deusto, Bilbao, Spain.
- Department of Social Sciences, Hochschule Darmstadt - University of Applied Sciences, Darmstadt, Germany.
- Department of Psychology, Pacific University, Hilsboro/Portland, Oregon, United States.
- Laboratory of Psychopathology and Health Processes, Psychological Institute, Paris Descartes University, Paris, France.

Active Grants

- Joan Trujols Albet. Calidad de vida desde la perspectiva del paciente en tratamiento con agonistas opioides: síntesis de estudios cualitativos y desarrollo de una escala centrada en el paciente. PI16/00056. Instituto de Salud Carlos III. Duration: 2017-2021. 28,500 €.
- José Carlos Pérez de los Cobos Peris. Estudio transversal y multicéntrico para el desarrollo de un modelo de predicción clínico y farmacogenético de la satisfacción del paciente dependiente de heroína con la metadona como un medicamento. SLT006/17/00179. Departament de Salut. Duration: 2018-2021. 119,480.93 €.
- José Carlos Pérez de los Cobos Peris. Estudio transversal y multicéntrico para el desarrollo de un modelo de predicción clínico y farmacogenético de la satisfacción del paciente dependiente de heroína con la metadona como un medicamento. SLT006/17/00179-01. Departament de Salut. Duration: 2018-2020. 4,795.20 €.
- Marta Sancho Navarro. Impacto de la publicidad en función de la tipología de juego, factores sociodemográficos y psicopatología asociada. ONCE 2018. Organización Nacional de Ciegos de España (ONCE). Duration: 2018-2020. 27,272.73 €.

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

Grants Awarded in 2020

- Núria Mallorquí Bagué, Ensayo clínico aleatorizado para la mejora del tratamiento del trastorno por consumo de cocaína mediante la implementación de un tratamiento basado en una web de terapia cognitivo conductual. PI20/00929. Instituto de Salud Carlos III. Duration: 2021-2023. 26,500 €.

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

Scientific Production

Total Impact Factor: 24.181 · Mean Impact Factor: 3.023

Lozano-Madrid M., Clark Bryan D., Granero R., Sánchez I., Riesco N., Mallorquí-Bagué N., Jiménez-Murcia S., Treasure J., Fernández-Aranda F. Impulsivity, emotional dysregulation and executive function deficits could be associated with alcohol and drug abuse in eating disorders (2020) J CLIN MED, 9(6), 1936. doi: 10.3390/jcm9061936. **IF: 3.3030**

Mallorquí-Bagué N., Lozano-Madrid M., Testa G., Vintró-Alcaraz C., Sánchez I., Riesco N., César Perales J., Francisco Navas J., Martínez-Zalacaín I., Megías A., Granero R., Veciana De Las Heras M., Chami R., Jiménez-Murcia S., Fernández-Formoso J.A., Treasure J., Fernández-Aranda F. Clinical and neurophysiological correlates of emotion and food craving regulation in patients with anorexia nervosa (2020) J CLIN MED, 9(4), 960. doi: 10.3390/jcm9040960. **IF: 3.3030**

Mallorquí-Bagué N., Testa G., Lozano-Madrid M., Vintró-Alcaraz C., Sánchez I., Riesco N., Granero R., Perales J.C., Navas J.F., Megías-Robles A., Martínez-Zalacaín I., Veciana de Las Heras M., Jiménez-Murcia S., Fernández-Aranda F. Emotional and non-emotional facets of impulsivity in eating disorders: From anorexia nervosa to bulimic spectrum disorders (2020). EUR EAT DISORD REV, 28(4), 410-422. doi: 10.1002/erv.2734. **IF: 3.5600**

Olano Espinosa E., Lozano Polo A., Grifell Guardia M., Pinet Ogue M.C., Isorna Folgar M., Moreno Arnedillo J.J., Why and how keep in mind cannabis in our smoking outpatients? ¿Por qué y cómo tener en cuenta al cannabis en nuestros pacientes fumadores? (2020) ATEN PRIM, 52 (1), 47-53. **IF: 1.0870**

Perez de los Cobos J., Alcaraz S., Sinol N., Gonzalez-Saiz F., Vergara-Moragues E., Trujols J., Towards a common metric for assessing heroin-dependent patient satisfaction with medications: Testing methadone and buprenorphine-naloxone (2020) DRUG ALCOHOL DEPEN, 212. **IF: 3.9510**

Trujols J. Mindfulness-based interventions for addiction (2020) MINDFULNESS, 11(8), 2034. doi:10.1007/s12671-020-01416-4. **IF: 3.5810**

Trujols J., Larrabeiti A., Sànchez O., Madrid M., De Andrés S., Duran-Sindreu S. Increased flexibility in methadone take-home scheduling during the COVID-19 pandemic: Should this practice be incorporated into routine clinical care? (2020) J SUBST ABUSE TREAT, 119, 108154. doi: 10.1016/j.jsat.2020.108154. **IF: 3.0830**

Trujols J., Sola I., Iraurgi I., Campins M.J., Ribalta E., Duran-Sindreu S., Individualized and Standardized Outcome Measures: Further Arguments in Favor of Cohabitation (2020) ADM POLICY MENT HLTH, 47 (3), 339-343. **IF: 2.3130**

Books or Chapters with ISBN

- Casas M., Bruguera E., Duro P., Pinet C. Conceptos básicos en trastornos adictivos. In: J. Bobes, M. Casas, M. Gutiérrez (editors), Manual de trastornos adictivos, 3ª edición. Madrid: Adamed; 2020, pp. 25-34. ISBN: 978-84-09-25077-6.
- Guardia J. Bases neurobiológicas. In: J. Bobes, M. Casas, M. Gutiérrez (editors), Manual de trastornos adictivos, 3ª edición. Madrid: Adamed; 2020, pp. 35-49. ISBN: 978-84-09-25077-6.
- Guardia J. Alcohol. Aspectos biológicos. In: J. Bobes, M. Casas, M. Gutiérrez (editors), Manual de trastornos adictivos, 3ª edición. Madrid: Adamed; 2020, pp. 507-517. ISBN: 978-84-09-25077-6.
- Bruguera E., Pinet C.M., Nieva G. Tabaco. Tratamientos biológicos. In: J. Bobes, M. Casas, M. Gutiérrez (editors), Manual de trastornos adictivos, 3ª edición. Madrid: Adamed; 2020, pp. 471-484. ISBN: 978-84-09-25077-6.

Diffusion Activities

Courses, Seminars and Conferences

- Guardia J. Alcoholisme. Course/Seminar. Màster en Infermeria Psiquiàtrica i Salut Mental. Universitat Autònoma de Barcelona. Barcelona, Spain. 26 February - 4 March 2020.
- Guardia J. Alcoholisme. Màster en Infermeria de Cures Avançades a la Persona amb Problemes Cardiovasculars. Barcelona, Spain. 12-19 October 2020.
- Pinet M.C. Tractament del tabac en pacients amb trastorn mental. Course/Seminar. Curs sobre Addiccions de la Societat Catalana de Psiquiatria i Salut Mental. Barcelona, Spain. 27 November 2020.

Oral Communications and Poster Presentations at Congresses

- Pinet M.C. 20 anys del grup de tabac de la Coordinadora de CAS. Oral communication. Jornada La Intervenció en Tabaquisme als CAS: Un Camí de 20 Anys. 24 January 2020.
- Mallorquí-Bagué N. Deterioro cognitivo y alimentación Predimed-Plus. Oral communication. XXXI Congreso Nacional de la Sociedad Española de Diabetes. 21-23 June 2020.
- Mallorquí-Bagué N., Vintró-Alcaraz C., Verdejo-Garcia A., Granero R., Fernandez-Aranda F., Mena-Moreno T., Gómez-Peña M., Mestre-Bach G., Menchon J., Jiménez-Murcia S. Impulsivity and cognitive distortions in different clinical phenotypes of gambling disorder: profiles and longitudinal prediction of treatment outcomes. Poster presentation. 28th European Congress of Psychiatry. 4-7 July 2020.
- Bauzà J., Alcaraz S., Muñoz L., Siñol N., Duran-Sindreu S., Batlle F., Trujols J., Pérez de los Cobos J. During detoxification of patients diagnosed with cocaine use disorder, use of cannabis is associated with increased intensity of cocaine craving. Poster presentation. 33rd European College of Neuropsychopharmacology Congress. 12-15 September 2020.
- Sancho M. Terapia cognitivo-conductual basada en mindfulness para el trastorno de juego. Oral communication. Jornada Regulación Emocional en el Trastorno de Juego. 18 September 2020.
- García M., Remis S., Palaus T., Trujols J., Alcaraz S. Evolución durante un ingreso hospitalario en pacientes en tratamiento con agonistas opiáceos. Estudio comparativo metadona versus Suboxone®. Poster presentation. XXXVII Congreso Nacional de Enfermería de Salud Mental. 7-10 October 2020.
- Palaus T., Roja V.E., García M., Úbeda J.A., Trujols J. Salidas para Respir@r: Desarrollo de una nueva intervención terapéutica enfermera en una unidad hospitalaria de desintoxicación. Poster presentation. XXXVII Congreso Nacional de Enfermería de Salud Mental. 7-10 October 2020.
- Suelves J.M., Escoda N., Vilardell C., Valverde A., López P., Ponte C. Ortega G., Anton L., Pinet C. et al. Actividad asistencial en Cataluña tras la inclusión de bupropión y vareniclina en la cartera de prestaciones del SNS. Oral communication. I Congreso Virtual de la Sociedad Española de Epidemiología. 21-23 October 2020.
- Sancho M. Oral communication. Terapia cognitivo-conductual basada en mindfulness en tiempos de pandemia para el trastorno por juego. Jornada El Impacto de la Pandemia por la COVID-19 en el Trastorno de Juego. 29 October 2020.
- Bauzà J., Alvarado P. La importancia de un diagnóstico correcto. Poster presentation. XXIII Congreso Nacional de Psiquiatría. 29-31 October 2020.
- Bauzà J., Roca X., De Andrés S., Madrid M., Tomé A., Campins M.J., Alvarado P., Duran-Sindreu S. Retención de pacientes con consumo de sustancias en hospital de día de adicciones. Poster presentation. XXIII Congreso Nacional de Psiquiatría. 29-31 October 2020.
- Fonseca F., Jufresa B., Casanova G., Cano M., Mondon S., Nieva G., Palau N., Pinet C., Vallbuena N., Ballbé M., Gual A. Influencia de las actitudes y formación de los profesionales sobre la intervención en la adicción al tabaco en unidades de salud mental. Poster presentation. 22º Congreso de la Sociedad Española de Patología Dual. 16-19 November 2020.
- Pérez de los Cobos J. Introducción a la psicopatología específica de los trastornos por consumo de sustancias. Oral communication. 22º Congreso de la Sociedad Española de Patología Dual. 16-19 November 2020.
- Sans M., Manresa M.J., Duran-Sindreu S., Alvarado P.J., Guardia J., Batlle F., Trujols J., Pérez de los Cobos J. Polifarmacia mal controlada en el tratamiento del dolor crónico: Encefalopatía metabólica, a propósito de un caso con registro encefalográfico. Poster presentation. 22º Congreso de la Sociedad Española de Patología Dual. 16-19 November 2020.
- Pérez de los Cobos J. Psicopatología de la adicción. Oral communication. Update en Addiccions. 27 November 2020.
- Guardia J. Nuevos tratamientos farmacológicos del alcoholismo. Oral communication. XLVII Jornadas Nacionales de Socidrogalcohol. 30 November - 4 December 2020.
- Madre M. Trastorno bipolar. Oral communication. Jornada sobre Patologías Resistentes (9ª edición). 4 December 2020.

AREA 4 · Neurological, Mental Disorders and Ageing

Molecular Physiology of the Synapse

Coordinator
Bayés Puig, Alejandro (IR)
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Members
Del Castillo Berges, Diego (IR)
Gou Alsina, Gemma (IR)
Ramos Vicente, David (IR)

Main Lines of Research

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Neurobiology of Dementias (PI: Alberto Lleó)
- Oncogenesis and Antitumour Drugs (PI: Ramón Mangues)
- Molecular Bases of Disease (PI: Pablo Fuentes-Prior)
- Neurosurgery (PI: Gerardo Conesa, Cristian de Quintana)
- Pediatry (PI: Susana Boronat)

External Collaborations

International Collaborations

- Prof. Seth GN Grant. University of Edinburgh, UK.
- Prof. Richrad L Huganir. Johns Hopkins University, USA.
- Prof. Jyoti Choudhary. The Institute of Cancer Research, London, UK.
- Dr. Noboru Komiyama. University of Edinburgh, UK.
- Dr. Gavin Rumbaugh. Scripps Research Institute, USA.
- Dr. Richard Emes. University of Nottingham, UK.
- Dr. Maksym Kopanitsa. Charlkes River Laboratories, Finland.
- Dr. Hector Escribà. Sorbonne Universités, UPMC Univ Paris 06, CNRS, France.
- Dr. Nael Nadif-Kasri. Radboud University, The Netherlands.
- Dr. Mark Collins. University of Sheffiled, UK.
- Prof. Guus Smith. Vrije University, Amsterdam, The Netherlands.
- Prof. Matthijs Verhague. Vrije University, Amsterdam, The Netherlands.
- Prof. Daniel Choquet. Institut Interdisciplinaire de Neurosciences, Bourdeaux, France.
- Prof. Oliver Brüstle. Institute of Reconstructive Neurobiology, Bonn, Germany.
- Dr. Barbara Treutlein. Max Plank Institute for Evolutionary Antropology, Leipzig, Germany.
- Prof. Jacques Michaud. CHU Ste-Justine-Université de Montreal, Montreal, Canada.

National Collaborators

- Dra. Àngels García-Cazorla. Hospital Sant Joan de Déu, Barcelona.
- Dra. Nerea Roher., Universitat Autònoma de Barcelona, Bellaterra.
- Dr. Jordi García Fernández. Universitat de Barcelona, Barcelona.
- Dr. Carles Sindreu. Universitat de Barcelona, Barcelona.
- Dr. David Soto. Universitat de Barcelona, Barcelona.
- Dr. Xavier Altafaj. Universitat de Barcelona, Barcelona.
- Dra. Liset Menéndez de la Prida. Instituto Cajal, Madrid.
- Dr. Albert Quintana. Universitat Autònoma de Barcelona, Bellaterra.
- Dr. Angel Barco. Instituto de Neurociencias, Alicante.
- Dr. Andres Ozaita. Universitat Pompeu Fabra, Barcelona.
- Dra. Belén Pérez Dueñas. Hospital Vall d'Hebron, Barcelona.

Active Grants

- Alejandro Bayés Puig. Synaptic Dysfunction in Intellectual Disability Caused by SYNGAP1. Translational Research to Develop Human Models and Advance Pharmacological Treatments. AC17/00005. Instituto de Salud Carlos III. Duration: 2018-2021. 123,500 €.
- Alejandro Bayés Puig. Grup de Senyalització Sinàptica. 2017 SGR 01776. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Alejandro Bayés Puig. Red para el estudio de la sinapsis en el contexto de la disfunción cognitiva. SAF2017-90664-REDT. Ministerio de Economía y Competitividad. Duration: 2018-2021. 19,000 €.
- Alejandro Bayés Puig. Ayudas para la incorporación estable de doctores 2017. IEDI-2017-00822. Ministerio de Economía y Competitividad. Duration: 2018-2020. 100,000 €.
- Alejandro Bayés Puig. Hacia un tratamiento farmacológico para la deficiencia en SYNGAP1. Estudios preclínicos para investigar la eficacia de 4 fármacos en el rescate de los principales fenotipos. RTI2018-097037-B-100. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 140,000 €.
- Alejandro Bayés Puig. Registro nacional de pacientes Syngap1 y creación de una plataforma para estudios clínicos y básicos. Asociación SYNGAP1 España. Duration: 2020-2021. 9,400 €.

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

Grants Awarded in 2020

- Diego del Castillo Bergés. Developmental molecular pathophysiology related to SYNGAP1 haploinsufficiency. Studies in human and mouse models of disease., 2020 FI_B 00130, Agència de Gestió d'Ajuts Universitaris i de Recerca, Duration: 2020-2023. 44,549.94 €.

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

Patents

- J. Fortea, D. Alcolea, À. Bayés, O. Belbin and A. Lleó, Markers of Synaptopathy in Neurodegenerative Disease. P18382175. European Patent. 15/08/2020.

Transfer Products

- J. Fortea, D. Alcolea, À Bayés, O. Belbin and A. Lleó. Research collaboration and patent license agreement on a set of biomarkers of synaptic loss in Alzheimer's Disease. ADx Neuroscience (Belgium). Duration: 01/07/18-12/12/2025.

Scientific Production

Total Impact Factor: 8.997 · Mean Impact Factor: 4.499

Gou G., Roca-Fernandez A., Kilinc M., Serrano E., Reig-Viader R., Araki Y., Huganir R.L., de Quintana-Schmidt C., Rumbaugh G., Bayes A., SynGAP splice variants display heterogeneous spatio-temporal expression and subcellular distribution in the developing mammalian brain (2020) J NEUROCHEM. **IF: 4.0660**

Ramos-Vicente D., Bayés À. AMPA receptor auxiliary subunits emerged during early vertebrate evolution by neo/subfunctionalization of unrelated proteins. (2020) OPEN BIOL Oct;10(10):200234. PMID: 33108974. **IF: 4.931**

Other Publications

- Kilinc M., Creson T.K., Rojas C., Maity S., Le A.A., Lauterborn J., Wilkinson B., Hartel N., Graham N., Reich A., Gou G., Araki Y., Bayés A., Coba M.P., Lynch G., Miller C.A., Rumbaugh G. Splicing of the SynGAP Carboxyl-Terminus Enables Isoform-Specific Tuning of NMDA Receptor Signaling Linked to Cognitive Function. bioRxiv 2020.01.18.911487; doi: https://doi.org/10.1101/2020.01.18.911487
- Ripke S., Walters JTR., O'Donovan M.C., et al. SynGO Consortium (Inc. Àlex Bayés). Mapping genomic loci prioritises genes and implicates synaptic biology in schizophrenia. medRxiv: https://doi.org/10.1101/2020.09.12.20192922
- Cid E., Márquez-Galera A., Valero M., Gal B., Medeiros D.C., Navarrón C.M., Ballesteros-Esteban L., Reig-Viader R., Morales A. V., Dolon L., Fernandez-Lamo I., Gomez-Dominguez D., Sato M., Hayashi Y., Bayés A., Barco A., López-Atalaya J.P., de la Prida L. M. Sublayer- and cell-type-specific neurodegenerative transcriptional trajectories in hippocampal sclerosis. bioRxiv https://www.biorxiv.org/content/10.1101/2021.02.03.429560v1.full

Diffusion Activities

Invited Talks

- Presentación del Proyecto SYNGAP1 España. 1r Congreso de familias españolas afectadas por el déficit de SYNGAP1. Hospital Sant Joan de Deu and Hospital de la Santa Creu i Sant Pau. 25 January 2020.

Meetings Organised

- The Synaptic Dimension of Brain Disorders. Universidad Internacional de Andalucía, Baeza, Spain. 4-6 October 2020.
- 1r Congreso de familias españolas afectadas por el déficit en SYNGAP1. Hospital Sant Joan de Deu and Hospital de la Santa Creu i Sant Pau. 25 January 2020.

Popular Science Articles

- Gemma Gou. SYNGAP1, un gen clave para el desarrollo cerebral y la cognición. Blog DCiencia. https://www.dciencia.es/syngap1-un-gen-clave-para-el-desarrollo-cerebral-y-la-cognicion/

Colaborative Projects

- Synapse Gene Ontology (SynGO) Project. Since December 2017 our research group is part of the SynGO project, an international collaboration to annotate all synaptic proteins. This project is lead by Steve E Hyman in USA (Director of the Stanley Centre, The Broad Institute, Harvard University, Boston), the Gene Onotology Consortium and, in Europe, Matthijs Verhage (Vrije University, Amsterdam).
- Àlex Bayés. Coordinator of the Red para el estudio de la sinapsis en el contexto de la disfunción cognitiva.
- Àlex Bayés. Coordinator of the Grup de Senyalització Sinàptica (Generalitat de Catalunya)
- Hub Innovació Pediatrica de la Generalitat de Catalunya. Coordinator: Hospital Sant Joan de Déu (Barcelona)
- Necesidades Complejas de Comunicación y Enfermedades Minoritarias. Coordinator: Universidad de Málaga
- Connecting the Growing Brain. Coordinator: Dra. Angels Garcia Cazorla (Hospital Sant Joan de Déu)

AREA 4 · Neurological, Mental Disorders and Ageing

Stroke Pharmacogenomics and Genetics

Coordinator
Fernández Cadenas, Israel
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Members
Cárcel Márquez, Jara (IR)
Cullell Fornes, Natalia (external entity)
Gallego Fàbrega, Cristina (external entity)
González Sánchez, Jonathan (external entity)
Lledós de Benito, Miquel (IR)
Llucià Carol, Laia (external entity)
Muiño Acuña, Elena (IR)

Main Lines of Research

- L1: Genetic and epigenetic risk factors associated with stroke.
- L2: Pharmacogenetics of neurovascular diseases.
- L3: Genetic and epigenetic risk factors associated with stroke outcome: neurological deterioration, disability and cognitive decline.
- L4: Omics to find potential drug targets and treatments for stroke. Integromics and multi-trait analysis.
- L5: CADASIL and other orphan diseases associated with stroke.
- L6: Genetic risk factors associated with SARS-CoV-2 infection and COVID-19 severity. COVID-19 and stroke.
- L7: Gut microbiome and stroke.

Scientific Challenges

The objectives for the coming years are:

At the scientific level

- Increase the impact factor of the group's publications.
- Consolidate the group as one of the groups with the greatest experience in epigenetic and pharmacogenomic studies in stroke.
- Find genetic factors associated with neurological risk and post-stroke disability that are potential therapeutic targets.
- Consolidate a line in microbiome and COVID-19 research.

At an organizational level

- Consolidate the group by presenting a constant number of researchers.
- Secure European or American international scholarships.
- Maintain or improve the group's position within the International Stroke Genetics Consortium (ISGC).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Neurovascular Unit (PI: Joan Martí-Fàbregas)
- Neurobiology of Dementias (PI: Albert Lleó)
- Complex Genetics Diseases (PI: José Manuel Soria)
- Complex Genetics Diseases (PI: Maria Sabater)
- Neurology Unit (PI: Rafael Blesa)
- Genetics of Neurodegenerative Diseases: (PI: Jordi Clarimon)

External Collaborations

- Invictus Plus network (Retics ISCIII)
- ISGC Consortium
- ICPC Consortium
- CADISP Consortium
- Genestroke Consortium
- Megastroke Consortium

Active Grants

- Israel Fernández Cadenas. Contratos Miguel Servet II 2017. CPII17/00021. Instituto de Salud Carlos III. Duration: 2018-2021. 110,625 €.
- Israel Fernández Cadenas. Proyecto MAESTRO: Análisis del interactoma: asociación de la MetAgenómica, genómica y Epigenómica con la evolución neurológica y la discapacidad después de un ictuS isquémico. PI18/01338. Instituto de Salud Carlos III. Duration: 2019-2021. 81,200 €.
- Elena Muiño Acuña. Estudis genètics i epigenètics en l'ictus. CM18/00198. Instituto de Salud Carlos III. Duration: 2019-2021. 64,926.17 €.
- Jara Carcel Márquez. Recerca de nous tractaments per millorar el deteriorament neurològic i la discapacitat post-ictus mitjançant estudis genètics i epigenètics massius. 2019FI_B00853. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2019-2023. 61,917.53 €.

- Miquel Lledos de Benito. Contratos PFIS: Contratos Predoctorales de Formación en Investigación en Salud 2019. FI19/00309. Instituto de Salud Carlos III. Duration: 2020-2024. 82,400 €.
- Israel Fernández Cadenas. iBioStroke: Identificación y validación clínica de biomarcadores para la evolución clínica post-ictus. AC19/00106. Instituto de Salud Carlos III. Duration: 2020-2022. 77,000 €.
- Anna Planas. INMUNGEN-CoV-2 Project. Consejo Superior de Investigaciones Científicas. Duration: 2020-2021. 50,000 €
- Israel Fernández. Study of the efficacy/safety profile of apixaban vs. acenocoumarol and its pharmacogenetics in patients with cardioembolic stroke and obstructive sleep apnea - APHAS study. ERISTA: European Thrombosis Investigator Initiated Research Program. REQ-0000021561. Duration: 2019-2021. 296,322 €.
- Israel Fernández. EPIGENISIS Project. Marató de TV3. Duration: 2018-2020. 396,250 €.
- Israel Fernández. Ayudas a grupos de investigación. 2017 SGR 00878. Agència d'Ajuts Universitaris i de Recerca. Duration: 2018-2020. 31,500 €
- Israel Fernández. Red Retics Invictus plus. Instituto de Salud Carlos III. RD16/0019. Duration: 2017-2022. 34,375 €.
- Israel Fernández/Jurek Krupinski. Sedman Project. Boehringer. Duration: 2015-2020. 300,000 €.

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

Grants Awarded in 2020

- Marina Guasch Jiménez. Contratos Río Hortega 2020. CM20/00056. Instituto de Salud Carlos III. Duration: 2021-2023. 53,732 €.
- Israel Fernández Cadenas. CNV and Stroke (CaNVAS). TBD 2020. University of Maryland. Duration: 2020-2024. 18,627.09 €.

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

Doctoral Theses

- Elena Muiño Acuña. Análisis de la etiopatogenia del cadasil mediante estudios transcriptómicos y estimación del pronóstico tras el ictus isquémico en el cadasil. Universitat Autonoma de Barcelona. Director: Israel Fernández Cadenas. Date of defense: 19/02/2020

Scientific Production

Total Impact Factor: 45.791 · Mean Impact Factor: 5.088

Cullell N., Carrera C., Muino E., Torres-Aguila N.-P., Carcel-Marquez J., Gonzalez-Sanchez J., Gallego-Fabrega C., Molina J., Besora S., Sotoca J., Buongiorno M.-T., Jimenez-Conde J., Giralt-Steinhauer E., et al. Genome-Wide Association Study of VKORC1 and CYP2C9 on acenocoumarol dose, stroke recurrence and intracranial haemorrhage in Spain (2020) SCI REP-UK, 10 (1), 2806-. **IF: 3.9980**

Falcone GJ, Kirsch E, Acosta JN, Noche RB, Leasure A, Marini S, Chung J, Selim M, Meschia JF, Brown DL, Worrall BB, Tirschwell DL, Jagiella JM, Schmidt H, Jimenez-Conde J, Fernandez-Cadenas I, Lindgren A, Slowik A, Gill D, Holmes M, et al. Genetically Elevated LDL Associates with Lower Risk of Intracerebral Hemorrhage. ANN NEUROL. 2020 Jul;88(1):56-66. doi: 10.1002/ana.25740. Epub 2020 May 7. PMID: 32277781. **IF: 9.03**

García-Berrocoso T, Palà E, Consegal M, Piccardi B, Negro A, Gill N, Penalba A, Huerga Encabo H, Fernández-Cadenas I, Meisel A, Meisel C, Jickling GC, Muñoz MÁ, Clúa-Espuny JL, Pedrote A, Pagola J, Juega J, Bustamante A, Montaner J. Cardioembolic Ischemic Stroke Gene Expression Fingerprint in Blood: a Systematic Review and Verification Analysis. TRANSL STROKE RES. 2020 Jun;11(3):326-336. doi: 10.1007/s12975-019-00730-x. Epub 2019 Sep 2. PMID: 31475302. **IF: 5.7**

Lewis JP, Backman JD, Reny JL, Bergmeijer TO, Mitchell BD, Ritchie MD, Déry JP, Pakyz RE, Gong L, Ryan K, Kim EY, Aradi D, Fernandez-Cadenas I, Lee MTM, Whaley RM, Montaner J, Gensini GF, Cleator JH, Chang K, Holmvang L, Hochholzer W, et al. Pharmacogenomic polygenic response score predicts ischaemic events and cardiovascular mortality in clopidogrel-treated patients. EUR HEART J CARDIOVASC PHARMACOTHER. 2020 Jul 1;6(4):203-210. doi: 10.1093/ehjcvp/pvz045. PMID: 31504375. **IF: 6.6**

Lim S.T., Thijs V., Murphy S.J.X., Fernandez-Cadenas I., Montaner J., Offiah C., Marquardt L., Kelly P.J., Bath P.M., Lim S.-Y., Ford G.A., Norrving B., Cox D., Prodan C.I., Barber P.A., Werring D.J., Perry R., Zgaga L., Dawson J., McCabe D.J.H., Platelet function/reactivity testing and prediction of risk of recurrent vascular events and outcomes after TIA or ischaemic stroke: systematic review and meta-analysis (2020) J NEUROL, 267 (10), 3021-3037. **IF: 3.9560**

Muino E., Bustamante A., Rodriguez-Campello A., Gallego-Fabrega C., Ois A., Carrera C., Cullell N., Torres-Aguila N., Carcel-Marquez J., Rubiera M., Molina C.A., Cuadrado-Godia E., Giralt-Steinhauer E., Jimenez-Conde J., Montaner J., Fernandez-Cadenas I., Roquer J., A parsimonious score with a free web tool for predicting disability after an ischemic stroke: the Parsifal Score (2020) J NEUROL, 267 (10), 2871-2880. **IF: 3.9560**

Soriano-Tarraga C., Lazcano U., Giralt-Steinhauer E., Avellaneda-Gomez C., Ois A., Rodriguez-Campello A., Cuadrado-Godia E., Gomez-Gonzalez A., Fernandez-Sanles A., Elosua R., Fernandez-Cadenas I., Cullell N., Montaner J., Moran S., Esteller M., Jimenez-Conde J., Identification of 20 novel loci associated with ischaemic stroke. Epigenome-wide association study (2020) EPIGENETICS-US, 15 (9), 988-997. **IF: 4.2510**

Verma SS, Bergmeijer TO, Gong L, Reny JL, Lewis JP, Mitchell BD, Alexopoulos D, Aradi D, Altman RB, Bliden K, Bradford Y, Campo G, Chang K, Cleator JH, Déry JP, Dridi NP, Fernandez-Cadenas I, Fontana P, Gawaz M, et al. Genomewide Association Study of Platelet Reactivity and Cardiovascular Response in Patients Treated With Clopidogrel: A Study by the International Clopidogrel Pharmacogenomics Consortium. CLIN PHARMACOL THER. 2020 Nov;108(5):1067-1077. doi: 10.1002/cpt.1911. Epub 2020 Jul 9. PMID: 32472697. **IF: 6.5**

Yan AR, Naunton M, Peterson GM, Fernandez-Cadenas I, Mortazavi R. Effectiveness of Platelet Function Analysis-Guided Aspirin and/or Clopidogrel Therapy in Preventing Secondary Stroke: A Systematic Review and Meta-Analysis. J CLIN MED. 2020 Dec 1;9(12):3907. doi: 10.3390/jcm9123907. PMID: 33271959. **IF: 1.8**

Other Publications

- Gallego-Fabrega C, Cullell N, Soriano-Tárraga C, Carrera C, Torres-Aguila NP, Muiño E, Cárcel-Márquez J, de Moura MC, Fernández-Sanlés A, Esteller M, Elosua R, Jiménez-Conde J, Roquer J, Montaner J, Krupinski J, Fernandez-Cadenas I. DNA methylation of MMPs and TIMPs in atherothrombosis process in carotid plaques and blood tissues. ONCOTARGET. 2020 Mar 10;11(10):905-912. doi: 10.18632/oncotarget.27469. PMID: 32206187.

Diffusion Activities

Symposium Organization

- Israel Fernández. Organizator. International Stroke Genetics Consortium, Insights of COVID-19 and stroke symposium. November 2020.

Invited Conferences

- Israel Fernández. Estudios genéticos en el ictus. Seminaris IRB Lleida. June 2020.
- Israel Fernández. COVID-19-Stroke projects. International Stroke Genetics Consortium, Insights of COVID-19 and stroke symposium. November 2020.
- Israel Fernández. Analysis of genetic factors associated with COVID-19 severity and stroke risk. COVID-19 VIII Bioinformatics and Genomics Symposium. Societat Catalana de Biologia. 14 December 2020.

Scientific Dissemination

- C. Gallego-Fabrega, E. Muiño, N. Cullell, J. Cárcel-Márquez, U. Lazcano, C. Soriano-Tárraga C. Carrera, N. Torres, P. Camps-Renom, L. Prats-Sánchez, E. Jiménez-Xarrié, J. Jiménez-Conde, J. Roquer, J. Montaner, J. Krupinski,J. Martí-Fábregas, I. Fernandez. Biological age might explain age differences between sexes at stroke onset. European Stroke Organisation and World Stroke Organization Virtual Conference (ESO-WSO 2020). Online, 7-9 November 2020.
- Jara Cárcel Márquez; Nuria P. Torres Águila; Elena Muiño; Caty Carrera; Natalia Cullell; Cristina Gallego Fabrega; Jordi Jiménez Conde; Pol Camps Renom; Luis Prats Sánchez; Joan Montaner; Jerzy Krupinsky; Joan Martí Fàbregas; Israel Fernández Cadenas. An integromic analysis finds new genes associated with lacunar stroke risk. European Stroke Organisation and World Stroke Organization Virtual Conference (ESO-WSO 2020). Online, 7-9 November 2020.
- Natàlia Cullell. Genètica i neurologia. VI Edició del Curs de Formació en Neurologia Clínica part II – Avenços (2019-2020). Online, 15 April 2020
- Natàlia Cullell, Carolina Soriano-Tárraga, Cristina Gallego-Fábrega, Jara Cárcel-Márquez, Caty Carrera, Nuria P Torres-Águila, Elena Muiño, Manel Esteller, Manuel Castro de Moura, Joan Montaner, Alba Fernández-Sanlés, Roberto Elosua, Joan Martí-Fábregas, Jerzy Krupinski, Jaume Roquer, Jordi Jiménez-Conde, Israel Fernández-Cadenas. Epigenome-wide association study and mendelian randomization in ischemic stroke risk. European Stroke Organisation and World Stroke Organization Virtual Conference (ESO-WSO 2020). Online, 7-9 Novembre 2020.
- Natàlia Cullell, Carolina Soriano-Tárraga, Cristina Gallego-Fábrega, Jara Cárcel-Márquez, Caty Carrera, Nuria P Torres-Águila, Elena Muiño, Manel Esteller, Manuel Castro de Moura, Joan Montaner, Alba Fernández-Sanlés, Roberto Elosua, Joan Martí-Fábregas, Jerzy Krupinski, Jaume Roquer, Jordi Jiménez-Conde, Israel Fernández-Cadenas. DNA methylation is associated with ischemic stroke risk: An Epigenome-Wide association study. 5th Annual Markets and Markets Epigenetics - Digital Conference. Online, 21-22 May 2020.

Diffusion and Dissemination to Society

- Natàlia Cullell. Interview on sleep patterns during a pandemic for COVID-19. Radio Sant Cugat. 2020.
- Israel Fernández. Els estudis genètics massius en COVID-19 poden ser útils per trobar tractaments. Les iniciatives altruistes internacionals en la genètica del COVID-19. Nit de la Recerca. 27 November 2020.

AREA 5

Uronephrology and Experimental S

218 General and Digestive Surgery

223 Neurosurgery

225 Nephrology

233 Women and Perinatal Health Research Group

238 Gynecologic and Peritoneal Oncology Group

Surgery

AREA 5 · Uronephrology and Experimental Surgery

General and Digestive Surgery

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Sánchez Cabús, Santiago (FGS)
Sánchez López, Anna (FGS)
Targarona Soler, Eduardo Maria (FGS)

Main Lines of Research

Gastrointestinal surgery

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

Hepatobiliopancreatic surgery

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

Endocrine, breast, abdominal wall, soft tissue sarcomas and advanced gynaecological surgery:

- Surgery of the thyroid gland. Research on thyroid cancer.
- Advanced surgery on parathyroid glands (primary and secondary hyperparathyroidism).
- Adrenal surgery
- Surgery for sarcomas: participation in the development and results of surgery for retroperitoneal tumours.
- Surgery for sarcomas: participation in GIST research through the Spanish Sarcoma Research Group (GEIS) and other organisations.
- Surgery for advanced gynaecological tumours.
- Advanced abdominal wall surgery. New techniques for ventral hernia repair.

Emergency care

- Collaborative project on clinical safety for the introduction of safe practices for polytraumatized patients.
- Collaborative project on clinical safety for the introduction of safe practices for polytraumatized patients in a multi-centre collaborative database through the Catalan Trauma Database - TraumaCAT
- Collaborative project on clinical safety for fragile and elderly patients in emergency surgery and care through a Geriatric Emergency department accredited at our Hospital by the American College of Physicians.
- Collaborative project on clinical safety for emergency surgical treatment for aorta-enteric fistulae in collaboration with the Vascular Surgery Department.
- Collaborative project on clinical safety for outpatient treatment of non-complicated diverticulitis
- Open abdomen and damage control surgery in non-traumatic patients.
- Best practices in emergency surgery for the prevention of burst abdomen and acquired abdominal hernia after surgery.
- Best practices in emergency surgery for small bowel occlusion syndrome
- Collaborative project on tertiary peritonitis treatment with the Infectious Diseases department.
- Collaborative project on Central Catheter infection with the Infectious Diseases department

Scientific Challenges

Gastrointestinal surgery

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

Hepatobiliopancreatic surgery

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

Emergency surgery

- Consolidation of a multidisciplinary group for polytraumatized patient care.

- Technical innovations in wound Infection after emergency surgery.
- Technical innovations in prevention of wound hernia after emergency surgery in collaboration with the Abdominal Wall Hernia Unit.
- Possible role of laparoscopic hernia repair in emergency surgery.
- Development of best clinical practices guidelines for Ogilvie's Syndrome and Volvulus.

Breast surgery

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

Endocrinal and cervical surgery

- Technical innovations in surgery.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Endocrinology, Diabetes and Nutrition Group. Institut de Recerca Hospital de la Santa Creu i Sant Pau - Universitat Autònoma de Barcelona (EDUAB - IRHSP). Eugenia Mato (CIBER Bioingeniería, Biomateriales y Nanomedicina).

External Collaborations

- Obtención de resecciones hepáticas para aislamiento de hepatocitos para uso en investigación. Donation and Tansplantation Institute (DTI). 49/2009.
- Dr. González (PI at Hospital de Sant Pau). RESAR Project. Project of international prospective database in Retroperitoneal Sarcomas, led by the Tumori Institute of Milan since December 2018.

Active Grants

- Juan Carlos Escolà Gil; Antonio Moral Duarte. Adiposidad, inflamación y desregulación del colesterol en el carcinoma de tiroides. Evaluación de estrategias terapéuticas basadas en la reducción del colesterol y la activación de LXR. PI19/00136. Beca FIS. (3 years)
- Daniel Escuin; José Ignacio Pérez García. Investigación del papel de los miRNAs y snoRNAs circulantes como marcadores surrogados del estatus de los ganglios linfáticos en pacientes con cáncer de mama. PI19/00362. Beca FIS.
- José Antonio González (collaborator). Retroperitoneal Sarcoma Registry (RESAR): prospective collection of primary retroperitoneal sarcoma patient's data, radiological and patholegical material for the TransAtlantic Retroperitoneal Sarcoma Working Group.
- José Antonio González (collaborator). Accuracy and Concordance of Biopsy Diagnosis in Retroperitoneal Sarcoma (BISARC): An International Multi-Institutional Prospective Study by the Trans-Atlantic Australasian Retroperitoneal Sarcoma Working Group (TARPSWG). TARPSWG-R1905.
- José Antonio González (collaborator). The Natural History of Ganglioneuroma: A study by the Trans-Atlantic Australasian Retroperitoneal Sarcoma Working Group (TARPSWG). TARPSWG-2003.
- José Antonio González (collaborator). Variations in paterns of care for retroperitoneal sarcoma: a study of the Trans-Atlantic Australasian Retroperitoneal Sarcoma Working Group. TARPSWG–R2005.
- José Antonio González (collaborator). Anticipated organs resection and pathologic infiltration- RESAntiPath. TARPSWG–R2006.
- José Antonio González (collaborator). PI: Jason Sicklick, MD (Moores Cancer Center, University of California San Diego Health System, San Diego, US). Multi-institutional Dermatofibrosarcoma Protuberans Study. The Natural History of Ganglioneuroma: A Study by the Trans-Atlantic Australasian Retroperitoneal Sarcoma Working Group (TARPSWG)
- José Antonio González (collaborator). PI: Sinziana Dumitra MD (McGill University, Montreal, Canada). Spermatic Cord Sarcomas – A Retrospective Analysis of Diagnosis, Clinical Features, Treatment Patterns and Outcomes (SARCORD) – A study by TARPSWG
- Jesús Manuel Bollo. Minimally invasive right colectomy anastomosis study. IDIVAL. MIRCAST.
- Jesús Manuel Bollo (collaborator). A Randomized, Multicentre, Open-label controlled Phase II Trial of Foxy-5 as Neo-adjuvant Therapy in Subjects with Wnt-5a low colon Cancer. Foxy-5 PH2 SMS-0472B. Trial short code: Foxy-5 PH2. Sponsor: WntResearch AB EudraCT: 2018-003074-27.
- José Antonio González (collaborator). EORTC 62092-22092- STRASS: Estudio fase III randomizado de radioterapia preoperatoria vs cirugía sola en paciente con sarcoma retroperitoneal.
- José Antonio González (collaborator). GEIS-37: Ensayo clínico Fase I-II, abierto, prospectivo y multicéntrico, que explora la combinación de trabectedina y radioterapia en pacientes con sarcoma de tejidos blandos en retroperitoneo (RETRO-TRASTS).
- José Antonio González (PI Hospital de Sant Pau). PI: Carolyn Nessim, The Ottawa Hospital, Co-PI: Bibianna Purgina, The Ottawa Hospital Co-I: Brittany Dingley, The Ottawa Hospital. Retroperitoneal Myxoid LPS: Always a Metastasis? TARPSWG 1803
- José Antonio González (PI Hospital de Sant Pau). PI: Hannah L Tattersall (University Hospitals Birmingham, Birmingham, UK), Co-PI: Samuel J Ford (University Hospitals Birmingham, Birmingham, UK), Co-I: Alessandro Gronchi (Istituto dei Tumori, Milan, Italy). Primary Mesenteric Sarcomas. TARPSWG 1804.
- José Antonio González (collaborator). Grupo de trabajo de sarcomas de partes blandas localizados extremidades/Pared de tronco del GEIS.
- José Antonio González. Profilaxis de la infección de herida en la cirugía de eventroplastia abierta mediante la protección del espacio subcutáneo con empleo de Alexis® vs empleo de separador metálico bivalvo tradicional. IIBSP-ALE-2019-21.
- José Antonio González. Evaluación del dolor postoperatorio inmediato y crónico en la fijación de malla en la reparación de eventraciones utilizando cianoacrilato en comparación con la sutura de monofilamento absorbible. IIBSP-CIA-2019-41.
- José Antonio González (associated researcher). Cleofé Romagosa (PI) I Estudio sobre el impacto en el pronóstico y la calidad de vida del diagnóstico anatomopatológico centraliazado de sarcomas de partes blandas en el estado español. Asociación Mari Paz Giménez Casado. Duration: 2019-2021. 85,000 €.
- José Antonio González (associated researcher). Perioperative ISchemic Evaluation-3 (POISE3) Trial. Multicentric study leaded by Hamilton General Hospital Campus (Ontario, Canada).
- Jesús Manuel Bollo (associated researcher). A Randomized, Multicentre, Open-label Controlled Phase II Trial of Foxy-5 Neo Adjuvant Therapy in Subjects with Wnt-5a Low Colon Cancer. Clinical Trial Protocol SMS-0472B.
- Eugènia Mato, Joan Carles Escolà, Antonio Moral, José Ignacio Pérez. Associació entre adipocitocines, mediadors pro-inflamatoris i desregulació del colesterol en els carcinomes tiroïdals i la progressió tumoral.
- V. Pomar (PI in Hospital Sant Pau), R. Medrano (Hospital Sant Pau) Oriol Gasch (PI, Hospital de Sabadell). Randomized Clinical Trial on the need of antibiotic treatment on catheter related sepsis due to staph coag-negative. INF-BACT-2017. EudraCT: 2017-003612-39.
- Dr. López Contreras (PI in Hospital Sant Pau), Dr. Medrano Caviedes (Collaborator Hospital Sant Pau). A Phase 3 prospective, randomized, multicenter, open-label, central assessor-blinded, parallel group,

comparative study to determine the efficacy, safety and tolerability of aztreonam-avibactam (ATM-AVI) ±metronidazole (MTZ) versus meropenem±colistin (MER±COL) for the treatment of serious infections due to Gram-negative bacteria, including metallo-β-lactamase (MBL) – producing multidrug resistant pathogens, for which there are limited or no treatment options. Pfizer. C3601002. 234454.

- V. Pomar (PI, Hospital Sant Pau), Oriol Gasch (PI, Hospital de Sabadell). Randomized Clinical Trial on the need of antibiotic treatment on catheter related sepsis due to staph coag-negative. INF-BACT-2017. EudraCT: 2017-003612-39.
- Dr. López Contreras (PI, Hospital Sant Pau), Dr. Medrano Caviedes (Collaborator Hospital Sant Pau). A Phase 3, prospective, Randomized, Multicenter, Open Label Central, Assessor Blinded, parallel group, comparative study to determine the efficacy, Safety and Tolerability of Aztreonam - Avibactam (ATM- AVI) +/- Metronidazole (MTZ) versus meropenem±colistin (MER±COL) for the treatment of serious infections due to Gram Negative Bacteria, including Metallo-Beta-Lactamase (MBL) - producing multi drug resistant pathogens, for which there are limited or no treatment options, Pfizer. C3601002. 234454.
- Rodrigo Gustavo Medrano Caviedes. Member of the Grup de Treball TraumCat. Registre de Traumatismes Greus de Catalunya.
- Rodrigo Gustavo Medrano Caviedes. Member of the COVID-CIR collaborative group. Estudi de la relació COVID i Cirurgia Urgent.

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

Awards

- Randomized clinical trial of intracorporeal versus extracorporeal anastomosis in laparoscopic right colectomy (IEA trial). Lino Torre Award for Surgical Research, Hospital del Mar. Barcelona, 6 November 2020.

Doctoral Theses

- Jesús Bollo. Anastomosis intracorpórea versus extracorpórea en la hemicolectomía derecha laparoscópica. Estudio prospectivo aleatorizado, Universitat Autònoma de Barcelona. Director: EM Targarona. Date of defense: 21/07/2020

Scientific Production

Total Impact Factor: 97.223 · Mean Impact Factor: 3.241

Alfonso López-Mora D, Sizova M, Estorch M, Flotats A, Camacho V, Fernández A, Abouzian S, Fuentes-Ocampo F, Pérez Garcia JI, Chico Ballesteros AI, Duch J, Domènech A, Moral Duarte A, Carrió I. Superior performance of 18F-fluorocholine digital PET/CT in the detection of parathyroid adenomes. EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING 2020 Mar; 47(3): 572-578. https://doi.org/10.1007/s00259-020-04680-7 **IF: 7.081**

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Balague C., Arroyo A., Prehabilitation: Another step towards the optimization of surgical patients La prehabilitación, un paso más en la optimización del paciente quirúrgico (2020) CIR ESPAN, 98 (4), 175-177. **IF: 1.3230**

Balague C., Fdez-Ananin S., Sacoto D., Targarona E.M., Paraesophageal Hernia: To Mesh or Not to Mesh: To Controversy Continues (2020) J LAPAROENDOSC ADV S, 30 (2), 140-146. **IF: 1.3100**

Balague C., Fernandez-Ananin S., Ibarzabal A., Paris M., Vilallonga R., Puche J.J., Ruiz de Adana J.C., The role of endoprostheses in the treatment of leaks after laparoscopic sleeve gastrectomy. Analysis of a Spanish registry Papel de las endoprótesis en el tratamiento de las fistulas posgastrectomía vertical laparoscópica. Análisis de un registro nacional (2020) CIR ESPAN, 98 (7), 373-380. **IF: 1.3230**

Escuin D, López-Vilaró L, Bell O, Mora J, Moral A, Pérez JI, Arqueros C, Ramón y Cajal T, Lerma E, Barnadas A. MicroRNA-1291 Is Associated With Locoregional Metastases in Patients With Early-Stage Breast Cancer. FRONTIERS IN GENETICS. 2 December 2020. doi:10.3389/fgene.2020.562114. **IF: 3.26**

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Bollo J., Turrado V., Rabal A., Carrillo E., Gich I., Martinez M.C., Hernandez P., Targarona E., Randomized clinical trial of intracorporeal versus extracorporeal anastomosis in laparoscopic right colectomy (IEA trial) (2020) BRIT J SURG, 107 (4), 364-372. **IF: 5.6760**

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- González JA (chapter author). Sarcomas Retroperitoneales. Monografias de la AEC nº 10. Aran Ediciones 2020.
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Diffusion Activities

- Sánchez Cabús S, Rodríguez M, Molina V, Martín A, Moral A. Utilització de reconstrucció hologràfica tridimensional en cirurgia complexa hepatobiliopancreàtica. MWC 2020. Hospital de la Santa Creu i Sant Pau, 24 February 2020.
- Centro de excelencia 2.0 alternativas a la fijación mecánica de las mallas en la reparación de los defectos de la pared abdominal. Live surgery broadcast. Online, 27 October 2020.
- Resección compartimental retroperitoneal izquierda. Fundamentos y Técnicas de abordaje de los Sarcomas Retroperitoneales Primarios. Online Course AEC. 24 September 2020.
- Tratamiento quirúrgico en patologia oncológica musculo-esquelética abdominal y retroperitoneal. 28 Curso de tumores del aparato locomotor. Webinar, 26 November 2020.
- Clinical case presentation. Update in multidisciplinary management of retroperitoneal sarcomes. Live Webinar. AEC, 3 June 2020.
- Vitiello G, Molina Santos V, Sacoto Urgilez D, Moral Duarte A, Sánchez-Cabús S. Video of the benefits on laparoscopic liver re-resection. Annual Americas Hepato-Pancreato-Biliary Association (AHPBA) Congress. Miami, 5-8 March 2020.
- Molina V, Vitiello G, Sacoto D, Moral A, Sánchez-Cabús S. Laparoscopic liver resection of the Spiegel lobe by a left-sided approach preserving an accessory left hepatic artery. Annual Americas Hepato-Pancreato-Biliary Association (AHPBA) Congress. Miami, 5-8 March 2020.
- Sánchez Cabús S. Webinar: Pancreatectomía distal laparoscópica: aspectos basados en la evidencia. Avances en cirugía de tumores pancreáticos. Sociedad Argentina de Cirugía Digestiva. 24 July 2020.
- Cirugía en tiempos del COVID 19. Problemas, consecuencias y soluciones. Una visión en Iberoamérica. Fundación Academia Aesculap, México. Virtual Meeting.14 May 2020.
- Symptomatic Gastroesophageal Reflux Disease, Management Algorithm, International Academic Collaborative. Indian Association of Gastrointestinal Endosurgeons. Virtual Meeting, 18 June 2020.
- Estado del arte en esplenectomía laparoscópica. Sociedad Peruana de Cirugía Endoscópica. Virtual meeting, 25 August 2020.
- Simulación quirúrgica, seguridad y superación. Asociación Latino América de Cirugía Endoscópica. ALACE. Virtual meeting, 10 September 2020.
- Lap right colectomy: intra or extracorporeal anastomosis? ELSA International lecture. Elsa 2020 Virtual Congress. MIS in Era of Disruption. Endo Laparoscopic Society of Asia. Virtual Meeting. September 11, 2020.
- Curso básico de Cirugía Laparoscópica para Residentes de primer año. 11ª Edición. Hospital de Sant Pau. Barcelona, 19-21 February 2020.

AREA 5 · Uronephrology and Experimental Surgery

Neurosurgery

Coordinator
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Rico Pereira, Marta (FGS)
Rodríguez Rodríguez, Rodrigo (FGS)
Sánchez Casas, Marc (FGS)
Sánchez Nevado, Raquel (FGS)

Main Lines of Research

- Tumour biology: gliomas (prognostic value of different mutations in anaplastic astrocytoma and GBM), pituitary gland adenomas.
- Biomarkers in anaplastic astrocytomas and glioblastoma multiforme.
- Prospective study of patients operated on using an endoscopic endonasal approach.
- Biomaterials: comparative study of two different cranial bone fixations.
- Anatomical studies of the skull base.
- Clinical evaluation of neurostimulation techniques in different neurological entities (Parkinson's disease and neuropathic pain).

Scientific Challenges

- Neurostimulation for resistant craniofacial pain (jointly with the Neurology and Pain Clinic Unit).
- Use of intraoperative ultrasound for the treatment of brain tumours.
- Monitoring of glioma tumour diagnosis, treatment and prognostic factors (Hospital Sant Pau - Hospital del Mar).
- Pituitary adenoma treatment: cavernous sinus medial wall approach to treating adenomas .
- Intraoperative neuromonitoring of oculomotor cranial nerves in skull base tumours.
- Join the Spinal Surgery Database (Hospital de Sant Pau - Hospital del Mar).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Cristian de Quintana. Dynamics of the synaptic molecular machinery in cognitive processes and intellectual deficit. (FIS project) In collaboration with Mollecular Biology.
- Cristian de Quintana. Application of new technologies in brain tumor resection. In collaboration with Neurooncology group.
- Studies about Central Nervous Systems (CNS). A Data Base of all the CNS tumors in collaboration with Medical and Radiotherapy Oncology, Radiology.
- Studies about Glioma tumors in collaboration with Pathological Anatomy.
- Studies about pituitary tumors in collaboration with Endocrinology.
- Studies about endoscopic endonasal surgery with ENT.

External Collaborations

- Fernando Muñoz. Registre prospectiu de malalts atesos a la xarxa hospitalària del SISCAT amb el diagnòstic d'hemorràgia subaracnoïdal espontània.
- Fernando Muñoz. Estudio prospectivo de base de datos sobre HSA en Cataluña. Pla Director Malaltia Vascular. Fundació Ictus.
- Fernando Muñoz, Carlos Asencio. SWITCH Trial. Swiss Trial of Decompressive Craniectomy versus Best Medical Treatment of Spontaneous Intracerebral Hemorrhage. An International Randomized Controlled Trial.
- Cristian de Quintana. Study of survival in relation to the degree of resection and degree of tumoral remnants (subgroup of GLIOCAT).
- Carlos Asencio, Cristian de Quintana, Rodrigo Rodríguez, M. Jesús Álvarez, Juan Patino, Fernando Muñoz. A Post Market registry to assess the clinical performance of a polymeric cranial burr hole cover system (Cranial Cover). Cover Registry. Prospective Study.
- Carlos Asencio, Cristian de Quintana, Rodrigo Rodríguez, M. Jesús Álvarez, Juan Patino, Fernando Muñoz. Observational, retrospective, case series, post-marketing clinical follow-up study to evaluate the performance and safety of a polymeric clamp-like cranial fixation system.

Scientific Production

Total Impact Factor: 20.034 · Mean Impact Factor: 2.504

Aibar-Duran J.A., de Quintana-Schmidt C., Alvarez Holzpafel M.J., Hernandez F.M., Cortes C.A., Martinez G.V., Bertran G.C., Intraoperative Use and Benefits of Tractography in Awake Surgery Patients (2020) WORLD NEUROSURG, 137, e347-e353. **IF: 1.8290**

Arikan F., Errando N., Lagares A., Gandara D., Gabarros A., Lopez-Ojeda P., Ibanez J., Brell M., Gomez P.A., Fernandez-Alen J.A., Morera J., Horcajadas A., Vanaclocha V., Llacer J.L., Bano-Ruiz E., Goncalves-Estella J.M., et al. Variability of Clinical and Angiographic Results Based on the Treatment Preference (Endovascular or Surgical) of Centers Participating in the Subarachnoid Hemorrhage Database of the Working Group of the Spanish Society of Neurosurgery (2020) WORLD NEUROSURG, 135, e339-e349. **IF: 1.8290**

Belvis R., Rodriguez R., Guasch M., Alvarez M.J., Molet J., Roig C., Efficacy and safety of surgical treatment of cluster headache Eficacia y seguridad del tratamiento quirúrgico en la cefalea en racimos (2020) MED CLIN-BARCELONA, 154 (3), 75-79. **IF: 1.6350**

Corripio I., Roldan A., Sarro S., McKenna P.J., Alonso-Solis A., Rabella M., Diaz A., Puigdemont D., Perez-Sola V., Alvarez E., Arevalo A., Padilla P.P., Ruiz-Idiago J.M., Rodriguez R., Molet J., Pomarol-Clotet E., Portella M.J., Deep brain stimulation in treatment resistant schizophrenia: A pilot randomized cross-over clinical trial (2020) EBIOMEDICINE, 51, -. **IF: 5.7360**

Gou G., Roca-Fernandez A., Kilinc M., Serrano E., Reig-Viader R., Araki Y., Huganir R.L., de Quintana-Schmidt C., Rumbaugh G., Bayes A., SynGAP splice variants display heterogeneous spatio-temporal expression and subcellular distribution in the developing mammalian brain (2020) J NEUROCHEM, -. **IF: 4.0660**

Roldan A., Portella M.J., Sampedro F., Alonso-Solis A., Sarro S., Rabella M., Grasa E.M., Alvarez E., Rodriguez R., Camacho V., Fernandez-Leon A., Fuentes F., Perez-Blanco J., Perez V., Mckenna P., Pomarol-Clotet E., Corripio I., Brain metabolic changes in patients with treatment resistant schizophrenia treated with deep brain stimulation: A series of cases (2020) J PSYCHIATR RES, 127, 57-61. **IF: 3.7450**

Tejada Solis S., de Quintana Schmidt C., Gonzalez Sanchez J., Fernandez Portales I., del Alamo de Pedro M., Rodriguez Berrocal V., Diez Valle R., Intraoperative imaging in the neurosurgery operating theatre: A review of the most commonly used techniques for brain tumour surgery Imagen intraoperatoria en el quirófano de neurocirugía: revisión de las técnicas más empleadas para la cirugía de los tumores cerebrales (2020) NEUROCIRUGIA, 31 (4), 184-194. **IF: 0.5970**

Tejada Solis S., Plans Ahicart G., Iglesias Lozano I., de Quintana Schmidt C., Fernandez Coello A., Hostalot Panisello C., Ley Urzaiz L., Garcia Romero J.C., Diez Valle R., Gonzalez Sanchez J., Duque S., Glioblastoma treatment guidelines: Consensus by the Spanish Society of Neurosurgery Tumor Section Consenso sobre guías de tratamiento de los glioblastomas elaborado por el Grupo de Trabajo de Neurooncología (GTNO) de la SENEC (2020) NEUROCIRUGIA, 31 (6), 289-298. **IF: 0.5970**

Diffusion Activities

- Fernando Muñoz Hernández (co-director). Advanced Skull Base Course. Invasive sellar and suprasellar tumors. Live Surgery. Servei de Neurocirurgia. Hospital de la Santa Creu i Sant Pau. Barcelona, January 2020.
- Cristian de Quintana-Schmidt (director and teacher). Ultrasond Training in Neurosurgery. Servei de Neurocirurgia. Hospital de la Santa Creu i Sant Pau. Barcelona, 30 January 2020.
- JA Aibar-Duran. Deep brain stimulation in subcingulate gyrus for treatment-resistant depression: looking for better target within the region. Oral communication. Spanish Neurosurgical Group Annual Meeting. November 2020.

AREA 5 · Uronephrology and Experimental Surgery

Nephrology

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Coll Piera, Elisabet (F. Puigvert)
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Díaz Gómez, Joan Manel (F. Puigvert)
Domingo Gallego, Andrea (F. Puigvert)
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Lloret Cora, María Jesús (F. Puigvert)
Lorente Grandoso, Laura (F. Puigvert)
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Pybus Oliveras, Marc (F. Puigvert)
Ruiz del Prado, Patricia (F. Puigvert)
Sanmiguel Amigo, Luz (F. Puigvert)
Silva Torres, Irene (F. Puigvert)
Torra Balcells, Roser (F. Puigvert)

Main Lines of Research

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

These different research areas are analysed in detail below:

- Dr Torra is the head researcher of the hereditary diseases research area – she and Dr Ars have led many research projects relating to these diseases, and both have supervised several doctoral theses. The hereditary renal diseases team is currently analysing phenotype variability of autosomal dominant diseases, in both the genomic and the clinical dimensions. Recently, a new project on Artificial Intelligence for inherited kidney diseases has been awarded to the team. Dr Torra coordinates both the Catalan and the Spanish hereditary renal diseases teams, and she is a member of the board of the EDTA (European Dialysis and Transplant Association). Recent research conducted by the group includes extensive analyses of autosomal dominant Alport syndrome.
- Dr Ars heads the molecular genetics laboratory; she has optimised the next-generation sequencing tools for hereditary renal diseases. Dr Ars coordinates the Sant Pau IIB's Fundació Puigvert's online Biobank node, belonging to the National Biobanks Platform. She is also the person responsible for organising a European Molecular Quality Network (EMQN) outline for quality control of the genetic diagnoses of ADPKD by European laboratories. Currently she is leading a research project for applying this outline to early-onset kidney diseases.
- Dr Fernández-Llama, as an expert in arterial hypertension, has participated in a collaborative trial to evaluate 24-hour central blood pressure and its relationship with organic damage. She is currently the leader of a collaborative project within the Catalan Hypertension Group on the variability of blood pressure and its relationship with organic damage in hypertensive elderly patients.
- Dr Bover is also a member of the EDTA working group board on bone metabolism, this being his primary research interest. Dr Bover and Dr Lloret are currently performing a pilot study on the evaluation of bone quality using bone microindentation (in addition to bone quantity by DXA) in renal transplant patients.
- Dr Díaz and Dr Marco lead several clinical trials, both national and international, on glomerular and systemic diseases affecting the kidneys. They also participate in registries at a Catalan, Spanish and European level.
- Dra. Díaz leads the studies on renal inflammation and fibrosis. Renal grafts from cadaveric donors are an apt model for her study due to their worse prognosis and to a high probability of inflammation and ensuing fibrosis as compared to living donor grafts. Drs Díaz and Guillén (previously members of this institution) have identified the activation of purinome elements, both in cell cultures and in grafts from cadaveric donors. This activation participates in inflammation and fibrosis, triggered by the phenotype change of macrophages into anti-inflammatory and pro-fibrotic, and interacting with other pro-fibrotic known pathways. They are also investigating the role of succinate in the changes of macrophage phenotype and fibrosis. The role of the purinergic and succinate pathways could be important for the detection of new markers and new therapeutic targets associated with renal graft dysfunction after transplant.
- Dr JM Díaz leads the dialysis research line. Currently the two major research areas here concern the appropriateness of peritoneal dialysis, and extended haemodialysis in the critically ill patient with acute renal failure.
- Dr Coll, who belongs to the dialysis team, heads the research on genomic damage in patients on renal replacement therapy, whether transplant or dialysis. She analyses the differences in oxidative stress in transplanted patients vs. those on dialysis. She also analyses the effects of different antioxidants on the genomic damage suffered by dialysis patients.
- Furthermore, in the last two years she has started to study the effects of BPA and plastics on genomic damage. Dr Ruíz joined this team during this period, and he is focusing his doctorate studies on this topic.
- The transplant team, led by Dr Guirado and Dr Facundo, either participates in or heads over 20 studies, including clinical trials with drugs to prevent kidney rejection or for treating associated viral infections. Their active participation and their leadership in the investigation of biochemical, serologic and genomic biomarkers of both rejection and viral infections associated with renal transplants, are outstanding.
- Ms Luz San Miguel, Dr Cristina Canal, Ms Judith Ballart, Ms Irene Silva and Ms Beatriz Bardají are the coordinators of clinical studies and trials. Their work is essential and of the utmost importance for conducting the high number of clinical trials performed by the group.

Scientific Challenges

- To strengthen our translational character and maintain our scientific production.
- To transfer research results to society as our main goal. To maintain and increase our relationship with patient associations in order to progressively incorporate the RRI approach into our translational research with the aim of better aligning the research process and its results with the values, needs, and expectations of our patients.
- To foster innovation: to continue with the active collection of research samples from CKD and transplant patients. To collaborate with private and research groups in the detection of tissue, urine, and blood biomarkers for the development of innovative tools for optimizing the diagnosis or follow-up control of transplants, inherited diseases, and chronic renal patients. To participate in innovative projects using information and communication technologies (ICT) for educational purposes and for the empowerment of patients. To incorporate novel technologies, such as artificial intelligence, into daily practice in nephrology.
- To strengthen collaborative research as the best way to obtain funds and results: to maintain participation in national working groups and increase international cooperation. To secure access to European project funds in the field of inherited rare diseases.
- To consolidate our participation in the drafting of national and international clinical nephrology guidelines.
- To increase our participation in relevant private pharmaceutical clinical studies, specially early-stage clinical trials.

Collaborations

Collaborations with other IIB Sant Pau Groups

There exists an active collaboration in basic and clinical research projects with other IIB Sant Pau groups and platforms:

- Inflammatory Diseases Group: renal fibrosis.
- Anaesthesiology Group (in collaboration with the Catalan ANESCARDIOCAT Group): risk of major adverse cardiovascular and cerebrovascular events in non-cardiac surgery associated with the preoperative estimated glomerular filtration rate.
- Paediatrics Group: nephrotic syndrome evolution, Ig A nephropathy and inherited kidney diseases.
- Andrology Group: infertility.
- Urology Group: genetic predisposition to congenital urological malformations and transplant.
- Gynecology Group: High risk pregnancies, prenatal diagnosis, preimplantation diagnosis.
- Rheumatology Group: bone disease in Chronic Renal Failure.
- Multidisciplinary teams for inherited kidney diseases: collaboration with most specialities from Sant Pau Hospital for different inherited kidney diseases (data bases, articles, protocols…).
- Biobank platform: translational research in all specific lines.

External Collaborations

National Academic Collaborations

- Department of Biochemistry and Molecular Biology, Universitat de Barcelona, Institute of Biomedicine and Oncology Programme, National Biomedical Research Institute of Liver and Gastrointestinal Diseases (CIBER EHD): renal fibrosis.
- Laboratory of Proteomics CSIC/Universitat Autònoma de Barcelona: diabetic nephropathy.
- Mutagenesis Department of Universitat Autònoma de Barcelona: renal impairment in chronic kidney disease.
- Genomic Regulation Center (CRG): inherited kidney diseases.
- Universidad de Salamanca: acute kidney injury.
- Universitat de Lleida: chronic kidney disease.
- National Scientific Societies (such as Sociedad Española de Nefrología) and investigators of other centres: basic and clinical studies (including public grants, clinical trials, observational studies...) promoted by them.
- Universtitat Politécnica de Catalunya. Application of artificial intelligence to inherited kindey diseases.
- Fundación Jiménez-Díaz. Use of peptidomics and metabolomics for the prediction of autosomal dominant Alport syndrome outcomes.
- Hospital Germans Trias i Pujol. Use of epigenomics for the prediction of autosomal dominant Alport syndrome outcomes.

International Academic Collaborations/International Networks and Consortiums

- Biochemistry and Microbiology Institute UACH (Chile): renal fibrosis and diabetic nephropathy.
- Mayo Clinic (Rochester, USA): Autosomal Dominant Polycystic Kidney Disease (ADPKD).
- Hospital Tenon (Paris, France): Nephrotic syndrome.
- EURenOmics Plataform: membranous nephropathy and nephrotic syndrome.
- Toronto General Hospital (Canada): molecular genetics of idiopathic nephrotic syndrome.
- University of Melbourne (Australia): Alport syndrome.
- Wake forest University (USA): MUC1 studies.
- Cyprus University (Cyprus): Alport modifiers studies.
- University Medicine Groningen (The Nederlands): ADPKD trials.
- EDTA (multinational, Europe): inherited kidney diseases and chronic kidney disease-mineral and bone disorders.
- Addenbrooke's Hospital, Cambridge University Hospitals NHS (United Kingdom): vasculitis.
- EUVAS Group (multinational collaborative Group): vasculitis.
- CYS-tic consortium: Autosomal Dominant Polycystic Kidney Disease cohort studies.
- NEOCYST: Early Onset Cystic Kidney Disease.
- CPG Cystic liver diseases: international group for the development of guidelines.
- European Molecular Quality Network: Autosomal Dominant Polycystic Kidney Disease (PKD1 and PKD2).

Patients Organisations

- Alianza VHL (Von Hippel Lindau disease).
- Asociación Española de Esclerosis Tuberosa.
- MPS España (mucopolisacaridosis).
- ASHUA (atypical hemolytic uremic syndrome).
- AIRG (inherited diseases).
- ACLECA (lupus).
- ALCER (chronic kidney disease).

Private National and International Collaborations

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

Active Grants

- Roser Torra Balcells. Nefropatías familiares no filiadas: genes implicados en su causa y su variabilidad fenotípica. PI15/01824. Instituto de Salud Carlos III. Duration: 2016-2020. 115,500 €.
- Elisabeth Ars Criach. Estudio genómico de nefropatías de inicio temprano. PI16/01998. Instituto de Salud Carlos III. Duration: 2017-2021. 107,500 €.
- Montserrat Mercedes Díaz Encarnación. Impacto de las vías purinérgicas sobre la activación de macrófagos en el donante cadáver: pieza clave en el desarrollo de fibrosis y disfunción en el trasplante renal. PI17/01566. Instituto de Salud Carlos III. Duration: 2018-2021. 44,000 €.
- Roser Torra Balcells. Modelos de predicción en las nefropatías hereditarias autosómicas dominantes. PI18/00362. Instituto de Salud Carlos III. Duration: 2019-2021. 82,000 €.
- Elisabeth Ars Criach. Heterogeneidad clínica, genética y alélica de las enfermedades renales hereditarias de debut temprano: nuevas causas moleculares de anomalías congénitas del riñón y el tracto urinario. PI19/01633. Instituto de Salud Carlos III. Duration: 2020-2022. 77,000 €.
- Roser Torra Balcells. Contratos para la intensificación de la actividad investigadora 2019. INT19/00073. Instituto de Salud Carlos III. Duration: 2020-2022. 60,000 €.
- Montserrat Mercedes Díaz Encarnación. Papel de la vía del succinato en la inflamación de los riñones procedentes de donantes cadáver. FMM 2019. Fundación Mutua Madrileña. Duration: 2019-2022. 95,000 €.
- Lluís Guirado. Estudi multicèntric, aleatoritzat per avaluar l'eficàcia de la individualització del risc immunològic basat en biomarcadors selectius (disparitat d'eplets HLA i ELISPOT IFN-Y), per optimitzar el tractament immunosupressor en pacients trasplantats renals de donant viu (BIOIMMUN). Generalitat de Catalunya (Convocatòria PERIS 2016. Programes de recerca orientats). SLT002/16/00089. Duration: 2017-2020. 30,589.14 €.
- Patricia Fernández de la Llama. Evolución de la variabilidad de la presión arterial posicional y temporal y su relación con el daño orgánico en ancianos hipertensos. Fundación Senefro. Ayudas 2019 a la Investigación en Nefrología. Duration: since 2019. 24,000 €.
- Roser Torra. Red de Investigación Renal. Instituto de Salud Carlos III. RD16/0009/0019. Duration: 2017-2021. 121,379.50 €.
- José Ballarín. Grup consolidat de Recerca: Grup d'Investigació en Nefrologia. 2017 SGR 676. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.

Clinical Trials and Other Prívate or Academic Studies

- María Jesús Lloret. Manejo del fracaso renal agudo en Cataluña. Registro de tratamiento renal sustitutivo en pacientes con fracaso renal agudo (ESTUDIO REGISFRA). Societat Catalana de Nefrologia / Societat Catalana de Medicina Intensiva.
- Roser Torra. Registro de resultados clínicos de la enfermedad de Fabry (FOS). Shire Pharmaceuticals Ibérica, S.L.
- Roser Torra. Protocolo del Registro de Enfermedad de Fabry. GENFAB-2013-01. DIREGC07006. Genzyme Corporation.
- Lluís Guirado. Apolipoproteinas A-I y A-II como biomarcadores y dianas terapéuticas de recidivas post trasplante de glomeruloesclerosis segmentaria y focal idiopática (GESF) (Estudio GREAT). Cibbim / Servei de Nefrologia, Hospital Vall d'Hebron.
- Lluís Guirado. Registro europeo multicéntrico de cambio de tratamiento a Advagraf después del trasplante renal. Estudio posautorización (EPA) no intervencional (Estudio CHORUS). 506-MA-1002 (218415). Astellas Pharma Europe LTD.
- Elisabeth Ars Criach. Creación de un Consorcio de Biobanco de Patología Glomerular (Proyecto GLOSEN). Grupo de Patología Glomerular-S.E.N.
- Joan Manel Díaz. Mejora de la eficacia de la diálisis con la DPA-adaptada (Estudio PD-IDEA). PD-aAPD-01-INT. Fresenius Medical Care Deutschland GmbH.
- Roser Torra. Registro Español de pacientes con Poliquistosis Renal Autosómica Dominante (PQRAD). Sociedad Española de Nefrología (SEN)
- Patricia Fernández de la Llama. Estudio fase III, aleatorizado, doble ciego, controlado con placebo, de grupos paralelos, multicéntrico, dirigido por eventos, para evaluar la eficacia y seguridad de finerenona, asociada al tratamiento estándar, en la reducción de la morbilidad y mortalidad cardiovascular en pacientes con Diabetes Mellitus Tipo 2 y diagnóstico clínico de nefropatía diabética (Estudio FIGARO-DKD / 17530). EUDRACT: 2015-000950-39. Bayer Healthcare AG.
- Patricia Fernández de la Llama. Estudio fase III, aleatorizado, doble ciego, controlado con placebo, de grupos paralelos, multicéntrico, dirigido por eventos, para evaluar la eficacia y seguridad de finerenona, asociada al tratamiento estándar, en la progresión de la enfermedad renal en pacientes con Diabetes Mellitus Tipo 2 y diagnóstico clínico de nefropatía diabética (Estudio FIDELIO-DKD / 16244). EUDRACT: 2015-000990-11. Bayer Healthcare AG
- Jordi Bover. Estudio de fase 3, aleatorizado, de etiqueta abierta y controlado con principio activo para evaluar la eficacia y la seguridad de Vadadustat oral en el tratamiento de mantenimiento de la anemia en sujetos con enfermedad renal crónica no dependiente de diálisis (Non-dialysis-dependent chronic kidney disease, NDD-CKD) (PRO-2TECT-CONVERSION). EUDRACT: 2015-004774-14. Akebia Therapeutics, Inc.
- Jordi Bover. A phase 3 randomized, open-label (sponsor-blind), active-controlled, parallel-group, multi-center, event driven study in non-dialysis subjects with anemia associated with chronic kidney disease to evaluate the safety and efficacy of daprodustat compared to darbepoetin alfa (ASCEND-ND). EUDRACT: 2016-000542-65. GlaxoSmithKline Research & Development Limited.
- Joan Manel Díaz. A phase 3 randomized, open-label (sponsor-blind), active-controlled, parallel-group, multi-center, event driven study in dialysis subjects with anemia associated with chronic kidney disease to evaluate the safety and efficacy of daprodustat compared to recombinant human erythropoietin, following a switch from erythropoietin-stimulating agents (ASCEND-D)" EUDRACT: 2016-000541-31. GlaxoSmithKline Research & Development Limited.
- Lluís Guirado. Ensayo clínico de suspensión de la profilaxis con valganciclovir en trasplantados renales CMV-seropositivo que mantienen la inmunidad celular CD8+ CMV-especifica tras recibir timoglobulina (Estudio TIMOVAL). EUDRACT: 2015-004406-42. Fundación Investigación Biomédica Córdoba (IMIBIC).
- Lluís Guirado. Estudio de fase 3, multicéntrico, aleatorizado, abierto y con control activo para evaluar la eficacia y la seguridad del tratamiento con maribavir en comparación con el tratamiento asignado por el investigador en receptores de un trasplante con infecciones por citomegalovirus (CMV) que son refractarios o resistentes al tratamiento con ganciclovir, valganciclovir, foscarnet o cidofovir EUDRACT: 2015-004725-13. Shire Viropharma INC.
- Joan Manel Díaz. Seguimiento intensivo del estado nutricional de los pacientes incidentes en una unidad de hemodiálisis. Fundació Puigvert.
- Joan Manel Díaz. Búsqueda de marcadores biológicos para el diagnóstico/pronóstico, mediante Proteómica, en pacientes diagnosticados de Lupus Eritematoso Sistémico (LES), con afectación renal. Hospital Universitario de Basurto - Dra. N. Rivera.
- Lluís Guirado. Anestésicos volátiles como protectores en el trasplante renal-2 (VAPOR-2-Trial). EUDRACT: 2016-000992-26. Department of Anesthesiology – Universitaru Hospital Groningen, Holand.
- Joan Manel Díaz. Estudio de fase III randomizado, doble ciego y controlado con placebo para evaluar la seguridad y la eficacia de CCX168 (avacopán) en pacientes con vasculitis asociada a anticuerpos citoplásmicos antineutrofílicos (ANCA) tratados de forma concomitante con rituximab o ciclofosfamida/azatioprina. EUDRACT: 2016-001121-14. ChemoCentryx, Inc.
- Joan Manel Díaz. Estudio de 52 semanas aleatorizado, abierto (con el promotor enmascarado), con control activo, en grupos paralelos, multicéntrico para evaluar la seguridad y eficacia de Daprodustat en comparación con eritropoyetina recombinante humana en pacientes con anemia asociada a enfermedad renal crónica que inician diálisis

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- Roser Torra. Un ensayo de fase 2/3 sobre la eficacia y seguridad de la bardoxolona metilo en pacientes con síndrome de Alport (Estudio CARDINAL). EUDRACT: 2016-004395-22. Reata Pharmaceuticals Inc.
- Patricia Fernández de la Llama. Utilidad de la bioimpedancia en el manejo del paciente con HTA no controlada. Fundació Puigvert.
- Roser Torra. Estudio posautorización de seguridad multicéntrico y no intervencionista de 6 años de duración realizado en pacientes a los que se ha recetado JINARC® debido a poliquistosis renal autosómica dominante (Estudio PASS). OPE-TOL-2017-01 (156-12-299). Otsuka Pharmaceutical Europe Ltd.
- Roser Torra. Estudio no intervencionista y prospectivo que mide la calidad de vida, la preferencia de tratamiento y la satisfacción con el tratamiento de pacientes con poliquistosis renal autosómica dominante en Europa (Estudio ACQUIRE). OTS-MED-2017-01. Otsuka Pharmaceutical Europe LT.
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- Joan Manel Díaz. A Randomized, Double-blind, Placebo-controlled, Phase 3 Study of the Safety and Efficacy of OMS721 in Patients with Immunoglobulin A (IgA) Nephropathy (ARTEMIS - IGAN). EUDRACT: 2018-000075-33. Omeros Corporation.
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- Lluís Guirado. Impacto de los niveles de tacrólimus en la prevención del rechazo en pacientes de edad avanzada receptores de trasplante renal de novo: estudio observacional prospectivo en las condiciones de la práctica clínica habitual (Estudio BITACORA). CHI-TAC-2018-01. Chiesi España S.A.U.
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- Joan Manel Díaz. Estudio controlado con principio activo, aleatorizado, multicéntrico, doble ciego y paralelo de los efectos de esparsentán, un receptor dual de endotelina y un bloqueador del receptor de angiotensina, sobre los resultados renales en pacientes con glomeruloesclerosis segmentaria y focal (GESF) primaria. EUDRACT: 2016-005141-23. Retrophin INC.
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- Roser Torra. Multicenter, randomized, double-blind, placebo-controlled two stage study to characterize the efficacy, safety, tolerability and pharmacokinetics of GZ/SAR402671 in patients at risk of rapidly progressive Autosomal Dominant Polycystic Kidney Disease (ADPKD). EUDRACT: 2017-004084-12. Sanofi.
- Lluís Guirado. Oxihidróxido sucroférrico como quelante de fósforo en pacientes trasplantados renales con hiperfosfatemia. UTR-OXI-2018-01. Dr. Torregrosa, Kidney Transplant Unit, Nephrology Service, Hospital Clínic Barcelona.
- Lluís Guirado. Detection of Renal Allograft Rejection by NMR-based Urine Metabolomics (Study PARASOL). Numares AG.
- Joan Manel Díaz. Marcadores inflamatorios y profibróticos en las ANCA-vasculitis con afectación renal. Fundació Puigvert.
- Joan Manel Díaz. Estudio observacional y prospectivo de cohortes de pacientes con lupus eritrematoso sistémico (LES) de moderado a grave para determinar la actividad transversal y longitudinal de la enfermedad, las pautas y la eficacia del tratamiento, los resultados y las comorbilidades, la utilización de recursos sanitarios y el impacto del LES en la calidad de vida según la expresión génica del interferón de tipo I (Estudio SPOCS). AstraZeneca.
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- Joan Manel Díaz. Estudio de fase II, aleatorizado, doble ciego y controlado con placebo para evaluar la seguridad y la eficacia de BMS-986165 con tratamiento de base en pacientes con nefritis lúpica" EUDRACT: 2018-004142-42. Bristol-Myers Squibb Research and Development.
- Joan Manel Díaz. Estudio de fase 2, aleatorizado, doble ciego y controlado con placebo de cemdisirán en pacientes adultos con nefropatía por IgA. EUDRACT: 2018-02716-27. Alnylam Pharmaceuticals, Inc.
- Elisabet Coll. Estudio multicéntrico, abierto, prospectivo, aleatorizado para explorar la morbimortalidad en pacientes dializados con hemodiálisis extendida en comparación con la hemodiafiltración en línea: (Estudio MoTHER HDx). Senefro.
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- Joan Manel Díaz. A Randomized, Double-Blind, Placebo-Controlled Phase 2 Study to Evaluate the Safety and Efficacy of Avacopan (CCX168) in Patients with C3 Glomerulopathy. EUDRACT: 2017-001821-42. ChemoCentryx, Inc.
- Joan Manel Díaz. Estudio adaptativo de continuación, aleatorizado, doble ciego, controlado con placebo y de búsqueda de dosis para investigar la eficacia y seguridad de LNP023 en pacientes con nefropatía por IgA primaria. EUDRACT: 2017-000891-27. Novartis Farmaceutica SA.
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- Lluís Guirado. EPIGENEFRO: estudio de cambios epigenéticos en el paciente con enfermedad renal crónica avanzada. Fundació Puigvert / H. Manises.
- Roser Torra. Ensayo en fase 2, aleatorizado, doble ciego, controlado con placebo para evaluar la seguridad, eficacia, farmacodinámica y farmacocinética de SAR339375 administrado como inyección subcutánea semanalmente en pacientes con síndrome de Alport (Estudio HERA). EUDRACT: 2019-004394-10. Sanofi Genzyme.
- Lluís Guirado. Estudio funcional de la respuesta inmunológica adaptativa B y T específica frente al virus SARS-CoV-2 en pacientes inmunocompetentes e inmunosuprimidos que desarrollan la infección por SARS-CoV-2 (Estudio COV-IMMUNITY). Nephrology Service, Hospital de Bellvitge.
- Lluís Guirado. Impacto clínico de la reducción intencionada de la inmunosupresión en pacientes trasplantados de riñón con COVID-19. Nephrology Service, Hospital Universitario La Paz.
- Lluís Guirado. ¿Es la incompatibilidad en EPLETs un determinante en la exposición a tacrolimus? Fundació Puigvert.
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- María Jesús Lloret. Estudio de la resistencia ósea medida in vivo por microindentación por impacto en el primer año post-trasplante renal. Fundació Puigvert.
- Joan Manel Díaz. Análisis de la incidencia de enfermedades glomerulares primarias y secundarias diagnosticadas en las diferentes regiones sanitarias de Cataluña. Nephrology Service, Hospital Arnau de Vilanova.
- Lluís Guirado. ERA-EDTA COVID-19 KRT Database. ERA-EDTA COVID-19 KRT Database Working Group.
- Roser Torra. Estudio observacional retrospectivo para describir el fenotipo de mujeres con variantes genéticas asociadas a enfermedad de Fabry en España (Estudio MUJER FABRY). Amicus Therapeutics, S.L.U.
- María Jesús Lloret. Estudio de la resistencia ósea medida por microindentación en las alteraciones severas del metabolismo mineral en diálisis. Fundació Puigvert.
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- Jordi Bover. Estudio observacional, retrospectivo, descriptivo en pacientes que presentan hiperpotasemia y que han sido incluidos en un programa de acceso temprano con Patiromer. Nephrology Service, Hospital 12 de Octubre.
- Sílvia Gràcia. Consecuencias de la aplicación de criterios de filtrado glomerular ajustados por edad sobre la prevalencia de enfermedad renal crónica. Fundació Puigvert.

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

Grants Awarded in 2020

- Roser Torra Balcells. Use of artificial intelligence and systems biology for diagnosis and personalized risk assessment for inherited kidney diseases, focusing on alport syndrome. MARATO 202036-30. Fundació La Marató de TV3. Duration: 2021-2023. 90,000 €.

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

Awards

- Elisabet Ars. A Kidney Disease gene panel allows a comprehensive genetic diagnosis of cystic and glomerular inherited kidney diseases. Award for the best research in nephrology. 31 edition Premio Iñigo Álvarez de Toledo. February 2020.
- Roser Torra. Badge of honor of XII Conferencia Internacional Hipertensión y Riesgo Vascular asociado a la Enfermedad Renal for her scientific contributions. European Association of Urology (EAU). Madrid, 26-28 February 2020.
- Distinguished Fellow of the European Renal Association (ERA-EDTA). 8 June 2020.
- Cordoba Herrera C, Gelpi R, Bardaji B, Silva I, Serra N, Vila A, Quiroga A, Martorell J, Facundo C, Guirado L ¿Es la incompatibilidad en EPLETS un determinante en la exposición a tacrolimus? Award for the best oral communication in the congress of the Sociedad Española de Nefrología. November 2020.

Doctoral Theses

- Mónica Furlano. Avances clínicos y genéticos en enfermedades renales hereditarias autosómicas dominantes. Universitat Autònoma de Barcelona. Directors: Elisabet Ars and Roser Torra. Date of defense: 17/12/2020

Transfer Products

Guidelines / International Position - Consensus Papers

- Bover J. Guideline writing collaborator. KDIGO 2020 Clinical Practice Guideline for Diabetes Management in Chronic Kidney Disease (2020) Kidney International; 98, 4, S1-S116.
- Torra R (Coordinator); Torra R, Ars E, Furlano M. (Authors). Documento de consenso sobre la Poliquistosis renal autosómica dominante. https://www.senefro.org/modules.php?name=webstructure&id-webstructure=3

Scientific Production

Total Impact Factor: 174.162 · Mean Impact Factor: 5.805

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Diffusion Activities

Diffusion to Society

- Patient educational videos: L. Guirado (Director). Viure amb malaltia renal - VIII Edició de les Trobades per a Pacients Nefrològics. 14 October - 16 December 2020
  - 21 Oct: Causes i diagnòstic de la malaltia renal crònica-biòpsia renal. E. Coll
  - 28 Oct: Hipertensió arterial. P. Fernández-Llama
  - 2 Dec: Hemodiàlisi. Com és aquest tractament? E. Coll
  - 16 Dec: Trasplantament renal. Llista d'espera. C. Facundo
- Open doors for schools: Guirado L (Codirector of the program). Fundació Puigvert, together with the Hospital de Sant Pau, offers sessions is to raise awareness among young people about organ transplantation and to make them aware of the views of doctors and transplant recipients.
- In groups of up to 30 students, a part of the Hospital de Sant Pau is visited first, with a professional from that center. Later, they enter the Puigvert Foundation and go to the Library, where a nephrologist, with audiovisual support, talks to them about the transplant. Sometimes, a transplanted patient collaborates so that students can ask questions directly. In 2020 7 groups visited us.
- Radio programs: During 2020, 9 1-hour programs of scientific dissemination have been broadcast on Radio Estel, informing the audience of some kidney diseases and resolving doubts for listeners in: Pregnancy and MRC I; Pregnancy and MRC II; Transplantation I; Transplantation II; Dialysis and COVID I; Dialysis and COVID II; MRC and Patient Course; Rare kidney disease; Hereditary kidney disease. The program speakers were members of the Nephrology Group.

Scientific Diffusion

Courses organized by the Nephrology Group

- Ll. Guirado. Director. 27º Curso de Nefrología. Fundació Puigvert. 17-19 February 2020:
  - Nuevos horizontes en nefrología clínica
  - Curso de Fracaso renal agudo
- E. Ars, R. Torra (Directors). ¿Qué fundamentos necesito saber para manejarme en el mundo de las enfermedades renales hereditarias? Genética para nefrólogos. 2nd Edition. 17-18 November 2020.
- Ll. Guirado, A. Breda (Directors of the course). Formación en Trasplante Renal de Donante Vivo. XVII edición. 30 November - 3 December 2020.
- E. Ars, R. Torra (Directors). ¿Qué fundamentos necesito saber para manejarme en el mundo de las enfermedades renales hereditarias? Genética para nefrólogos. 3rd Edition. 15-16 December 2020.

Participation in Nephrology Congresses and Conferences

- E. Ars. Análisis genético en glomerulopatías (Presentation). II Curso Nacional de Glomerulonefritis Secundarias. Alcázar de San Juan (Ciudad Real), 24-25 January 2020.
- R. Torra. Síndrome de Alport (Presentation). II Curso Nacional de Glomerulonefritis Secundarias. Alcázar de San Juan (Ciudad Real), 24-25 January 2020.
- Fayos, L; Arana, C; Benito, S; Peña, S; Arranz, S; Díaz, JM; Guirado, Ll; Herreros, A. ¿Se deben incluir pacientes obesos en diálisis peritoneal? (Poster). XI Reunión Nacional Diálisis Peritoneal y Hemodiálisis Domiciliaria. Zamora, 30 January - 1 February 2020.
- M. Díaz (Session moderator). 1a sessió: Les malalties glomerulars en les infeccions. On som? Barcelona, 5 February 2020.
- J. Bover (Session moderator). Calcium, phosphate and MBD in Chronic kidney disease. XII Conferencia Internacional Hipertensión y Riñón. Madrid, 26-28 February 2020.
- R. Torra (Presentation). Tolvaptan in later-stage in autosomal dominant polycystic kidney disease. XII Conferencia Internacional Hipertensión y Riñón. Madrid, 26-28 February 2020.
- E. Ars (Presentation). Secuenciación masiva (NGS) en el diagnóstico de las nefropatías hereditarias. Utilidad e interpretación de los resultados. Jornadas de Genética y Enfermedad Renal. Sevilla, 5-6 March 2020.
- M. Furlano (Presentation). Estudio Genético en la Enfermedad de Alport. Jornadas de Genética y Enfermedad Renal. Sevilla, 5-6 March 2020.
- R. Torra (Presentation). Utilidad de la Consulta de Enfermedades Renales Hereditarias. Indicación de estudio genético en el paciente con Enfermedad Renal. Jornadas de Genética y Enfermedad Renal. Sevilla, 5-6 March 2020.
- E. Ars (Presentation). Secuenciación masiva (NGS) en el diagnóstico de las nefropatías hereditarias. Utilidad e interpretación de los resultados. Jornadas Genética en Enfermedad Renal. Sevilla, 5-6 March 2020.
- R. Torra (Presentation). Utilidad de la Consulta de Enfermedades Renales Hereditarias. Indicación de estudio genético en el paciente con Enfermedad Renal. Jornadas Genética en Enfermedad Renal. Sevilla, 5-6 March 2020.
- JM. Díaz (Presentation). Presentació del Registre de Malalts Renals de Catalunya. XXXVI Reunió Anual de la Societat Catalana de Nefrologia. Barcelona, 28-29 May 2020.
- Ll. Guirado (Session moderator). Trasplantament renal. On són els límits? XXXVI Reunió Anual de la Societat Catalana de Nefrologia. Barcelona, 28-29 May 2020.
- R. Torra (Presentation). Autosomal dominant tubulointerstitial kidney disease. 57th ERA-EDTA Congress. Online, 6-9 June 2020.
- Raggi, P, Bellasi A, Bushinsky D, Bover J, Rodríguez M, Ketteler M, Sinha S, Garg R, Padgett C, Perelló J, Gold A, Chertow G. SNF472 Consistently slows progression of coronary calcification in patients on hemodialysis: subgroup analysis of the calipso study. Oral communication. 57th ERA-EDTA Congress. Online, 6-9 June 2020.
- Goicoechea M, Gómez-Preciado F, Benito S, Torras J, Torra R, Huerta A, Restrepo A, Ugalde J, Astudillo D, Agraz I, López-Mendoza M, De Arriba G, Corchete E, Quiroga B, Martin-Conde ML, Gutierrez MJ, Lopes V, Ramos C, Mendez I, Cao M, Dominguez F, Ortiz A. Predictors of long-term outcome in a Spanish cohort of patients with fabry disease on enzyme replacement therapy. Poster. 57th ERA-EDTA Congress. Online, 6-9 June 2020.
- Guillén-Gómez E, Silva I, Galano, C, Arce Y, Caballero F, Guirado L, Díaz Encarnación, MM. Involvement of succinate dehydrogenase (SDH) in deceased renal transplant donors' infammation and fibrosis. Poster. 57th ERA-EDTA Congress. Online, 6-9 June 2020.
- R. Torra (Presentation). El Sdr de Alport Autosómico Dominante: la nefropatía hereditaria más infradiagnosticada. Webinar: III Reunión sobre Enfermedades Hereditarias Renales. Online, 30 June 2020.
- J. Bover (Session moderator). Calcificaciones vasculares y riesgo cardiovascular. 8th Simposium Update in Dialysis. Online, 17 September 2020.
- J. Bover (Presentation). ¿Está justificada la actual relajación en los valores de la hormona paratiroidea / parathormona (HTP) recomendados? ¿Puede resolverse el hiperparatiroidismo secundario en una partida de ajedrez? Online, 30 September 2020.
- Arana Aliaga, C, Arce Terroba, Y, Fayos de Arizon L, Sánchez Baya M, García-Cuerva Calvar S, Facundo Molas C, Lloreta J, Guirado Perich L, Serra Cabañas N. Trasplante renal y proteinuria: sorpresas te da la ultraestructura. Communication. XXVII Reunión Científica del Club de Nefropatología. XIII Reunión del Grupo de Enfermedades Glomerulares de la SEN (GLOSEN). Online, 8-9 October 2020.
- Chertow, GM, Raggi P,Bellasi A, Bushinsky DA, Bover J, Rodriguez M, Ketteler M, Sinha S, Garg R, Padgett CS, Perelló J, Gold A. SNF472 Consistently Slows Progression of Coronary Artery Calcification Across Subgroups of Patients on Hemodialysis. Oral communication. Kidney Week 2020. Online, 19-25 October 2020.
- Gunnarsson, J, Cianciolo G, Lauppe R, Csomor P, Kaiser E, Soro M, Bover J. Meta-Analysis of the Impacts of Supplementation with Nutritional Vitamin D on Mineral and Bone Markers in Non-Dialysis CKD. Poster. Kidney Week 2020. Online, 19-25 October 2020.

- M. Furlano (Presentation). Enfermedad Renal Poliquística. Nuevas Guías Españolas. XXII Congreso Colombiano e Internacional Extendido de Nefrología y Trasplante. Virtual Congress, 27 October - 14 December 2020.
- M. Furlano (Presentation). Enfermedad de Alport. XXII Congreso Colombiano e Internacional Extendido de Nefrología y Trasplante. Virtual Congress, 27 October - 14 December 2020.
- 50 Congreso de la Sociedad Española de Nefrología. Online, 6-9 November 2020.
  - J. Bover (Presentation). Controversias sobre el hiperparatiroidismo secundario y osteoporosis.
  - Ll. Guirado. Member of the selection committee for works on Kidney Transplant.
  - R. Torra (Presentation). Novedades terapéuticas en ERH.
  - R. Torra. Member of the selection committee for works on Genetics and Molecular Biology, Hereditary Renal Diseases.
- Oral communications
  - Sánchez-Baya M, Arana C, Fayos L, Berna F, Lloret MJ, Gelpi R, Vila Facundo C, Guirado L, Serra N. AKI en pacientes trasplantados renales con enfermedad por SARS-COV-2. Experiencia de un centro. Oral communication.
  - Portolés J, García-Cortés MJ, Pascual J, Díaz C, Graterol F, Díaz-Gómez JM, Serón D, Palacios ME, Gruss E, Cornago-Delgado JI. Dos estudios fase III aleatorizados y multicéntricos con ROXADUSTAT oral en pacientes con ERC y anemia en diálisis (PYRENEES) y no diálisis (ALPS).
  - Córdoba Herrera C, Gelpi R, Bardají B, Silva I, Serra N, Vila A, Quiroga A, Martorell J, Facundo C, Guirado L. ¿Es la incompatibilidad en EPLETS un determinante en la exposición a tacrolimus?
- e-posters:
  - Martínez Jiménez V, Furlano M, Valda De Miguel MT, Hernández González AN, López Jiménez I, Ortuño PP, Morales Caravaca F, López González V, Ars Criach, E, Torra Balcells R. Características clínicas de los pacientes diagnosticados de síndrome de ALPORT en el Hospital Virgen de la Arrixaca (Murcia).
  - Rodríguez E, Galcerán I, Hueso M, Codina S, Quero M, Lloret MJ, Coll-Brito V, Fayos-Arizon L, Ramos N, Pascual J. Patrones de insuficiencia renal aguda en pacientes con COVID-19.
  - Soler MJ, Ramos N, Almenara M, Lloret MJ, Labrador PJ, Davin E, Salgueira M. Mortalidad en pacientes con fracaso renal agudo e infección por COVID-19.
  - Coll-Brito V, Fayos-Arizón L, Coll E, Montolio D, Segarra A, Ochoa J, Guirado L, Betbesé AJ, Díaz JM, Lloret MJ. Fracaso renal agudo en el paciente crítico con COVID-19.
  - Lloret MJ, Canal C, Facundo C, Vila A, Serra N, Gelpi R, Di Gregorio S, Bardaji B, Guirado L, Bover J. Estudio piloto de la resistencia ósea medida in vivo por microindentación por impacto en el post-trasplante renal.
  - Sánchez-Baya M, Arana C, Fayos L, Coll-Brito V, Ochoa J, Gelpi R, Vila A, Facundo C, Guirado L, Serra N. Peculiaridades de la enfermedad por SARS-COV-2 en los pacientes trasplantados renales.
  - Sánchez-Baya M, Arana C, Fayos L, Pilco Teran, M, Quiroga A, Gelpi R, Vila A, Facundo C, Guirado L, Serra N. Modificación de la inmunosupresión en el paciente trasplantado renal con enfermedad por SARS-COV-2. ¿Cuál es la mejor estrategia?
- Posters:
  - Arana C, Sánchez-Baya M, Fayos L, Coll-Brito V, Ochoa J, Benito S, Martínez J, Martínez E, Díaz J, Coll E. Predictores de mortalidad por COVID 19 en pacientes en programa crónico de hemodiálisis.
  - Sánchez-Baya M, Arana C, Fayos L, Facundo C, Vila A, Alonso C, Gelpi R, Silva I, Guirado L, Serra N. Pielonefritis aguda post-trasplante renal: epidemiología e impacto en la función del injerto.
- R. Torra (Meeting presentation). Reunión grupo de trabajo de enfermedades renales hereditarias. Online, 12 November 2020.

AREA 5 · Uronephrology and Experimental Surgery

Women and Perinatal Health Research Group

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Peró Garcia, Marta (IR)
Polo Ramos, Ana María (FGS)
Porta Roda, Josep Oriol (FGS)
Rodríguez Sureda, Víctor (external entity)
Sánchez García, Olga (IR)
Trilla Solà, Cristina (FGS)
Ullmo, Johana (FGS)
Zanini Mangialardi, Maria Julia (external entity)

Main Lines of Research

- Prediction and prevention of complications arising from placental insufficiency, intrauterine growth restriction / preeclampsia (IUGR / PE).
- Placental insufficiency and maternal cardiovascular risk later in life.
- Development of predictive methods based on the integration of pre- and post-natal factors for the detection of abnormal neurodevelopment in congenital heart diseases.
- Toxics and air pollution effects on pregnancy and foetal programming.
- Management of pelvic floor dysfunction: chronic pelvic pain, urinary incontinence and pelvic organ prolapse.
- Maternal and foetal cardiovascular programming in assisted reproduction treatments (ART).
- Cardiovascular health and ART outcomes.
- COVID-19 and pregnancy.

Scientific Challenges

- To study novel placental biomarkers in the diagnosis and prognosis of preeclampsia (PE) and intrauterine growth restriction (IUGR) in order to generate future hypotheses for target prevention and therapeutic interventions for these disorders.
- To determine the usefulness of novel placental biomarkers (sFlt-1/PlGF ratio) in the diagnosis and prognosis of preeclampsia (PE) in order to modify policies and improve maternal and neonatal health.
- To study novel maternal cardiovascular risk biomarkers after placental insufficiency and to explore potential preventive strategies in order to identify mothers at risk for cardiovascular disease in later life.
- To develop biomarkers in foetal and neonatal life that help to predict postnatal neurological risk in congenital heart diseases.
- To evaluate the impact of maternal exposure to traffic-related air pollution on foetal development, in order to generate an evidence base to support the regulation and implementation of finely-targeted interventions and, in time, the inclusion of this impact in the next iteration of the global burden of diseases (GBD) attributable to ambient air pollution.
- To evaluate the impact of different interventions to improve: cardiovascular health in an infertile population prior to in-vitro fertilization (IVF), live birth rate, maternal and foetal cardiovascular programming and perinatal outcome.
- To evaluate the impact of SARS-Cov-2 infection on maternal health, placental function, and pregnancy and neonatal outcomes.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Active collaboration with the Gynaecology and Obstetrics Service: Obdulia Alejos, Laura Gomila, Anna Olivella, Juan Parra.
- Active collaboration with Puigvert Foundation: Carlos Dosouto, Susana Peón and M. Jesús Saiz.
- Molecular Pathology of Gynecologic Cancer: Dra. Bárbara García-Valdecasas.
- Genome Instability and DNA Repair Syndromes: Dr. Jordi Surrallés.
- Gynecologic and Peritoneal Oncology Group: Dra. M. Virtudes Céspedes.
- Anaesthesiology: Dra. M. Victoria Moral, Batalla González, Astrid María.
- General and Digestive Surgery: Dr. Antonio Moral.
- Endocrinology, Diabetes and Nutrition: Dr. Dídac Mauricio, Dra. Rosa Corcoy.
- Paediatrics: Dra. Susana Boronat, Gloria M. Fraga Rodríguez, Maria Josa Eritja, Elisenda Moliner Calderón.
- Clinical Epidemiology and Healthcare Services: Dr. Xavier Bonfill.
- Metabolic Bases of Cardiovascular Risk: Dr. Francisco Blanco, Dr. Jordi Ordóñez, Dra. Fina Mora, Dr. Álvaro García.
- Neuroradiology: Dra. Beatriz Gómez-Anson.

External Collaborations

International Collaborations

- Carmen Medina. PREDIGES. PATIA EUROPE, S.L. Duration: 2020-2022.
- Elisa Llurba (Collaborator). Role of Placental Insufficiency and Hypoxia in Congenital Heart Defects. Principal investigator: Steven A. Fisher, M.D.; Professor of Medicine and Physiology S-012a HSF II, 20 Penn St. Univ of Maryland School of Medicine (Baltimore MD 212).

Hypothesis: There is an inter-relationship between mother and fetus in the genesis of CHD. Main objective: To develop new models to address these questions using genetically engineered mice is highly innovative and certainly will lead to new insights into the relationships between hypoxia-dependent placental morphogenesis, placental function and effects on oxygen metabolism in the fetus.

- Elisa Llurba (Collaborator). Accuracy of clinical characteristics, biochemical and ultrasound markers in the prediction of preeclampsia: an Individual Patient Data (IPD) Meta-analysis. Principal Investigator: Shakila Thangaratinam, PhD; Professor in maternal and perinatal health at Queen Mary University of London, of Mile End Road, London, E1 4NS with administrative offices at QM Innovation Centre, 5 Walden Street, Whitechapel, (London E1 2EF) (the 'Recipient'). Main Objective: To develop, externally validate and update separate prediction models for (i) early (<34 weeks' gestation), (ii) late (<34 weeks) and (iii) any onset preeclampsia and to estimate the prognostic value of individual clinical, biochemical and ultrasound markers for predicting preeclampsia by IPD meta-analysis.

National Collaborations

- Maternal and Child Health and Development Research Network (SAMID Network). RD16/0022.
- Centro de Investigación Biomédica en RED en Enfermedades Raras (CIBERER). CB06/07/0027 (U719). PI: Dr. Eduard Gratacós.
- Centro de Medicina Maternofetal y Neonatal de Barcelona, Hospital Sant Joan de Déu – Hospital Clínic (BCNatal). Coordinator: Dra. M. Dolores Gómez-Roig.
- Barcelona Institute for Global Health (ISGlobal). Program "Air pollution and urban environment" (Dr. Payam Dadvant) and "Childhood and environment" (Dr. Jordi Sunyer).
- Barcelona Institute for Global Health (ISGlobal). Maternal, Child and Reproductive Health Initiative. Campus Clínic.
- Carmen Medina (collaborator). Registro epidemiológico de COVID-19 gestantes. Fundación Investigación Biomédica Hospital Puerta de Hierro. Start date: 30/04/2020.
- Olga Sánchez (collaborator). Indicadors genòmics per a la predicció de la recurrència i la metàstasi en càncer endometrial. Principal investigator: M. Virtudes Céspedes; Co-PI: M. José Macías. Funding: La Marató de TV3. Duration: 01/01/2020-31/12/2022.
- Cristina Trilla (collaborator). Cribado secuencial de preeclampsia mediante el uso de marcadores angiogénicos en el primer trimestre (PI19/00692). Principal Investigator: Daniel Oros. Funding: Instituto de Salud Carlos III. Duration: 01/01/2020-31/12/2022.
- Elisa Llurba, Carmen Garrido, Carla Domínguez, Antonio Fernández, Irene Ribera, Mª Julia Zanini, Víctor Rodríguez-Sureda and Olga Sánchez (Collaborators). Traffic-related air pollution and birth weight: the roles of noise, placental function, green space, physical activity, and socioeconomic status (FRONTIER). Principal Investigator: Dadvand, Payam; Assistant Research Professor, Barcelona Institute for Global Health (ISGlobal) (Former CREAL); Co-PI: Jordi Sunyer, Barcelona Institute for Global Health (ISGlobal). Main objective: In this study, the investigators will recruit pregnant women in Barcelona and assess the effects of in-utero exposure to traffic-related pollution on birth weight, fetal growth trajectories, and placental function for each pregnancy. The investigators will estimate exposure to several pollutants and transportation noise and evaluate the roles of socioeconomic status, green space, physical activity, diet, and stress. Funding: The Health Effects Institute (HEI), 17-1 Assessing Adverse Health Effects of Exposure to Traffic-Related Air Pollution, Noise, and Their Interactions With Socio-Economic Status. Duration: 01/05/2018 - 31/10/2022.
- Elisa Llurba, Carmen Garrido, Carla Domínguez, Antonio Fernández, Irene Ribera, Mª Julia Zanini, Víctor Rodríguez-Sureda and Olga Sánchez (Collaborators). Project: Pre-natal exposure to urban AIR pollution and pre- and post-Natal Brain development (AIR-NB). Principal Investigator: Jordi Sunyer, Barcelona Institute for Global Health (ISGlobal). Main objective: The overarching aim of AIR-NB is to evaluate the effect of pre-natal exposure to urban air pollution on pre- and post-natal brain development. The expected results will create an impulse to implement policy interventions that genuinely protect the health of urban citizens. Funding: European Research Council (ERC), Horizon 2020, ERC-2017-ADG. Duración: 01/01/2018-31/12/2022.
- Maternal and Infant Health and Development Network (SAMID Network).
- Elisa Llurba (Principal Investigator). RD16/0022/0015. Objective: The main objective is to study the different pathological processes, nutritional and environmental conditions of perinatal and postnatal period, by addressing the study of factors of prematurity, prevention and patient safety, environmental and pathogenetic factors, nutrition and child development as well as promoting research into new products and therapeutic procedures. It is also their aim to study the long-term consequences and its relationship with certain disorders of high prevalence in later stages of life, such as neuropsychiatric diseases, obesity and its complications. Collaborators: Carla Domínguez, Antonio Fernández, Irene Ribera, Mª Julia Zanini, Olga Sánchez, Ana Polo.
- Elisa Llurba (Collaborator). The Banc de Sang i Teixits (Blood and Tissue Bank) is a public agency of the Catalan Department of Health whose mission is to guarantee the supply and proper use of human blood and tissue in Catalonia.
- Elisa Llurba (PI). Clinical Trial. NCT03536000. Fetal Cardiac Function Evaluation With aCMQ-Strain Fetal (STRAIN). Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau (IIBSP-CMQ-2017-99). Duration: 2018-2020.
- Elisa Llurba (PI). Clinical Trial. NCT04163744. Effectiveness and Safety of Induction of Labour Using a Double Balloon Catheter (INDOBA). Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau (IIBSP-CRB_2019-70). Duration: 2019-2021.
- Eduard Gratacós (PI). Elisa Llurba (collaborator). Clinical Trial. NCT04766866. sFlt1/PlGF and Selective Labor Induction to Prevent Preeclampsia at Term (PE37). Fundació Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau (IIBSP-FIP-2019-37). Duration: 2020-2023.
- With industry:
  - Cook
  - Roche
  - Pfizer

Active Grants

- Elisa Llurba Olivé. Incorporación del ratio sFlt1/PlGF en el diagnóstico y clasificación de preeclampsia: Ensayo clínico randomizado (EuroPE estudio). PI16/00375. Instituto de Salud Carlos III. Duration: 2017-2021. 92,500 €.
- Josep Oriol Porta Roda. Estudio de las propiedades biológicas de una matriz dérmica de origen humano para su aplicación en cirugía de corrección del prolapso de órganos pélvicos e incontinencia urinaria femenina. CONVENI BST 2017-3. Banc de Sang i Teixits. Duration: 2017-2021. 136,904 €.
- Elisa Llurba Olivé. Women and Perinatal Health Research Group. 2017 SGR 1267. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021. 10,000 €.
- Elisa Llurba Olivé. Red de salud materno-infantil y del desarrollo. RD16/0022/0015. Instituto de Salud Carlos III. Duration: 2017-2021. 178,530 €.
- Elisa Llurba Olivé. Remodelado y disfunción cardíaca en pacientes con preeclampsia regulado por el ambiente anti-angiogénico: estudio clínico y experimental. PI19/00702. Instituto de Salud Carlos III. Duration: 2020-2022. 121,000 €.

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

Grants Awarded in 2020

- Monica Cristina Cruz Lemini. Impacto del Ejercicio y la Dieta Mediterránea vs Aspirina en la tasa de nacimientos vivos y programación cardiovascular en la Fertilización In Vitro: un Estudio Aleatorizado. PI20/01504. Instituto de Salud Carlos III. Duration: 2021-2023. 152,000 €.

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

Awards

- Carmen Garrido-Giménez. Young investigator award winner. Obstetrics: C. Garrido-Giménez, M. Mendoza, M. Cruz-Lemini, L. Galian-Gay, O. Sánchez, J. Alijotas-Reig, E. Llurba. Angiogenic factors and long-term cardiovascular risk in women that developed pre-eclampsia during pregnancy. OC17.01. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 1-55. https://doi.org/10.1002/uog.22321. https://www.isuog.org/about-us/awards/scientific-awards/2020-congress-awards.html

Doctoral Theses

- Sandra Martínez González. Metabolomic analysis of oxidative stress and inflammation biomarkers during chemotherapy treatment in pregnant women with breast cancer and their offspring. Universitat Autònoma de Barcelona. Duration: Elisa Llurba Olivé. Date of defense: 1/12/2020.

Scientific Production

Total Impact Factor: 176.623 · Mean Impact Factor: 10.390

Blanch Fons L., Estadella Tarriel J., Simo Gonzalez M., Rams Llop N., Longo A., Porta Roda O., Use of an Intrauterine Foley Probe for Ultrasound-Assisted Hysteroscopic Resection of Complete Uterine Septum (2020) J MINIM INVAS GYN, 27 (3), 581-. **IF: 3.1070**

Boll L.M., Khamirchi R., Alonso L., Llurba E., Pozo O.J., Miri M., Dadvand P., Prenatal greenspace exposure and cord blood cortisol levels: A cross-sectional study in a middle-income country (2020) ENVIRON INT, 144, -. **IF: 7.5770**

Crovetto F, Crispi F, Llurba E, Figueras F, Gómez-Roig MD, Gratacós E. Seroprevalence and presentation of SARS-CoV-2 in pregnancy. Lancet. 2020 Aug 6:S0140-6736(20)31714-1. PMID: 32771084. **IF: 60.392**

Garcia-Manau P, Mendoza M, Bonacina E, Garrido-Gimenez C, Fernandez-Oliva A, Zanini J, Catalan M, Tur H, Serrano B, Carreras E. Soluble fms-like tyrosine kinase to placental growth factor ratio in different stages of early-onset fetal growth restriction and small for gestational age. Acta Obstet Gynecol Scand. 2020 Aug 29. PMID: 32860218. **IF: 2.770**

Garrido-Gimenez C., Mendoza M., Cruz-Lemini M., Galian-Gay L., Sanchez-Garcia O., Granato C., Rodriguez-Sureda V., Rodriguez-Palomares J., Carreras-Moratonas E., Cabero-Roura L., Llurba E., Alijotas-Reig J., Angiogenic Factors and Long-Term Cardiovascular Risk in Women That Developed Preeclampsia during Pregnancy (2020) HYPERTENSION, 1808-1816. **IF: 7.7130**

Gracia-Perez-Bonfils A, Martinez-Perez O, Llurba E, Chandraharan E. Fetal heart rate changes on the cardiotocograph trace secondary to maternal COVID-19 infection. Eur J Obstet Gynecol Reprod Biol. 2020 Jul 2;252:286-293. PMID: 32645644. **IF: 1.868**

González R, García-Otero L, Pons-Duran C, Marbán-Castro E, Goncé A, Llurba E, Del Mar Gil M, Rodríguez-Zambrano MÁ, Chen H, Ramírez M, Bardají A, Menendez C. Hydroxychloroquine efficacy and safety in preventing SARS-CoV-2 infection and COVID-19 disease severity during pregnancy (COVID-Preg): a structured summary of a study protocol for a randomised placebo controlled trial. Version 2. Trials. 2020 Jul 2;21(1):607. PMID: 32616063. **IF: 1.975**

Llurba E, Bella M, Burgos J, Mazarico E, Gómez-Roig MD, De Diego R, Martínez-Astorquiza T, Alijotas-Reig J, Sánchez-Durán MÁ, Sánchez O, Carreras E, Cabero L. Early Prophylactic Enoxaparin for the Prevention of Preeclampsia and Intrauterine Growth Restriction: A Randomized Trial. Fetal Diagn Ther. 2020;47(11):824-833. PMID: 33472201. **IF: 2.095**

Luzarraga Aznar A, Delgado-Morell A, Rovira Negre R, Fernandez-Oliva A, Llurba Olive E. Ovarian cancer as an imitator of severe pre-eclampsia: role of angiogenic factors. Ultrasound Obstet Gynecol. 2020 Dec 11. doi: 10.1002/uog.23569. Online ahead of print. PMID: 33314427. **IF: 5.571**

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Other Publications

- Medina, M. Carmen (collaborator). Registro Español de Cribado de COVID-19 en Gestantes Asintomáticas. Rev Esp Salud Pública. 2020; Vol. 94: 18 September e1-24. COV20/00020 - Convocatoria "SARS-COV-2 y la enfermedad COVID-19. Instituto de Salud Carlos III and FEDER.
- Crovetto, Francesca; Crispi, Fatima; Llurba, Elisa; Figueras, Francesc; Gomez-Roig, Maria Dolores; Gratacos, Eduard. Seroprevalence and clinical spectrum of SARS-COV-2 infection in the first versus third trimester of pregnancy. doi: https://doi.org/10.1101/2020.06.17.20134098. Preprint. https://www.medrxiv.org/content/10.1101/2020.06.17.20134098v1
- Figueras, Francesc; Llurba, Elisa; Martínez Portilla, Raigam Jafet; Mora, Josefina; Crispi, Fátima; Gratacós, Eduard. COVID-19 causing HELLP-like syndrome in pregnancy and role of angiogenic factors for differential diagnosis. July 2020. DOI: 10.1101/2020.07.10.20133801. Preprint. These data were presented in a Virtual Symposium on COVID-19 and Pregnancy on 17 April: 2020: http://medicinafetalbarcelona.org/simposiocovid19/
- Espinós, Juan J; Solà, Ivan; Valli, Claudia; Polo, Ana; Ziolkowska, Lucja; Martínez-Zapata, M José. The Effect of Lifestyle Intervention on Pregnancy and Birth Outcomes on Obese Infertile Women: A Systematic Review and Meta-Analysis. Int J Fertil Steril. Apr 2020, 14 (1), 1-9.
- Ullmo, J; Lemini, M Cruz; Ramos, A; Garrido, C; Llurba Olivé, E. Protocol d'atenció Sars-CoV2 a la pacient obstètrica. Protocol (online) 02/12/2020.
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Books or Chapters with ISBN

- Llurba E., De Paco K. Guías de asistencia práctica de la gestación: trastornos hipertensivos de la gestación. Sociedad Española de Ginecología y Obstetricia. ISBN: 978-84-617-7587-3.

Diffusion Activities

Dissemination Activities to Society

- https://inatal.org/charla-covid19.html
- https://inatal.org/noticias/noticias-cientificas/607-auladona-un-nuevo-canal-de-cursos-online-para-la-salud-femenina.html
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- https://inatal.org/el-embarazo/consultas/viajes/602-viajar-en-avion-durante-el-embarazo-es-seguro.html
- https://inatal.org/noticias/podcasts/601-entrevista-doctora-elisa-llurba.html
- https://inatal.org/noticias/el-articulo-del-especialista/597-coronavirus-y-lactancia-materna-son-compatibles.html
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- https://inatal.org/noticias/reportajes/529-predecir-la-preeclampsia-un-avance-que-reduce-la-mortalidad-materna.html
- https://inatal.org/noticias/el-articulo-del-especialista/606-screening-de-preeclampsia-en-primer-trimestre.html
- Dra. Elisa Llurba. Primera Jornada online Parto respetado y violencia reproductiva. 16/10/2020.

Scientific Dissemination

National Congresses

- Carmen Medina. Diabetes gestacional: población de riesgo, complicaciones embrionarias, parto o cesárea y puerperio. Asociación de Ginecólogos y Obstetras de Castellón. Castellón, Spain. 27 November 2020.

International Congresses

- Marta Bailón Queiruga; Carmen Medina Mallén; Carmen Garrido Giménez; Anna Mundó Fornell; Elisa Llurba Olive. Induction of labor using double balloon catheter (CRB-Cook) versus prostaglandins (misoprostol and dinoprostone). Poster. BIRTH Clinical Challenges in Labor and Delivery 2020, 6th edition. Valencian Community, Spain, 10-17/10/2020.
- Marta Bailón Queiruga; Carmen Medina Mallén; Carmen Garrido Giménez; Anna Mundó Fornell; Elisa Llurba Olive. Safety of the double balloon catheter (CRB-Cook®) for cervical ripening in outpatient care and evaluation of patient's satisfaction. Poster. BIRTH Clinical Challenges in Labor and Delivery 2020, 6th edition. Valencian Community, Spain, 10-17/10/2020.
- Mónica Cruz-Lemini. Ecocardiográfica fetal para el obstetra. Oral communication. Congreso virtual y XLVII Congreso de Ginecología y Obstetricia de Guatemala. 5 November 2020.
- ISUOG Virtual World Congress on Ultrasound in Obstetrics and Gynecology. 16-18 October 2020.
- C. Domínguez Gallardo, N. García, M. Cruz-Lemini, A. Fernández-Oliva, C. Trilla, C. Medina, I. Ribera, J. Parra, E. Llurba. Fetal cardiac function evaluation with fetal a CMQ-strain: feasibility and reproducibility. VP15.16. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57-378. https://doi.org/10.1002/uog.22560
- C. Trilla, C. Medina, J. Parra, J. Espinós, E. Llurba. Inter- and intraobserver agreement in first trimester ultrasound evaluation of placental biometry. VP51.06. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57–378. https://doi.org/10.1002/uog.23213
- C. Garrido-Giménez, M. Mendoza, M. Cruz-Lemini, L. Galian-Gay, O. Sánchez, J. Alijotas-Reig, E. Llurba. Angiogenic factors and long-term cardiovascular risk in women that developed pre-eclampsia during pregnancy. OC17.01. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 1-55. https://doi.org/10.1002/uog.22321.
- F. Crovetto, F. Crispi, R. Pascal, M. Larroya Sola, M. Cantallops, M. Camacho, I. Casas, M. Tortajada, A. Cahuana, M. Valdes-Bango Curell, D. Boada, I. Mercade, E. Casals, M. Cruz-Lemini, M. López, A. Arranz, F. Figueras, M. Collado, E. Llurba, M. Gómez-Roig. VP45.16. COVID-19 in pregnancy: seroprevalence, clinical spectrum, impact on pregnancy outcomes and influence of microbiota in clinical severity – a population-based study in Spain. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57-–378. https://doi.org/10.1002/uog.23047

- A.M. Hawkins-Villarreal, A. Goncé, M. Valdes-Bango Curell, L. Ribera, L. Guirado, M. Cruz-Lemini, C. Paules, E. Antolin, F. Crovetto, K. Castillo, M. Salvia, E. Eixarch, F. Crispi, F. Figueras, E. Gratacós, M. López. VP45.23. Fetal sonographic follow-up after maternal COVID-19 infection: is there a matter of concern? Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57–378. https://doi.org/10.1002/uog.23054
- R. Villalobos-Gómez, M. Cruz-Lemini, J. Luna-García, I. Juárez-Martínez, R. Cruz-Martinez. VP17.09. Heterotaxy syndromes: first fetal case series in Mexico. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57–378. https://doi.org/10.1002/uog.22596.
- M. Rial Crestelo, M. Lubusky, L. Krofta, A. Kajdy, E. Ferriols, M. Parra-Cordero, E. Zohav, M. Cruz-Lemini, F. Figueras. Impact of maternal physiological characteristics on UA and MCA fetal Doppler near term within a randomised controlled trial. VP37.10. Ultrasound in Obstetrics & Gynecology 2020; 56 (Suppl. 1): 57-378. https://doi.org/10.1002/uog.22907

Meetings/Seminars

- Elisa Llurba (speaker). Preeclampsia like-syndrome in Sars-Cov2 pregnant women: diferencial diagnosis. Scientific Retreat 2020. Zambón and Sanofi Genzyme. Institut de Recerca de Sant Pau (17/12/2020).
- Carmen Medina (speaker). Master Class Balón de Cook. Hospital de la Santa Creu i Sant Pau, Barcelona, 27/07/2020-28/07/2020.
- Carmen Medina (invited talk). Actualitzacions en obstetrícia i ginecologia. Protocol del maneig de l'anèmia a ginecologia i obstetrícia. Paper del ferro Carboximaltosa. Hospital de la Santa Creu i Sant Pau, Barcelona, 01/10/2019-10/06/2020.
- Mónica Cruz-Lemini (invited talk). ABC de la valoración ecocardiográfica fetal básica para el obstetra. 1º Curso Internacional Virtual de la Región VI. México, 9/07/2020.
- Mónica Cruz-Lemini (invited talk). Diagnóstico de cardiopatías fetales en embarazadas diabéticas. Taller de diagnóstico prenatal. Puebla, México, 3/06/2020.

Teaching Activity

- Carmen Medina. L'aprenentatge actiu. Com aplicar-ho a la universitat? Universitat Autònoma de Barcelona, 9/12/2020.
- Carmen Medina. Atención integral a la gestante con preeclampsia grave (módulo I, II y III). Hospital de la Santa Creu i Sant Pau, Barcelona, 23/11/2020-25/11/2020.
- Carmen Medina. Diabetes pregestacional. Actualización del protocolo. Actualitzacions en obstetrícia i ginecologia. Hospital de la Santa Creu i Sant Pau, Barcelona, 29/9/2020-9/6/2021.
- Carmen Medina (teacher). Treu-li tot el suc al campus virtual UAB. Universitat Autònoma de Barcelona, 22/05/2020.
- Cristina Trilla (teacher). Curso de cribado en diagnóstico prenatal. Hospital de la Santa Creu i Sant Pau, Barcelona, 11/03/2020-12/03/2020.

AREA 5 · Uronephrology and Experimental Surgery

Gynecologic and Peritoneal Oncology Group

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Members
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Martín Lorente, Cristina (FGS)
Rovira Negre, Ramon (FGS)
Soler Moreno, Cristina (FGS)
Teixeira, Natalia (FGS)

Main Lines of Research

- Identify new prognostic biomarkers and new therapeutic targets for risk and therapeutic stratification in endometrial cancer patients.
- Study the effects on the nervous system of tumour progression and metastasis in gynaecological and peritoneal cancers.
- Modelling gynaecological and peritoneal cancers in animals to better understand tumour physiopathology and the use for preclinical drug evaluation.
- Development of new antitumour drugs, using nanotechnology, in cell lines and animal models for targeted delivery to cancer stem cells (in collaboration with the Oncogenesis and Antitumour Drugs group).

Scientific Challenges

- Promote clinical and translational research into gynaecological cancers with a very large database and study relevant clinical issues.
- Obtain funding from FIS, regional authorities and private companies.
- Enhance cooperation with other clinical and research groups both in Sant Pau and extra-hospital, and attract predoctoral and postdoctoral fellows.
- Develop molecular markers for therapeutic decision-making in endometrial cancer patients.
- Identification and validation of novel therapeutic targets related to neuromodulation in tumour progression of gynaecological cancers.
- Achieve antitumor and antimetastatic effects by targeting drugs at cancer stem cells in gynaecological and peritoneal cancers.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Oncogenesis and Antitumour Drug group (Dr. Ramon Mangues)
- Oncological Hematology and Transplantation Department (Dr. Joan Carles Souto)
- Hepatobiliopancreatic Surgery Unit (Dr. Santiago Sánchez)
- Endocrinology, Diabetes and Nutrition Group (Dr. Eugenia Mato)
- Anatomy and Pathology Department (Dr. Enrique Lerma and Dr. Alberto Gallardo)
- Clinic Oncology Department (Dr. López Pousa) RETOS Project. RTC-2017-6347-1
- Pharmacy Department (Dr. María Gámez)
- Radio-Oncology Department (Dr. Josep Balart)
- Women and Perinatal Health, Obstetric and Gynecological Department (Dr. Elisa Llurba)
- R. Rovira, P. Español and C. Soler have participated in the project "Evaluación de biomarcadores angiogénicos séricos y en tejido en endometriosis ovárica, peritoneal y profunda" (PI: E Llurba); Institut de Recerca de l'Hospital Sant Pau and Fundació Institut de Recerca de l'Hospital Vall d'Hebron. Duration: 2015-2020.
- Obstetric and Gynecological Department (Dr. Misericordia Guinot Gasull)
- R. Rovira, P. Español and C. Soler have participated in the project Protocol IIBSP health – IOP – 2012-109: Multicentric observational epidemiological study in patients with Premature Ovarian Insufficiency. PI: Misericordia Guinot Gasull. Duration: 2017-2019.

External Collaborations

National Collaborations

- Maria Macias. Biomedical Research Institute (IRB), Barcelona.
- José Luis Corchero. CIBERBBN and Institut de Biotecnologia i de Biomedicina, Universitat Autònoma de Barcelona.
- Antoni Benito. Laboratori d'Enginyeria, Departament de Biologia, Universitat de Girona, Spain.
- Antonio Villaverde. Institut de Biotecnologia i de Biomedicina, Universitat Autònoma de Barcelona.
- Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Instituto de Salud Carlos III, Madrid.
- Universitat Autònoma de Barcelona and Universitat de Barcelona. Departament de Contractació i Convenis, Barcelona.

- Grupo GEICO, R. Rovira. Grupo Español de Investigación en Cáncer de Ovario, Madrid.
- Ramón Eritja, Institute for Advanced Chemistry of Catalonia (IQAC), Spanish Council for Scientific Research (CSIC), Barcelona.
- Xavier Matias-Guiu, Hospital de Bellvitge, Barcelona.
- María Jesús Delgado, Faculty of Biology, Universidad Complutense, Madrid.

International Collaborations

- Luis Ulloa. New Jersey Medical School, Rutgers University, Newark, New Jersey (USA).
- Julie Pannequin. SIRIC Montpellier Cancer Institut, Montpellier, France.
- Paolo Micheli. Institute for Cancer Research and Treatment, Candiolo, Turin (Italy).
- Arne Östman. Cancer Center Karolinska, Karolinska Institutet, Stockholm (Sweden).
- ATMP-EATRIS, European Union. Member of the Working Group on Advanced therapies and biologicals of ATMP (Advanced Therapy Medicinal Products), EATRIS (European Infrastructure for Translational Medicine) Network.
- ETP Nanomedicine, European Union, Member of the European Technology Platform on Nanomedicine.
- TME-AACR member. Member of the Tumor Microenvironment Working Group, American Association for Cancer Research (AACR).

Active Grants

- María Virtudes Céspedes Navarro. Terapia dirigida para la eliminación selectiva de células madre metastáticas CXCR4+ en cáncer de endometrio. FMM 2017. Fundación Mutua Madrileña. Duration: 2017-2020. 133,333.33 €.
- María Virtudes Céspedes Navarro. Nanoterapia dirigida y radioterapia SBRT combinada para la eliminación selectiva de células madre tumorales en cáncer de páncreas. PI17/00150. Instituto de Salud Carlos III. Duration: 2018-2021. 123,000 €.
- María Virtudes Céspedes Navarro. Genomic signatures for the prediction of recurrence and metastasis in Endometrial Cancers. MARATO 201911-30. Fundació La Marató de TV3. Duration: 2020-2023. 152,000 €.
- María Virtudes Céspedes Navarro. Contratos Miguel Servet I 2015. MS15/00163. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500 €.
- María Virtudes Céspedes Navarro. Preclinical trial to assess safety, tolerability, and efficacy of CEB-01 membrane in mouse cancer models. CEBIOTEX S.L participating institutions: IIB Sant Pau. Duration: 2018-2020.

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

Grants Awarded in 2020

- María Virtudes Céspedes Navarro. Nanoterapia innovadora para cánceres peritoneales metastásicos: activando neuroreceptores para matar células madre tumorales. PI20/00623. Instituto de Salud Carlos III. Duration: 2021-2023. 143,000 €.
- María Virtudes Céspedes Navarro. Contratoes Miguel Servet II 2020. CPII20/00007. Instituto de Salud Carlos III. Duration: 2021-2024. 101,250 €.

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

Doctoral Theses

- Rita Sala Faig. Direccionament de fàrmacs per a l'eliminació selectiva de cèl·lules canceroses CXCR4+ en models de càncer colorrectal metastàtic. Universitat Autònoma de Barcelona Ramón Mangues and María Virtudes Céspedes, 21/12/2020

Patents

- Alicia Casals, Albert Hernansanz, Ramón Rovira, Joan Basomba,Roger Comas. Device for simulating and endoscopic operation via natural orifice. WO2017098036A1 WIPO (PCT). Utility patent. 15/06/2017.
- Antonio Villaverde, Esther Vázquez, Neus Ferrer, Ramón Mangues, María Virtudes Céspedes, Ugutz Unzueta, Isolda Casanova. Methods and reagents for efficient and targeted delivery of therapeutic molecules to CXCR4 cells. EPO11382005.41216. Utility patent. 03/03/2011.
- Antonio Villaverde. Esther Vázquez, Neus Ferrer, Ramón Mangues, María Virtudes Céspedes, Ugutz Unzueta, Isolda Casanova. Therapeutic nanoconjugates and uses thereof. PCT/EP2018/069303. Utility patent. 16/07/2018.
- Antonio Villaverde, Esther Vázquez, Neus Ferrer, Ramón Mangues, María Virtudes Céspedes, Ugutz Unzueta, Isolda Casanova, Naroa Serna, Laura Sánchez-García. Nanostructured proteins and uses thereof. WO2018202921A2 WIPO(PCT). Utility patent. 08/11/2018.
- Alicia Casals, Albert Hernansanz, Ramón Rovira. Procedure and device for learning and training operations of laparoscopic surgery and similar interventions. ES2534140B1. Utility patent. 15/06/2017.

Transfer Products

Spin off

- Ramon Rovira. C-66663303 Surgitrainer S.L. Start-up. 15/03/2016. Method and device for learning and training operations laparoscopic surgery and similar procedures. Active

Technology Transfer agreements

- 2016 2016-101 Transference Surgitrainer and Hystrainer Licence/ Transference Agreement Surgitrainer SL. 13/9/2016

Scientific Production

Total Impact Factor: 71.131 · Mean Impact Factor: 6.466

Álamo P, Pallarès V, Céspedes MV, Falgàs A, Sanchez JM, Serna N, Sánchez-García L, Voltà-Duràn E, Morris GA, Sánchez-Chardi A, Casanova I, Mangues R, Vazquez E, Villaverde A, Unzueta U. Fluorescent Dye Labeling Changes the Biodistribution of Tumor-Targeted Nanoparticles. PHARMACEUTICS. 2020 Oct 22;12(11):1004. doi: 10.3390/pharmaceutics12111004. **IF: 6.734**

Diaz-Feijoo B., Torne A., Tejerizo A., Benito V., Hernandez A., Ruiz R., Domingo S., Luna-Guibourg R., Llueca A., Coronado P., Gilabert-Estelles J., Bebia V., Gil-Ibanez B., Gil-Moreno A., Gil-Moreno A., Perez-Regadera J.F., Lumbrano A., Hernandez A., Gonzalez C., Domingo S., Lago V., Ruiz R., Cobos P., Sebastian D.-S., Rovira R., Chipiriliu D., Piquer L., Coronado P., Gracia M., Prognostic Value and Therapeutic Implication of Laparoscopic Extraperitoneal Paraaortic Staging in Locally Advanced Cervical Cancer: A Spanish Multicenter Study (2020) ANN SURG ONCOL, 27 (8), 2829-2839. **IF: 4.0610**

Ballester Vazquez E., Perez Garcia J.I., Lopez Mora D.A., Galan Martinez C., Pareja Nieto E., Clos Enrriquez M., Gonzalez Lopez J.A., Moral Duarte A., Identification of Occult Adenomas in Primary Hyperparathyroidism With 18F-fluorocholine PET/CT Identificación de adenomas ocultos en hiperparatiroidismo primario con PET-TC 18F-fluorocolina (2020) CIR ESPAN, 98 (7), 395-402. **IF: 1.3230**

Cespedes M.V., Cano-Garrido O., Alamo P., Sala R., Gallardo A., Serna N., Falgas A., Volta-Duran E., Casanova I., Sanchez-Chardi A., Lopez-Laguna H., Sanchez-Garcia L., Sanchez J.M., Unzueta U., Vazquez E., Mangues R., Villaverde A., Engineering Secretory Amyloids for Remote and Highly Selective Destruction of Metastatic Foci (2020) ADV MATER, 32 (7), -. **IF: 27.3980**

De Cuypere M., Lovinfosse P., Goffin F., Gennigens C., Rovira R., Duch J., Fastrez M., Gebhart G., Squifflet J.L., Luyckx M., Charaf G., Crener K., Buxant F., Bucella D., Jouret M., Hustinx R., Kridelka F., Added value of para-aortic surgical staging compared to 18F-FDG PET/CT on the external beam radiation field for patients with locally advanced cervical cancer: An ONCO-GF study (2020) EJSO-EUR J SURG ONC, 46 (5), 883-887. **IF: 3.9590**

De Cuypere M., Lovinfosse P., Gennigens C., Hermesse J., Rovira R., Duch J., Goffin F., Hustinx R., Kridelka F., Tumor total lesion glycolysis and number of positive pelvic lymph nodes on pretreatment positron emission tomography/computed tomography (PET/CT) predict survival in patients with locally advanced cervical cancer (2020) INT J GYNECOL CANCER, 30 (11), 1705-1712. **IF: 2.0950**

Diaz-Feijoo B., Franco S., Torne A., Benito V., Hernandez A., Lago V., Rovira R., Acosta U., Agusti N., Gil-Moreno A., Gil-Ibanez B., Bebia V., Tejerizo A., Perez-Regadera J.F., Lubrano A., Gonzalez C., Domingo S., Ruiz R., Cobos P., Luna-Guibourg R., Gilabert-Estelles J., Chipiriliu D., Llueca A., Piquer L., Coronado P., Gracia M., Implications of extraperitoneal paraaortic lymphadenectomy to the left renal vein in locally advanced cervical cancer. A Spanish multicenter study (2020) GYNECOL ONCOL, 158 (2), 287-293. **IF: 4.6230**

Falgas A., Pallares V., Unzueta U., Cespedes M.V., Arroyo-Solera I., Moreno M.J., Gallardo A., Mangues M.A., Sierra J., Villaverde A., Vazquez E., Mangues R., Casanova I., A CXCR4-targeted nanocarrier achieves highly selective tumor uptake in diffuse large B-cell lymphoma mouse models (2020) HAEMATOLOGICA, 105 (3), 741-753. **IF: 7.1160**

Kurilova I., Pompa V., Guerrero R., Tapias M.A., Calatayud M.D., Fondevila C., Gonzalez J.A., Duch J., Gomez F.M., 90Y-Radioembolization After Failed Portal Vein Embolization for Colorectal Liver Metastases: A Case Report (2020) CARDIOVASC INTER RAD, 43 (8), 1232-1236. **IF: 2.0340**

Serna N., Alamo P., Ramesh P., Vinokurova D., Sanchez-Garcia L., Unzueta U., Gallardo A., Cespedes M.V., Vazquez E., Villaverde A., Mangues R., Medema J.P., Nanostructured toxins for the selective destruction of drug-resistant human CXCR4+ colorectal cancer stem cells (2020) J CONTROL RELEASE, 320, 96-104. **IF: 7.7270**

Zapardiel I., Alvarez J., Barahona M., Barri P., Boldo A., Bresco P., Gasca I., Jaunarena I., Kucukmetin A., Mancebo G., Otero B., Roldan F., Rovira R., Suarez E., Tejerizo A., Torrent A., Gorostidi M., Utility of Intraoperative Fluorescence Imaging in Gynecologic Surgery: Systematic Review and Consensus Statement (2020) ANN SURG ONCOL, -. **IF: 4.0610**

Other Publications

- Mereu L., Verheijen R., Rovira R., Zanagnolo V., Nassir H., Kimmig R., Scambia G. The role of minimally invasive radical hysterectomy for cervical cancer by the European Society for Gynaecological Endoscopy (ESGE)-SERGS position document and joint-statement. Working group of ESGE. FACTS VIEWS VIS OBGYN. 2020, 12 (1):13-19.

Diffusion Activities

Training Activities

- María Virtudes Céspedes. Codirector of 5 Doctoral Thesis in Cellular Biology (1), Surgery (1) and Pediatric Obstetric and Gynecology (2) Programs at the UAB, and in Biotechnology Program at the UB.
- María Virtudes Céspedes. Supervisor. Training for technical assistant activities to technicians. Escuela Guineueta-IR Sant Pau agreement, Barcelona.
- María Virtudes Céspedes. Director of the Master thesis to Francisco Rodríguez Lozano, November 2020, Master's degree in Pharmacology, UAB-IR Sant Pau agreement, Barcelona.
- Ramón Rovira. Director of the Màster Universitari en Cirurgia Mínimament Invasiva en Ginecologia. INTERACT and Acadèmia de Ciències Mèdiques de Catalunya i Balears, and Universitat de Lleida. 2 years.
- Ramón Rovira. Co-director. International Course. Curso de Endoscopia Ginecológica. Clermont-Ferrant Institute (France) and Hospital Sant Pau.

Journals and Societies Activities

- María Virtudes Céspedes. Referee in Microb Cell Fact journal 2020.
- María Virtudes Céspedes. Guest-editor of the Special Issue "Applications of Nanoparticles in Tumor Therapy" for the journal Biomolecules (ISSN 2218-273X, IF 4.082), 2020.
- Ramón Rovira and María Virtudes Céspedes, members of GEICO (Grupo de Investigación del Cáncer de Ovario).
- Ramón Rovira. Member of the Societat Catalana de Ginecologia.
- Ramón Rovira. Member of the European Society in Gynecologic Endoscopy (ESGE) and supervisor in Surgical Programmes organized by ESGE.

AREA T1

Epidemiology, Pub Healthcare Service

244 Clinical Epidemiology and Healthcare Services

250 Evaluation of Public Health Policies and Programmes

254 Transport and Health: Injuries and Mobility

257 Transmissible Diseases

261 Health Inequalities

265 Primary Care Research

lic Health and
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AREA T1 · Epidemiology, Public Health and Healthcare Services

Clinical Epidemiology and Healthcare Services

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Bolíbar Ribas, Ignasi (FGS)
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Casino Rubio, Gonzalo (ACCIB)
Cervera Alepuz, Andrea (ACCIB)
Elizondo Alzola, Usué (IR)
García López, Yasmín (ACCIB)
Gich Saladich, Ignasi Josep (FGS)
Girós Boixadós, Meritxell (IR)
Gorgues Sendra, Marta (FGS)
Leo Rosas, María Victoria (ACCIB)
León García, Montserrat (IR)
Martínez García, Laura (IR)
Martínez Zapata, María José (IR)
Merchán Galvis, Ángela María (IR)
Millán Portillo, Olga (ACCIB)
Niño de Guzmán Quispe, Ena Pery (IR)
Pantoja Bustillos, Percy E. (IR)
Popova, Ekaterina (IR)
Puig Reixach, Maria Teresa (FGS)
Quintana Ruiz, María Jesús (FGS)
Rabassa Bonet, Montserrat (IR)
Requeijo Lorenzo, Carolina (FGS)
Rigau Comas, David (ACCIB)
Rocha Calderon, Claudio Alfonso (IR)
Rojas Reyes, Maria Ximena (IR)
Roqué Fíguls, Marta Cristina (IR)
Salas Gama, Karla Rocío (FGS)
Samsó Jofra, Laura (FGS)
Santero Sosa, Marilina (IR)
Solà Arnau, Ivan (FGS)
Solà Roca, Judit (ACCIB)
Song, Yang (UAB)
Sucuple Obregón, Stefanie Chriss (ACCIB)
Urrútia Cánovas, Xavier (ACCIB)
Urrútia Cuchí, Gerard (FGS)
Valli, Claudia (IR)
Vázquez Niebla, Juan Carlos (ACCIB)

Main Lines of Research

Main lines of research

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

Areas of interest

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

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Addictive Behaviours
- Anaesthesiology
- Blood and Tissue Bank
- Cerebrovascular Diseases
- Clinical Research and Clinical Trials Unit
- Clinical and Translational Cardiology
- Clinical Oncology
- Evaluation of Public Health Policies and Programmes - Public Health Agency of Barcelona
- Generation of Advanced Therapy Medicines
- Locomotor System Research
- Nursing Care Research
- Palliative Care
- Pituitary Gland Disorders
- Plastic Surgery
- Primary Care Research - EAP Sardenya
- Urology
- Women and Perinatal Health Research

External Collaborations

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

Active Grants

- Xavier Bonfill Cosp. Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública. CIBERESP. CB06/02/1010. Ministerio de Sanidad y Política Social. Duration: 2007-2020. 730,937.05 €.
- Xavier Bonfill Cosp. Estudio de adecuación de la terapia hormonal intermitente en pacientes con cáncer de próstata. PI15/00886. Instituto de Salud Carlos III. Duration: 2016-2020. 81,500 €.
- Laura Martínez García. Elaboración de una herramienta de priorización para la actualización de preguntas clínicas y aplicación a las guías de práctica clínica del Sistema Nacional de Salud. PI15/00325. Instituto de Salud Carlos III. Duration: 2016-2020. 50,000 €.
- María José Martínez Zapata. Contratos Miguel Servet I 2015. MS15/00116. Instituto de Salud Carlos III. Duration: 2016-2021. 202,500 €.
- María José Martínez Zapata. International, multi-centre, randomized controlled trial to assess transfusion thresholds in patients undergoing cardiac surgery (TRICS III). CP15/00116. Instituto de Salud Carlos III. Duration: 2016-2020. 114,350 €.
- Ekaterine Popova. Mecanismos implicados en la lesión miocárdica perioperatoria: estudio mediante angiografía coronaria computerizada y resonancia magnética cardíaca. PI16/01162. Instituto de Salud Carlos III. Duration: 2017-2021. 74,500 €.
- María José Martínez Zapata. Ensayo clínico aleatorizado multicéntrico paralelo en pacientes antiagregados con fractura pertrocantérea de fémur que evalúa una estrategia para acortar el tiempo hasta la cirugía. PI16/01879. Instituto de Salud Carlos III. Duration: 2017-2021. 71,500 €.
- Montserrat Rabassa Bonet. Contratos postdoctorales Sara Borrell 2016. CD16/00157. Instituto de Salud Carlos III. Duration: 2017-2020. 91,792.17 €.
- Pablo Ignacio Alonso Coello. COMPAR-EU - Comparing effectiveness of self-management interventions in 4 high priority chronic diseases in Europe. 754936-IR. European Union. Duration: 2018-2022. 456,109 €.
- Gerard Urrutia Cuchi. The effect of additional core stability exercises on improving dynamic sitting balance, trunk control and functional rehabilitation for subacute stroke patients: A randomized controlled trial. MARATO 20173710. Fundació La Marató de TV3. Duration: 2018-2021. 159,530 €.
- Ena Pery Niño de Guzmán Guispe. Contratos de formación en investigación Río Hortega 2017. CM17/00199. Instituto de Salud Carlos III. Duration: 2018-2020. 53,732 €.
- Ángela María Merchán Galvis. Evaluación de intervenciones para disminuir el riesgo de sangrado y/o trombosis asociada a la cirugía por fractura proximal de fémur. FI17/00190. Instituto de Salud Carlos III. Duration: 2018-2022. 82,400 €.
- Pablo Ignacio Alonso Coello. La toma de decisiones compartida de la terapia tromboprofiláctica durante el embarazo: el valor añadido del método de Análisis de Decisión. PI17/01874. Instituto de Salud Carlos III. Duration: 2018-2021. 52,000 €.
- Xavier Bonfill Cosp. Grup de Recerca Clínica i Sanitària Aplicada. 2017 SGR 01760. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Pablo Ignacio Alonso Coello. COMPAR-EU - Comparing effectiveness of self-management interventions in 4 high priority chronic diseases in Europe. 754936-FGS. European Union. Duration: 2018-2022. 180,120 €.
- Xavier Bonfill Cosp. Análisis y mejora de adecuación de la prescripción de quimioterapia al final de la vida. PI18/00034. Instituto de Salud Carlos III. Duration: 2019-2021. 56,000 €.
- Alba María Antequera Martín. Contratos de formación en investigación Río Hortega 2018. CM18/00141. Instituto de Salud Carlos III. Duration: 2019-2021. 64,926.17 €.
- Laura Martínez García. Evaluation of primary school resources from the Informed Health Choices project in improving the ability of Spanish children to assess claims about treatments. CP18/00007. Instituto de Salud Carlos III. Duration: 2019-2024. 202,500 €.
- Montserrat León García. La toma de decisiones compartida de la terapia tromboprofiláctica durante el embarazo: el valor añadido del método de análisis de decisión. FI18/00014. Instituto de Salud Carlos III. Duration: 2019-2023. 82,400 €.
- Ignasi Bolíbar Ribas. Optimisation of antibiotic prescription in acute non-complicated respiratory tract infections in children: a multicenter randomised controlled clinical trial with a 2x2 factorial design to assess two strategies targeting health professionals and pare. MARATO 20180410. Fundació La Marató de TV3. Duration: 2019-2022. 159,718.50 €.
- Pablo Ignacio Alonso Coello. COCOCARE - European partnership on Competencies for high Value Cost Conscious Care. 2018-1-NL01-KA203-039070. European Union. Duration: 2018-2021. 43,288 €.
- Laura Martínez García. Evaluation of primary school resources from the Informed Health Choices project in improving the ability of Spanish children to assess claims about treatments. CP18/00007(P). Instituto de Salud Carlos III. Duration: 2019-2022. 40,000 €.
- Laura Martínez García. Contextualización de los recursos didácticos para niños en educación primaria del proyecto Decisiones Informadas en Salud. PI19/00068. Instituto de Salud Carlos III. Duration: 2020-2022. 30,000 €.
- Percy Efrain Pantoja Bustillos. Contratos de formación en investigación Río Hortega 2019. CM19/00168. Instituto de Salud Carlos III. Duration: 2020-2022. 53,732 €.
- Marilina Santero Sosa. Análisis y mejora de la adecuación de la prescripción de quimioterapia al final de la vida. FI19/00335. Instituto de Salud Carlos III. Duration: 2020-2024. 82,400 €.
- Alba María Antequera Martín. Estancia formativa en Centro Colaborador de la Organización Mundial de la Salud para la Transferencia del Conocimiento y la Evaluación de Tecnologías Sanitarias en Equidad de Ottawa. MV19/00056. Instituto de Salud Carlos III. Duration: 2020-2020. 14,030 €.

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

Grants Awarded in 2020

- Maria Ximena Rojas Reyes. Living Evidence to inform health decisions: Development of capacity for the production and use of reliable, friendly and updated health evidence synthesis. 894990. European Union. Duration: 2020-2022. 157,332.48 €.

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

Awards

- A. Merchan Galvis, MJ. Martínez-Zapata. Factores que retrasan la cirugía en fractura de cadera y sus desenlaces. Cohorte prospectiva (HIPCCO). 16º Encuentro Latinoamericano de Cirujanos de Cadera y de Rodilla. Virtual, 2-5 December 2020. Best poster award.

Doctoral Theses

- Dimelza Osorio Sánchez. Initiatives to improve the appropriateness of clinical practice in the hospital setting. Universitat Autònoma de Barcelona. Directors: Xavier Bonfill Cosp, Gerard Urrútia Cuchí, Sergi Bellmunt Montoya. Date of defense: 04/12/2020
- Anna Selva Olid. Incorporación de la perspectiva de los pacientes en las guías de práctica clínica: una aproximación metodológica. Universitat Autònoma de Barcelona. Directors: Pablo Alonso Coello, Laura Martínez Garcia. Date of defense: 11/12/2020
- Meisser Vidal Madera Anaya. Quality assessment of scientific evidence about diagnosis and treatments for oral cancer. Universitat Autònoma de Barcelona. Directors: Xavier Bonfill Cosp, Gerard Urrútia Cuchí. Date of defense: 02/12/2020

Scientific Production

Total Impact Factor: 337.424 · Mean Impact Factor: 5.920

Acin M.T., Rueda J.-R., Saiz L.C., Parent Mathias V., Alzueta N., Sola I., Garjon J., Erviti J., Alcohol intake reduction for controlling hypertension (2020) COCHRANE DB SYST REV, 2020 (9). **IF: 7.8900**

Agache I., Beltran J., Akdis C., Akdis M., Canelo-Aybar C., Canonica G.W., Casale T., Chivato T., Corren J., Del Giacco S., Eiwegger T., Firinu D., Gern J.E., Hamelmann E., Hanania N., Makela M., Hernandez-Martin I., Nair P., O'Mahony L., Papadopoulos N.G., Papi A., Park H.-S., Perez de Llano L., Posso M., Rocha C., Quirce S., Sastre J., Shamji M., Song Y., Steiner C., Schwarze J., Alonso-Coello P., Palomares O., Jutel M., Efficacy and safety of treatment with biologicals (benralizumab, dupilumab, mepolizumab, omalizumab and reslizumab) for severe eosinophilic asthma. A systematic review for the EAACI Guidelines - recommendations on the use of biologicals in severe asthma (2020) ALLERGY, 75 (5), 1023-1042. **IF: 8.7060**

Agache I., Song Y., Rocha C., Beltran J., Posso M., Steiner C., Alonso-Coello P., Akdis C., Akdis M., Canonica G.W., Casale T., Chivato T., Corren J., del Giacco S., Eiwegger T., Firinu D., Gern J.E., Hamelmann E., Hanania N., Makela M., Martin I.H., Nair P., O'Mahony L., Papadopoulos N.G., Papi A., Park H.-S., Perez de Llano L., Quirce S., Sastre J., Shamji M., Schwarze J., Canelo-Aybar C., Palomares O., Jutel M., Efficacy and safety of treatment with dupilumab for severe asthma: A systematic review of the EAACI guidelines - Recommendations on the use of biologicals in severe asthma (2020) ALLERGY, 75 (5), 1058-1068. **IF: 8.7060**

Agache I., Rocha C., Beltran J., Song Y., Posso M., Sola I., Alonso-Coello P., Akdis C., Akdis M., Canonica G.W., Casale T., Chivato T., Corren J., Del Giacco S., Eiwegger T., Firinu D., Gern J.E., Hamelmann E., Hanania N., Makela M., Martin I.H., Nair P., O'Mahony L., Papadopoulos N.G., Papi A., Park H.-S., Perez de Llano L., Quirce S., Sastre J., Shamji M., Schwarze J., Canelo-Aybar C., Palomares O., Jutel M., Efficacy and safety of treatment with biologicals (benralizumab, dupilumab and omalizumab) for severe allergic asthma: A systematic review for the EAACI Guidelines - recommendations on the use of biologicals in severe asthma (2020) ALLERGY, 75 (5), 1043-1057. **IF: 8.7060**

Alvarez G., Sola I., Sitja-Rabert M., Fort-Vanmeerhaeghe A., Gich I., Fernandez C., Bonfill X., Urrutia G., A methodological review revealed that reporting of trials in manual therapy has not improved over time (2020) J CLIN EPIDEMIOL, 121, 32-44. **IF: 4.9520**

Alvarez G., Roura S., Cerritelli F., Esteves J.E., Verbeeck J., van Dun P.L.S., The Spanish Osteopathic Practitioners Estimates and RAtes (OPERA) study: A cross-sectional survey (2020) PLOS ONE, 15 (6), e0234713-. **IF: 2.7400**

Antequera A., Madrid-Pascual O., Sola I., Roy-Vallejo E., Petricola S., Plana M.N., Bonfill X., Female under-representation in sepsis studies: a bibliometric analysis of systematic reviews and guidelines (2020) J CLIN EPIDEMIOL, 126, 26-36. **IF: 4.9520**

Atala-Acevedo C., Zaror C., Espinoza-Espinoza G., Munoz-Millan P., Munoz S., Martinez-Zapata M.J., Ferrer M., Adaptation and validation of the PEDSQL™ oral health scale for toddlers in Chilean population (2020) BMC ORAL HEALTH, 20 (1). **IF: 1.9110**

Ballester M., Orrego C., Heijmans M., Alonso-Coello P., Versteegh M.M., Mavridis D., Groene O., Immonen K., Wagner C., Canelo-Aybar C., Sunol R., Comparing the effectiveness and cost-effectiveness of self-management interventions in four high-priority chronic conditions in Europe (COMPAR-EU): a research protocol (2020) BMJ OPEN, 10 (1). **IF: 2.4960**

Berenguer J., Ryan P., Rodriguez-Bano J., Jarrin I., Carratala J., Pachon J., Yllescas M., Arribas J.R., Aznar Munoz E., Pedro Gil Divasson P., Patricia Gonzalez Muniz P., Clara Munoz Aguirre C., Lopez J.C., Ramirez-Schacke M., Gutierrez I., et al. Characteristics and predictors of death among 4035 consecutively hospitalized patients with COVID-19 in Spain (2020) CLIN MICROBIOL INFEC, 26 (11), 1525-1536. **IF: 7.1170**

Bollo J., Turrado V., Rabal A., Carrillo E., Gich I., Martinez M.C., Hernandez P., Targarona E., Randomized clinical trial of intracorporeal versus extracorporeal anastomosis in laparoscopic right colectomy (IEA trial) (2020) BRIT J SURG, 107 (4), 364-372. **IF: 5.6760**

Brouwers M.C., Spithoff K., Kerkvliet K., Alonso-Coello P., Burgers J., Cluzeau F., Fervers B., Graham I., Grimshaw J., Hanna S., Kastner M., Kho M., Qaseem A., Straus S., Florez I.D., Development and Validation of a Tool to Assess the Quality of Clinical Practice Guideline Recommendations (2020) JAMA NETW OPEN, 3 (5), e205535-. **IF: 5.0320**

Cabanas-Valdes R., Calvo-Sanz J., Urrutia G., Serra-Llobet P., Perez-Bellmunt A., German-Romero A., The effectiveness of extracorporeal shock wave therapy to reduce lower limb spasticity in stroke patients: a systematic review and meta-analysis (2020) TOP STROKE REHABIL, 27 (2), 137-157. **IF: 1.8970**

Cassado J., Simo M., Rodriguez N., Porta O., Huguet E., Mora I., Girvent M., Fernandez R., Gich I., Prevalence of levator ani avulsion in a multicenter study (PAMELA study) (2020) ARCH GYNECOL OBSTET, 302 (1), 273-280. **IF: 2.2830**

Cassetti V., Leon Garcia M., Lopez-Villar S., Lopez Ruiz M.V., Paredes-Carbonell J.J., Community engagement to promote health and reduce inequalities in Spain: a narrative systematic review (2020) INT J PUBLIC HEALTH, 65 (3), 313-322. **IF: 2.4190**

Chalmers J.D., Laska I.F., Franssen F.M.E., Franssen F.M.E., Janssens W., Pavord I., Rigau D., McDonnell M.J., Roche N., Sin D.D., Stolz D., Suissa S., Wedzicha J., Miravitlles M., Withdrawal of inhaled corticosteroids in COPD: A european respiratory society guideline (2020) EUR RESPIR J, 55 (6). **IF: 12.3390**

Conen D., Alonso-Coello P., Douketis J., Chan M.T.V., Kurz A., Sigamani A., Parlow J.L., Wang C.Y., Villar J.C., Srinathan S.K., Tiboni M., Malaga G., Guyatt G., Sivakumaran S., Rodriguez Funes M.-V., Cruz P., Yang H., Dresser G.K., Alvarez-Garcia J., Schricker T., Jones P.M., Drummond L.W., Balasubramanian K., Yusuf S., Devereaux P.J., Risk of stroke and other adverse outcomes in patients with perioperative atrial fibrillation 1 year after non-cardiac surgery (2020) EUR HEART J, 41 (5), 645-651. **IF: 22.6730**

Corrochano M., Jimenez B., Millon J., Gich I., Rambla M., Gil E., Caparros P., Macho R., Souto J.C., Patient self-management of oral anticoagulation with vitamin K antagonists in everyday practice: Clinical outcomes in a single centre cohort after long-term follow-up (2020) BMC CARDIOVASC DISOR, 20 (1), 166-. **IF: 2.0780**

Cortes-Jofre M., Rueda J.-R., Asenjo-Lobos C., Madrid E., Bonfill Cosp X., Drugs for preventing lung cancer in healthy people (2020) COCHRANE DB SYST REV, 3, CD002141-. **IF: 7.8900**

Dewidar O., Tsang P., Leon-Garcia M., Mathew C., Antequera A., Baldeh T., Akl E.A., Alonso-Coello P., Petkovic J., Piggott T., Pottie K., Schunemann H., Tugwell P., Welch V., Over half of the WHO guidelines published from 2014 to 2019 explicitly considered health equity issues: a cross-sectional survey (2020) J CLIN EPIDEMIOL, 127, 125-133. **IF: 4.9520**

Duijts L., van Meel E.R., Moschino L., Baraldi E., Barnhoorn M., Bramer W.M., Bolton C.E., Boyd J., Buchvald F., del Cerro M.J., Colin A.A., Ersu R., Greenough A., Gremmen C., Halvorsen T., Kamphuis J., Kotecha S., Rooney-Otero K., Schulzke S., Wilson A., Rigau D., Morgan R.L., Tonia T., Roehr C.C., Pijnenburg M.W., European Respiratory Society guideline on long-term management of children with bronchopulmonary dysplasia (2020) EUR RESPIR J, 55 (1). **IF: 12.3390**

Florez I.D., Brouwers M.C., Kerkvliet K., Spithoff K., Alonso-Coello P., Burgers J., Cluzeau F., Fervers B., Graham I., Grimshaw J., Hanna S., Kastner M., Kho M., Qaseem A., Straus S., Assessment of the quality of recommendations from 161 clinical practice guidelines using the Appraisal of Guidelines for Research and Evaluation-Recommendations Excellence (AGREE-REX) instrument shows there is room for improvement (2020) IMPLEMENT SCI, 15 (1), 79-. **IF: 5.5310**

Foroutan F., Guyatt G., Zuk V., Vandvik P.O., Alba A.C., Mustafa R., Vernooij R., Arevalo-Rodriguez I., Munn Z., Roshanov P., Riley R., Schandelmaier S., Kuijpers T., Siemieniuk R., Canelo-Aybar C., Schunemann H., Iorio A., GRADE Guidelines 28: Use of GRADE for the assessment of evidence about prognostic factors: rating certainty in identification of groups of patients with different absolute risks (2020) J CLIN EPIDEMIOL, 121, 62-70. **IF: 4.9520**

Galan J., Mateo E., Carmona P., Gajate L., Mazer C.D., Martinez-Zapata M.J., Restrictive or liberal transfusion for cardiac surgery: Spanish results of a randomized multicenter international parallel open-label clinical trial Transfusión Restrictiva o liberal en cirugía cardiaca: Resultados españoles de un ensayo clínico aleatorizado, multicéntrico, internacional, paralelo y abierto (2020) MED INTENSIVA. **IF: 2.3630**

Garcia-Patterson A., Ovejero D., Minambres I., Chico A., Gil P.A., Martinez M.-J., Adelantado J.M., de Leiva A., Gich I., Desoye G., de Mouzon S.H., Corcoy R., Both glycaemic control and insulin dose during pregnancy in women with type 1 diabetes are associated with neonatal anthropometric measures and placental weight (2020) DIABETES-METAB RES. **IF: 3.3140**

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- Urrútia Cuchí G, Ariel Franco J.V. Medicina Basada en la Evidencia en Trombosis. Sanidad y Ediciones, S.L. 2020. ISBN: 978-84-17572-96-9

Diffusion Activities

Dissemination Activities to Society

- X. Bonfill, M. Gorgues, G. Casino, A. Cervera, Y. García. "ExME: Estudiantes por la Mejor Evidencia". Creation of the ExME initiative: ExME is a growing network of students from around the world, from school age to university, who are interested in learning more about evidence-based health care (EBH). https://exme.cochrane.org/
- I. Solà, MJ. Martínez, M. Roqué, G. Casino, C. Canelo-Aybar, G. Urrútia, M. Girós. "Evidencias COVID-19". This resource collects several documents that summarise –in the form of literature review and critical appraisals of studies– the most relevant information to provide an answer to clinical questions and priority topics regarding the pandemic. Available at: https://es.cochrane.org/es/recursos/evidencias-covid-19
- L. Martínez García, L. Samsó Jofra. Aprenda a tomar decisiones informadas sobre su salud. Interview. Revista OCU-Salud. 2020;149:26. 1 April 2020.
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- JL. Baquero, C. Rocha, U. Elizondo, M. de la Poza, I. Bolíbar, P. Alonso-Coello. Proyecto Optim@p. Poster. IV Encuentro FEP de Organizaciones de Pacientes. Virtual, 27-28 October 2020.
- G. Casino, A. Cervera, I. Solà, M. Roqué. Aumentar la ingesta de agua ¿previene la formación de piedras en el riñón? Technical report. Cochrane Responde: dissemination project that offers evidence-based answers to health questions in a plain language. December 2020.

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- M. Gorgues, G. Casino, I. Solà, M. Roqué. El uso de hilo dental o de cepillos interdentales en compañía de un cepillado cuidadoso de dientes, mejora la salud oral. OCU Salud Magazine. Organización de Consumidores y Usuarios. February 2020.

Scientific Dissemination

- J. Louro, M. Román, M. Posso, C. Vidal, M. Prieto, F. Saladié, M. Baré, M. Sánchez, M.J. Quintana, X. Bargalló, J. Ferrer, L. Peñalva, M. Sala, X. Castells. "Differences in breast cancer risk after a benign breast disease according to the screening type. Oral session. 12th European Breast Cancer Conference (EBCC-12). Virtual, 2-3 October 2020.
- P. Giorgi Rossi, A. Lebeau, C. Canelo-Aybar, M.C. Posso Rivera, D. Rigau Comas, C. Quinn, P. Alonso Coello, H. McGarrigle, S. Warman, M. Broeders, S. Duffy, M.W. Langendam, A. Grä wingholt, M. Follmann, Z. Saz-Parkinson, H. Schünemann. Recommendations from the European Commission Initiative on Breast Cancer on multigene tests to guide the use of adjuvant chemotherapy in patients who have hormone receptor positive, HER-2 negative, lymph node negative or up to 3 lymph nodes positive invasive breast cancer. Oral session. 12th European Breast Cancer Conference (EBCC-12). Virtual, 2-3 October 2020.
- S. Suclupe, PE. Pantoja, G. Robleda, C. Requeijo, K. Salas-Gama, MJ. Martínez-Zapata. Effect of interventions to prevent adverse events in Intensive Care Units. Poster with oral defense. VII Jornada Virtual del Centro Español para los Cuidados de la Salud Basados en la Evidencia. Virtual, 9 November 2020.
- MJ. Martínez-Zapata. Desarrollo de una estrategia para el cribado de patologías cardíacas en adolescentes. Poster. VII Jornada Virtual del Centro Español para los Cuidados de la Salud Basados en la Evidencia. Virtual, 9 November 2020.
- A. Merchan Galvis, MJ. Martínez-Zapata. Factores que retrasan la cirugía en fractura de cadera y sus desenlaces. Cohorte prospectiva (HIPCCO). Poster. 16º Encuentro Latinoamericano de Cirujanos de Cadera y de Rodilla. Virtual, 2-5 December 2020.
- MJ. Martínez-Zapata. Conducción de Ensayos Clínicos Aleatorizados Controlados (ECAs) en el contexto de COVID-19. Invited speaker. UTE Talks – Cochrane Ecuador. Virtual, 29 May 2020.
- MJ. Martínez-Zapata. Plasma rico en plaquetas en curación de las heridas, una mirada desde la evidencia. Invited speaker. V Congreso de Cicatrización de Heridas. Asociación Interdisciplinaria Argentina de Cicatrización de Heridas. Virtual, 26-28 November 2020.
- M. León García, K. Salas Gama, I. Solà Arnau, G. Casino, X. Bonfill. DIANASALUD: recomendaciones para la adecuación de la práctica clínica durante la pandemia COVID-19. Video presentation. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). Virtual, 30 October 2020.
- I. Solà. Toma de decisiones basada en la evidencia en tiempos de COVID-19. Invited speaker.Ciclo de diálogos sobre el uso de evidencias en tiempos de crisis sanitaria. Universidad de la Frontera (Chile). Virtual, 11 November 2020.
- I. Solà. Cómo pasar de las evidencias a las recomendaciones y de la recomendación a la práctica clínica en tiempos de COVID-19. Invited speaker. UTE Talks – Cochrane Ecuador. Virtual, 15 May 2020.
- I. Solà. Toma de decisiones informadas en tiempos de COVID-19. Invited Speaker. BiblioMad Salud – Cochrane Madrid. Virtual, 27 October 2020.
- L. Samsó Jofra, P. Alonso-Coello, L. Martínez García. Aprender a tomar decisiones informadas en salud: Estudio piloto en escuelas de Barcelona. Poster. XL Congreso Nacional y I Congreso Virtual de la semFYC, 15 September – 6 October 2020.
- I. Bolíbar. Esdeveniments adversos en diferents àmbits assistencials. Invited speaker. I Jornada de Seguretat dels Pacients. Col·legi Oficial d'Infermers i Infermeres de Barcelona. Barcelona, 13 February 2020.
- A. Antequera, I. Solà, M. Roqué, E. Stallings. Organizers. A qué nos referimos cuando hablamos de pronóstico. Online seminar. 16 December 2020.
- P. Alonso-Coello, J. Eliott, B. Tendal. Living evidence and Guidelines for COVID-19: Oportunities and Challenges. Session Chair. Guidelines International Network. 21 July 2020.

AREA T1 · Epidemiology, Public Health and Healthcare Services

Evaluation of Public Health Policies and Programmes

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Villalbí Hereter, Joan Ramon (ASPB)

Main Lines of Research

- Monitoring of behaviours and other health risk factors such as environmental exposure (FRESC survey, DAMA cohort, and HUMO cohort).
- Evaluation of public health policies and Action Plans (Barcelona mental health action plan, energy poverty, guaranteed minimum income, "superblocks", housing with services, Plan for play in Barcelona's Public Areas, and adaptation of schools to climate change).
- Evaluation of public health programmes and services (school-based prevention programmes for obesity, smoking, alcohol and cannabis consumption, breast cancer screening programmes).

Scientific Challenges

- Promote research into the evaluation of policies and programmes.
- Support the debate on conceptual and methodological aspects of results evaluation in prevention and health promotion.
- Consolidate the group's research, fostering less developed aspects such as financial assessment and the evaluation of health protection interventions.
- Develop a theoretical corpus of concepts, principles, methods and examples that contribute to filling the gap in undergraduate and postgraduate teaching regarding the design and evaluation of risk prevention and health promotion interventions.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Clinical Epidemiology and Healthcare Services (PI: Xavier Bonfill).
- Transport and Health: Injuries and Mobility (PI: Catherine Pérez).
- Health Inequalities (PI: Carme Borrell).
- Epidemiology of Addictions.

External Collaborations

- CIBER-Epidemiology and Public Health (Group 18: Evaluation of public health policies and programmes).
- CIBER-Obesity and Nutrition (Group PI: Fernando Fernández de Aranda).
- CIBER-Respiratory Disease (Group CB19/06/00004; PI: Esteve Fernández Muñoz).
- AGAUR Consolidated Research Group (Evaluation of public health policies and programmes).
- Tobacco Working Group of the Spanish Epidemiology Society.
- Foreign universities: Johns Hopkins University, USA.
- Spanish universities: Universitat Pompeu Fabra, Universitat Ramon Llull, Universitat de Vic, Universitat Internacional de Catalunya, Universitat Oberta de Catalunya, Universidad de Santiago de Compostela, Universidad de Alcalá de Henares.
- Primary care centres: Ciutat Meridiana, Roquetes, Sant Rafael and Sardenya (Barcelona).
- Catalan Institute of Oncology (ICO).
- Municipal bodies: Barcelona Sports Institute (IBE), Barcelona Municipal Institute of Education (IME).
- Regional bodies: Public Health Agency of Catalunya (Promoting Health through Physical Activity and Healthy Eating Plan) and Catalan Health Information and Quality Agency (AQUAS).
- Other bodies: Catalan Recreation Foundation (FCE).
- Companies: Fontvella and Danone (Health Affairs Departments).

Active Grants

- María José López Medina. Exposición al humo ambiental y residual del tabaco en niños y niñas: cohorte HUMO. PI17/01359. Instituto de Salud Carlos III. Duration: 2018-2021. 73,000 €.
- Joan Ramon Villalbí Hereter. Disponibilidad, accesibilidad, visibilidad de consumo, promoción y publicidad del alcohol en el entorno urbano y su relación con el consumo de alcohol en adolescentes. 2016I029. Ministerio de Sanidad, Servicios Sociales e Igualdad. Duration: 2017-2020. 37,000 €.
- María José López Medina. Desigualtats socials en salut en la població infantil a Catalunya. DI-61 AGAUR. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2019-2022. 30,072 €.
- María José López. Blue, Green & Grey_Adapting Schools to Climate Change: From school vulnerable to heat to an open climate shelter for all the citizenship: implementation of blue, green and traditional solutions against heat in school equipments and CC consciousness. GBG_AS2C. Urban Innovative Actions (UIA). Duration: 2018-2021. 323,666.25 €.

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

Doctoral Theses

- Francesc López Seguí. Essays on digital health interventions. Universitat Pompeu Fabra. Director: Anna Garcia Altés. Date of defense: 09/10/2020

Transfer Products

- Xavier Continente, Gemma Serral, Carles Ariza, Mª José López. La salut a Barcelona 2019. ASPB, Barcelona, 2020.
- Anna Pérez, Francesca Sánchez. Barcelona Salut als Barris. Memòria 2019. ASPB, Barcelona, 2020.
- Carles Ariza, Gemma Serral, Francesca Sánchez. Hàbits alimentaris dels infants i adolescents de Barcelona. ASPB, Barcelona, 2020.
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Scientific Production

Total Impact Factor: 92.705 · Mean Impact Factor: 2.809

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Other Publications

- Laura Oliveras, Lucia Artazcoz, Carme Borrell, Laia Palència, María José López, Mercè Gotsens, Andrés Peralt, Marc Marí-Dell'Olmo. The association of energy poverty with health, health care utilisation and medication use in southern Europe. SSM - Population Health. 2020 Sep 10;12:100665. PMID: 33195789. DOI: 10.1016/j.ssmph.2020.100665.

Diffusion Activities

Dissemination to Society

- MJ López, i E Fernández. Exposició Art i Salut: Projecte TackSHS. Since November 2020. https://www.aspb.cat/noticies/exposicio-art-salut-tackshs/
- Joan Ramon Villalbí. Prevenció i promoció de la salut. Màster de Salut Pública. Universitat Pompeu Fabra. Year 2019-2020.
- Mª José López. Evaluación de políticas y programas en Salud Pública. Màster de Salut Pública. Universitat Pompeu Fabra. Years 2019-2020, 2020-2021.
- Joan Ramon Villalbí. COVID advisor for Barcelona City Council. Treatment of events in public space and resumption of activity in municipal facilities after confinement.

Scientific Dissemination

- E. Henderson, MJ. López, X. Continente, N. Cortés, E. Fernández, G. Investigadores TackSHS. Exposición al Humo Ambiental de Tabaco en entradas exteriores de escuelas de primaria en Europa. Oral communication. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). 21 October 2020.
- E. Henderson, S. Gallus, MJ. López, A. Lugo, X. Liu, X. Continente, E. Fernández, G. Investigadores TackSHS. Exposición al Humo Ambiental de Tabaco en espacios exteriores de 12 países europeos. Oral communication. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). 21 October 2020.
- X. Continente, MJ. López, L. López, E. Henderson, N. Cortés, N. Ramírez, E. Fernández, G. Investigadores TackSHS. Exposición al humo ambiental de tabaco y al tabaco residual en coches. Oral communication. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). 23 October 2020.
- X. Continente, C Ariza, MJ López, N Vázquez, L Muñoz, JR Villalbí. Evaluación de la efectividad de un programa de prevención selectiva del consumo de alcohol y cánnabis en jóvenes vulnerables. Poster. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). October 2020.
- Amigo F, Dalmau-Bueno A, García-Altés A. Weekend effect en la mortalidad en pacientes ingresados de urgencia en los hospitales de Cataluña. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE). Epidemiología, sostenibilidad y responsabilidad social. Online, 21-23 and 29-30 October 2020.
- Carrillo G, Dalmau A, Campillo C, García Altés A. Caesarean section trends in Catalonia between 2013 and 2017 based on the Robson Cassification: a cross-sectional study. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE). Epidemiología, sostenibilidad y responsabilidad social. Online, 21-23 and 29-30 October 2020.
- Albert S, García-Altés A, Dalmau-Bueno A. Estudio descriptivo del uso de servicios sanitarios y del estado de salud en una población de trabajadoras sexuales de carretera. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE). Epidemiología, sostenibilidad y responsabilidad social. Online, 21-23 and 29-30 October 2020.
- Bullich I, Saura A, Dalmau A, Busquets JM, García-Altés A. Influeix el DVA en l'assistència durant l'etapa final de vida? Estudi cas-control amb dades administratives. Oral communication. XIè Congrés de la Societat Catalano-Balear de Cures Pal·liatives. Barcelona, 14-15 February 2020.
- Comitè d'Experts per a la Transformació del Sistema Públic de Salut (Anna Garcia-Altés). 30+ Mesures per enfortir el sistema de salut. Barcelona, September 2020.
- Anna Garcia-Altés. Evaluación de resultados con transparencia. La situación y futuro de la EPP. Conference. Innovación en tiempos de crisis. IV Jornadas de Evaluación de Políticas Públicas del IAAP. Sevilla, 3 December 2020.
- Anna Garcia-Altés. Member of the Scientific Committee. Learning from COVID-19, Transforming Health Services. An IHF virtual forum. International Hospital Federation. Online worldwide, 4-5 November 2020.
- Anna Garcia-Altés. COVID-19 y su impacto en las desigualdades: experiencias y propuestas desde Europa y América. Tertúlia. XXXI Escuela de Salud Pública de Menorca. Virtual, 21 September 2020.
- Anna Garcia-Altés. La visió de futur de l'Observatori de la mort. Conference. Accredited session. Parc Sanitari Pere Virgili, 6 March 2020.

AREA T1 · Epidemiology, Public Health and Healthcare Services

Transport and Health: Injuries and Mobility

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Santamariña Rubio, Elena (ASPB)

Main Lines of Research

- Health impacts of urban policies, including housing, urban planning and mobility.
- Public health injury surveillance.
- Evaluation of road safety strategies at the urban level.
- Indicators of mobility exposure and risk of traffic injuries.
- Determinants of walking as a mode of transport.
- Health impact assessment of active transport (walking and cycling).
- Inter-sector policies in transport: impact on sustainable environment, health and equity.

Scientific Challenges

- Study of the nature of road-traffic injuries and their severity according to the characteristics of the collision and the vehicles involved, particularly in urban settings.
- Evaluate road safety policies and interventions.
- Calculation of risk indicators using mobility exposure.
- Study of motorized and non-motorized mobility and their impact on health.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Health Inequalities (PI: Carme Borrell).
- Safety indicators for cities IRTAD Cities (Joint Transport Research Centre of the OECD and the International Transport Forum (JTRC)).

External Collaborations

- All members of the group are members of the group of Social Inequalities of CIBERESP (Consorcio de Investigación Biomédica de Epidemiologia y Salud Pública).
- The IP of the group is member of the European Committee of The Transport and Health Study Group (THSG) (UK).
- Joint action on monitoring injuries in Europe (JAMIE) (European Agency for Health and Consumers).
- Member of the Scientific Committee of the Institut Français des Sciences et Technologies des Transports, de l'Amenagement et de Réseaux (IFSTTAR). From 2016.
- Collaborators/Partners of the Safety CaUsation, Benefits and Efficiency (SafetyCube) (H2020 N. 633485), a research project funded by the European Commission under the Horizon 2020. Loughbourough University (England).
- Partners of the Pan-European urban Climate Services (PUCS) (H2020 N 730004), a research project funded by the European Commission under the Horizon 2020.

Active Grants

- Ana Novoa Pardo. Impacto en salud y bienestar de la vivienda cooperativa en cesión de uso. PI18/01761. Instituto de Salud Carlos III. Duration: 2019-2021. 62,000 €.
- Environmental, health effects and health inequalities of Superblocks in Barcelona (Salut als Carrers). Vital Strategies. Partnership for Healty Cities. Duration: 2018-2021. 80,000 €.
- Avaluació de les Superilles, les Zones de Baixes Emissions i d'altres polítiques de mobilitat i contra la contaminació de l'aire. Duration: 2017-2020. 352,000 €.
- Partners of the Participatory Urban Living for Sustainable Environments (PULSE) (H2020 N. 727816), a research project funded by the European Commission under the Horizon 2020. Duration: 2017-2020. 320,000€ (partner).

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

Awards

- Marta Olabarria Award Best Comunication Senior Reseacher: Olabarria M.; Pérez K. Infodistrictes: Una herramienta de visualización de datos de salud urbana a modo infográfico. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associaçao Portuguesa de Epidemiologia (APE). October 2020.

Transfer Products

- Health and Policy Impact Observatory, OBSIP [Observatori de Salut i Impacte de Polítiques, OBSIP]
  - 1. Objective: The Health and Policy Impact Observatory (OBSIP) has two objectives:
    - i. To monitor the state of health of people residing in the city of Barcelona, and its determining factors, taking into account axes of inequality.
    - ii. To evaluate the impact on health and its determinants of municipal policies, as well as their impact on social inequalities in health.
  - 2. Accessible at: https://ajuntament.barcelona.cat/observatori-salut/
- InfoDistrictes
  - 1. Objective: InfoDistrictes is a tool for the visualisation of a set of indicators of health and its determinants in the districts of the city of Barcelona. It presents indicators available in the district sphere, with reference to the values of the neighbourhoods and the city as a whole. It is also possible to find a tab with a selection of indicators comparing the values in the districts of the city and visualising their evolution over time. The data can be downloaded in Excel or PDF format. If using InfoDistrictes to present data in other formats, we would kindly ask you to cite the following source: Public Health Agency of Barcelona. InfoDistrictes BCN
  - 2. Accessible at: https://www.aspb.cat/infodistrictes
- Activities report of the Housing and Health Group
  - 1. Objective: In the year 2016, the Housing and Health Group of the Public Health Agency of Barcelona was created. This document covers the activities of the Group from its creation until the end of the year 2019. The objectives of the Group are explained along with the main lines of work, the research projects and other investigations that it has led or in which it has participated, the theses and dissertations supervised, as well as other products of knowledge transfer and other activities.
  - 2. Accessible at: pending publication. It will be available here: https://www.aspb.cat/arees/promocio-entorns/habitatge/
- Geospatial Analysis of Traffic Collisions. Barcelona, 2019
  - 1. Objective: The objective of this document is to conduct a geospatial analysis of traffic collisions in Barcelona in 2018 in order to detect areas with a high concentration of collisions and areas of greater risk, taking into account the daily intensity of the traffic.
  - 2. Accessible at: https://www.aspb.cat/documents/analisi-geoespacial-2019
- Press conference to present the report "Housing emergency, energy poverty and health. Report on residential insecurity in Barcelona 2017-2020". July 2020.
- Letter to the President of the Government of Spain regarding evictions of vulnerable people. November 2020.
- Press release in Gaceta Sanitaria "Energy poverty worsens state of health by up to threefold".

Scientific Production

Total Impact Factor: 18.080 · Mean Impact Factor: 3.616

Borrell C., Pasarin M.I., Diez E., Perez K., Malmusi D., Perez G., Artazcoz L., Health inequalities as a political priority in Barcelona Las desigualdades en salud como prioridad política en Barcelona (2020) GAC SANIT, 34 (1), 69-76. **IF: 1.5640**

Carrere J., Peralta A., Oliveras L., Lopez M.J., Mari-Dell'Olmo M., Benach J., Novoa A.M., Energy poverty, its intensity and health in vulnerable populations in a Southern European city Pobreza energética, su intensidad y salud en población vulnerable en una ciudad del sur de Europa (2020) GAC SANIT. **IF: 1.5640**

Mueller N, Rojas-Rueda D, Khreis H, Cirach M, Andrés D, Ballester J, Bartoll X, Daher C, Deluca A, Echave C, Milà C, Márquez S, Palou J, Pérez K, Tonne C, Stevenson M, Rueda S, Nieuwenhuijsen M. Changing the urban design of cities for health: The superblock model. Environ Int. 2020 Jan;134:105132. doi: 10.1016/j.envint.2019.105132. Epub 2019 Sep 9. PMID: 31515043. DOI: 10.1016/j.envint.2019.105132. **IF: 7.577**

Palencia L., Leon-Gomez B.B., Bartoll X., Carrere J., Diez E., Font-Ribera L., Gomez A., Lopez M.J., Mari-Dell'olmo M., Mehdipanah R., Olabarria M., Perez G., Puig-Ribera A., Rico M., Rojas-Rueda D., Vasquez-Vera H., Perez K., Study protocol for the evaluation of the health effects of superblocks in Barcelona: The "salut als carrers" (health in the streets) project (2020) INT J ENV RES PUB HE, 17 (8). **IF: 2.8490**

Triguero-Mas M., Martinez-Solanas E., Barrera-Gomez J., Agis D., Perez N., Reche C., Alastuey A., Querol X., Perez K., Basagana X., Public Transport Strikes and Their Relationships with Air Pollution, Mortality, and Hospital Admissions (2020) AM J EPIDEMIOL, 189 (2), 116-119. **IF: 4.5260**

Other Publications

- Ariza C, Serral G, Sánchez E, Pérez K, Santamariña E. La salut dels infants i adolescents a Barcelona. Barcelona Societat, nr 24, 2020.
- Carrere J, Reyes A, Oliveras L, Fernández A, Peralta A, Novoa AM, Pérez K, Borrell C. The effects of cohousing model on people's health and wellbeing: a scoping review. PUBLIC HEALTH REV. 2020 Oct 6;41:22. doi: 10.1186/s40985-020-00138-1.
- León-Gómez Brenda Biaani, Laia Palència, Anna Puig-Ribera, Xavier Bartoll, Katherine Pérez, Does adult recreational screen-time sedentary behavior have an effect on self-perceived health? PUBLIC HEALTH IN PRACTICE, Volume 1, 2020, 100055, ISSN 2666-5352, DOI10.1016/j.puhip.2020.100055

Diffusion Activities

- Carrere J, Marí-Dell'Olmo M, Peralta A, Belvis F, López M.J, Plana M, Bartoll X, Benach J, Novoa A. Efectos de una intervención para reducir la pobreza energética en población de servicios sociales con bajos ingresos en Barcelona. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). October 2020.
- León-Gómez BB, Palència L, Puig-Ribera A, López MJ, Carrasco G, Rico M, Pérez K. Methodological guide for the health evaluation of the "superilles" model in Barcelona (project Salut als carrers). I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). October 2020.
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AREA T1 · Epidemiology, Public Health and Healthcare Services

Transmissible Diseases

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Main Lines of Research

1. Tuberculosis

- Use of new technologies to improve tuberculosis (TB) control, diagnosis, treatment and prevention: video DOT, website of the Barcelona TB Research Unit, Twitter and Enfermedades Emergentes journal.
- Role of diabetes in the different clinical presentations and evolution of TB.
- Predictors of TB in a cohort of TB-infected contacts to determine disease incidence at 2 and 5 years.
- Characterization of TB in vulnerable populations: immigrants, homeless people, children, poorly adherent TB patients, etc.

2. Sexually transmitted infections (STI)/ HIV

- Use of information and communication technologies for the prevention and control of STI/HIV:
  - a) Creation of Apps to promote sexual health among both HIV-positive and HIV-negative men.
  - b) Use of Apps to offer rapid tests outside the healthcare circuit.
- New technologies: APPS for HIV and STD contacts tracing.
- Study of the proportion of pelvic inflammatory disease due to chlamydia.
- Study of HIV contacts to determine the incidence among them.

3. Community health workers (CHW) for communicable diseases control: with the increase in immigration, we have incorporated CHW who aid in the prevention and control of these diseases. They act as mediators and translators.

4. Incidence studies of mumps, whooping cough and STIs, as well as the influence of the crisis on some communicable diseases such as TB and hepatitis. Study of factors influencing the transmission of pertussis in homes as well as the effectiveness of immunization and chemoprophylaxis.

5. Outbreaks and COVID-19

- Investigation of the causes and implementation of control measures as in the case of different outbreaks of norovirus.
- Characterization of COVID-19 outbreaks in different settings in the city of Barcelona.
- Impact of COVID-19 in terms of incidence and mortality in nursing homes and associated factors.
- Vaccination hesitancy and COVID-19.
- To assess whether there is any difference in the amount of viable SARS-CoV-2 virus released by vaccinated individuals in comparison with non-vaccinated. Can vaccinated people transmit COVID-19? To study the systemic and local immune response in both groups of patients.

6. To monitor vaccine hesitancy, study its determinants, and develop interventions to reduce it and prevent it

- Estimation of vaccine refusal in families with children aged under 15 years old in Barcelona.
- Knowledge, attitudes and beliefs about systematic childhood vaccines among paediatric healthcare workers in Barcelona.

7. Vector-borne diseases

- Environmental factors related to vector distribution, specially Aedes albopictus and Culex pipiens, and their impact on the risk of local transmission of arboviral diseases.

Scientific Challenges

- Prevent sexually transmitted infections and other transmissible diseases.
- Evaluate HIV screening programmes in gay saunas.
- Improve detection and research into causes of hepatitis C.
- Improve detection and control measures of outbreaks.
- Improve adherence of tuberculosis patients and control of latent tuberculosis infection.
- STD/HIV and TB contact tracing.
- Cost-effectiveness analysis of public health interventions.
- Describe the threats posed by and improve the procedures for tackling vector-borne transmitted diseases.

Collaborations

External Collaborations

- HEPSCREEN: Screening for hepatitis Project. http://hepscreen.eu/
- CASCADE
- GEMES
- COHERE
- GESIDA: grupo de estudio del SIDA de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC). http://gesida-seimc.org/
- PII-TB SEPAR: Programa integrado de investigación en Tuberculosis, Sociedad Española de Patología Torácica
- AGAUR: Agència de Gestió d'Ajuts Universitaris i de Recerca. http://agaur.gencat.cat/ca/inici
- TB-NET: Tuberculisis European Network. http://www.tb-net.org/
- CIBERESP: CIBER of Epidemiology and Public Helath. http://www.ciberesp.es/
- Serveis Clínics, SAU
- UITB: Unitat d'Investigació en Tuberculosi de Barcelona

Active Grants

- Patricia García de Olalla Rizo. Uso de las Aplicaciones para telefonía móvil en la promoción de las pruebas del VIH y otras Infecciones de Transmisión sexual en hombres que tienen sexo con hombres. PI16/02025. Instituto de Salud Carlos III. Duration: 2017-2021. 46,500 €.
- Sandra Manzanares Laya. Prueba rápida de hepatitis C en hombres que tienen sexo con hombres: conocimientos, prevalencia e implicaciones para el cribado en VIH negativos. PI17/02077. Instituto de Salud Carlos III. Duration: 2018-2020. 32.200 €.
- Àngels Orcau Palau. Asociación de diabetes y tuberculosis en un distrito con alta incidencia de tuberculosis. Estudio de casos y controles, 2007-2016. PI16/01751. Instituto de Salud Carlos III. Duration: 2017-2021. 46,500 €.
- Cristina Rius Gibert. Prueba rápida de hepatitis C en hombres que tienen sexo con hombres: conocimientos, prevalencia e implicaciones para el cribado en VIH negativos. PI17/02077. Instituto de Salud Carlos III. Duration: 2018-2021. 32,200 €.
- Jordi Caballero. MIND/COVID-19: Mental health Impact and NeeDs associated with COVID-19: a comprehensive national evaluation in Spain. COV20/00711. Duration: 2020-2021. 330,293 €.
- Joao Miguel Encarnació. Earth observation service for preventive control of insect disease vectors. H2020-EIC-FTI-2018-2020. European Union. Duration: 2018-2021. 1,558,957 €.
- Frederic Bartomeus. Community-Driven Big Data Intelligence To Fight Mosquito-Borne Disease (Ciencia Ciudadana y Big Data para combatir las enfermedades transmitidas por los mosquitos). HR18-00336. Fundació "La Caixa" 2018. Duration: 2019-2022. 999,920 €.
- Amparo Laurrari. Community-driven big data intelligence to fight mosquito-borne disease. HR18-00336 "La Caixa". Duration: 2019-2022. 166,245 €.
- José Antonio Domínguez. Nuevas aproximaciones diagnósticas y terapéuticas en el control de la infección y la enfermedad tuberculosa. INNOVA4TB. H2020-MSCA-RISE-2018. Horizon 2020 European Union. Duration: 2019-2022. 1,250,000 €.
- Joan Pau Millet. Estudio piloto sobre la factibilidad y aceptación del tratamiento de la tuberculosis mediante tratamiento directamente observado por vídeo. 688/18. SEPAR. Duration: 2019-2020. 9,000 €.
- Diana Gómez. Mapas de riesgo de vectores y enfermedades emergentes o reemergentes en España. PI18/00850. FIS. Duration: 2018-2021.
- Cristina Rius. Prueba rápida de hepatitis C en hombres que tienen sexo con hombres: conocimientos, prevalencia, incidencia e implicaciones para el cribado en VIH negativos. Duration: 2019-2020. PI17/02077 FIS. 38,962 € and CIBERESP 7,221 €.

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

Scientific Production

Total Impact Factor: 91.709 · Mean Impact Factor: 3.527

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Other Publications

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- Millet JP. Impacto y amenazas del COVID-19 en los Programas de TB. Enf Emerg 2020. Vol 3 Nr 3 pp 201-203.

Diffusion Activities

Lectures

- Mercuriali L. Vigilancia epidemiológica y control vectorial de arbovirus en la Ciudad de Barcelona. X Jornada de Enfermedades Emergentes. Barcelona, 10 June 2020.
- X Rius C. COVID-19: investigació de casos i contactes. Jornada de Enfermedades Emergentes. Barcelona, 10 June 2020.
- Millet JP. Impacto y amenazas del COVID-19 en los Programas de TB. XXIV Jornadas Internacionales sobre Tuberculosis. Barcelona, 16-17 November 2020.
- Thiaw BE, Artigas A. Brotes en senegaleses. XXIV Jornadas Internacionales sobre Tuberculosis. Barcelona, 16-17 November 2020.

Posters

- Barrabeig I, Carol M, Ferrús G, Sabaté M, Camps N, Millet JP, Jané M, Caylà JA, Godoy P. Video. Riesgo de tuberculosis entre los contactos de casos índice de tuberculosis pulmonar en Cataluña. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). Barcelona, 21-30 October 2020.
- Parrón I, Orcau A, Follia N, Clotet L, Minguell S, Ros M, Ferras J, Sala MR, Godoy P, Millet JP, et al. Video. Riesgo de tuberculosis entre los contactos de casos índice de tuberculosis pulmonar en Cataluña. I Congreso Virtual de la Sociedad Española de Epidemiología (SEE) y da Associação Portuguesa de Epidemiologia (APE). Barcelona, 21-30 October 2020.
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- Ruíz MC, Casas X, Aragón A, Corpas P, Cotes I, García I, García T, Larrégula M, Lumbierres M, Millon MA, Montoro M, Moreno M, Rey D, Serrés M, Vives M, Soteras J, Maldonado J, Altet MN, Millet JP. Tratamiento directamente observado de tuberculosis a nivel comunitario y factores Asociados a incumplimiento en Cataluña (2000-2018). 53º Congreso Nacional de la Sociedad Española de Neumología y Cirugía Torácica (SEPAR) (on-line). Santiago de Compostela, 12-14 November 2020.
- Brugueras S, Orcau A, Millet JP, Avellanés I, Masdeu E, Artigas A, Clos R, Gorrindo P, Caylà JA, et al. Caracteristicas de los pacientes sin hogar con tuberculosis en una Ciudad de baja incidència de tuberculosis. 53º Congreso Nacional de la Sociedad Española de Neumología y Cirugía Torácica (SEPAR) (on-line). Santiago de Compostela, 12-14 November 2020.
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Presentations in Scientific Meetings

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AREA T1 · Epidemiology, Public Health and Healthcare Services

Health Inequalities

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Díez David, Elia (ASPB)
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Porzio, Laura (IR)
Rodríguez Sanz, Maica (ASPB)
Sánchez Castiñeira, Sergio (IR)
Vásquez Vera, Hugo Erick (IR)

Main Lines of Research

Social class and geographical inequalities in health

- Study of health inequalities according to social class in Spain and worldwide.
- Exploitation of information at the census section level as the maximum disaggregation unit and at higher geographic aggregation levels such as the neighbourhood, town and region.

Gender inequalities in health

- Sexual division between productive and reproductive work (gender roles) and differences in male and female identities as the two main structural factors that generate gender inequalities in health.

Social and political determinants of health and their impact on policy-building and interventions

- Evidence of the macroeconomic determinants of health inequalities between countries.
- The impact of the political context on the health of the population and the conclusion that countries with better-developed welfare states have better levels of health.

Scientific Challenges

Health inequalities according to different axes of inequality

- Study of social determinants of health in terms of social class and gender, with the purpose of integrating these 2 axes and analysing inequalities among immigrants.
- Research into the impact of the area of residence, especially smaller urbanized areas, on the health of the population.

Gender inequalities in health

- Further explore the theoretical framework and explanatory charts developed to guide comprehension of the gender determinants that affect health.

Social and political determinants of health and their impact on policy-building and interventions

- Study the influence of policies on the health of populations and on social inequalities in health.

Sex and reproductive inequalities in health

- Establish a line of research to investigate different aspects of sexual and reproductive health (sexuality, contraception, pregnancy, birth, miscarriage, abortion, birth rates, etc).

Collaborations

External Collaborations

- Vlaamse Instelling Voor Technologisch Onderzoek N.V. (VITO), Mol, Belgium.
- Meteotest Société Cooperative (METEOTEST), Bern, Switzerland.
- GISAT S.R.O. (GISAT), Praha, Czech Republic.
- Katholieke Universiteit Leuven (KU Leuven), Leuven, Belgium.
- Fundación Privada Instituto de Salud Global Barcelona (ISGlobal), Barcelona, Spain.
- Joanneum Research Forschungsgesellschaft MBH (JR), Graz, Austria.
- T6 Ecosystems SRL (T6ECO), Roma, Italy.
- Arctik SPRL (ARCTIK), Bruxelles, Belgium.
- STAD Antwerpen, Antwerpen, Belgium.
- Bikecityguide APPS GMBH (BikeCityGuide), Graz, Austria.
- Soprintendenza Speciale Colosseo MNR e Area Archeologica di Roma (SSColosseo), Roma, Italy.
- INES Energieplanung GMBH (INES), Bern, Switzerland.
- IURS - Institut Pro Udrzitelny Rozvoj Sidel ZS (IURS), Ostrava Poruba, Czech Republic.
- Universidade de Coimbra, Coimbra, Portugal.
- Department of Health (DH), Leeds, United Kingdom.

- Université Paris Ouest Nanterre La Defense (UPO), 199212044, Nanterre, France.
- Instituto Superior Tecnico (IST), Lisboa, Portugal.
- Universiteit Maastricht, Maastricht, Netherlands.
- University College London (UCL), London, United Kingdom.
- Karolinska Institutet (KI), Stockholm, Sweden.
- Beuth-Hochschule Fuer Technik Berlin, Berlin, Germany.
- Univerzita Karlova V Praze, Praha, Czech Republic.
- Ethniko Kai Kapodistriako Panepistimio Athinon (UoA), Athina, Greece.
- Consorzio per il Sistema Informativo (CSI Piemonte) IT4, Torino, Italy.
- Ekonomicka Univerzita V Bratislave (EUBA), Bratislava, Slovakia.
- Vrije Universiteit Brussel (VUB), Brussel, Belgium.
- Universitat Pompeu Fabra. Departament de Polítiques Públiques and Departament de Ciències Experimentals i de la Salut. Barcelona, Spain.
- Departamento de Salud del Gobierno Vasco. Vitoria, Spain.
- Departamento de Salud de la Comunidad de Madrid. Madrid, Spain.
- Escuela Andaluza de Salud Pública. Granada, Spain.
- IGOB. Barcelona, Spain.
- Universidad de Antioquia. Medellín, Colombia.

Active Grants

- Maica Rodríguez Sanz. Evolución de las desigualdades socioeconómicas y medioambientales en la distribución geográfica de la mortalidad en Barcelona (1996-2015): MEDEA3. PI16/00961. Instituto de Salud Carlos III. Duration: 2017-2021. 27,000 €.
- Marc Marí Dell'Olmo. Pobreza energética y salud desde múltiples perspectivas: análisis individual, geográfico y temporal. PI15/02006. Instituto de Salud Carlos III. Duration: 2016-2020. 84,150 €.
- Gloria Pérez Albarracín. Promoción de activos protectores de la violencia de género en la adolescencia y pre-adolescencia. PI18/00544. Instituto de Salud Carlos III. Duration: 2019-2021. 23,000 €.
- Carme Borrell Thió. PULSE. PULSE 2018-IR. Agència de Salut Pública de Barcelona. Duration: 2018-2021. 38,914.42 €.
- Carme Borrell Thió. PULSE. PULSE 2018-ASPB. Agència de Salut Pública de Barcelona. Duration: 2018-2021. 213,378.65 €.
- Marc Marí Dell'Olmo. Projecte PUCS (Pan-European Urban Climate Services). PUCS-IR. Agència de Salut Pública de Barcelona. Duration: 2018-2020. 37,916.70 €.
- Marc Marí Dell'Olmo. Projecte PUCS (Pan-European Urban Climate Services). PUCS-ASPB. Agència de Salut Pública de Barcelona. Duration: 2018-2020. 28,083.30 €.
- Carme Borrell Thió. Proyecto B-MINCOME. Convenio B-MINCOME. Agència de Salut Pública de Barcelona. Duration: 2018-2020. 228,269.76 €.
- Laura Oliveras Puig. Contratos Rio Hortega 2019. CM19/00184. Instituto de Salud Carlos III. Duration: 2020-2022. 53,732 €.
- Carme Borrell i Thió. Joint Action Health Equity Europe 801600 - JA-HI. European Commission. Duration: 2018-2021. 26,122.23 €.
- Marc Marí Dell'Olmo. Blue, Green & Grey_Adapting Schools to Climate Change From school vulnerable to heat to an open climate shelter for all the citizenship: implementation of blue, green and traditional solutions against heat in school equipments and CC consciousness. GBG_AS2C. Urban Innovation Action. Duration: 2018-2021. 238,000.80 €.

Carme Borrell participates in:

- Escenas culturales saludables: el carácter simbólico del contexto cultural y los estilos de vida saludables. Agencia Estatal de Investigación, convocatoria 2019 a «Proyectos de I+d+i» en el marco de los programas estatales de generación de conocimiento y fortalecimiento científico y tecnológico del sistema de I+d+i y de I+d+i orientada a los retos de la sociedad. PID2019-103853RA-I00. Public. Duration: 2020-2023. 86,272 €.
- Inequidades, clase social y salud. Una cartografía desde los modos de vida en ColombiaMinCiencias. INV 693-20. RC 423-2020-COLOMBIA. Public. Duration: 2020-2023. 156,000 €.
- Impacto en salud y bienestar de la vivienda cooperativa en cesión de uso. Instituto de Salud Carlos III. PI18/01761. Public. Duration: 2019-2021. 75,020 €.

Maribel Pasarín participates in:

- El problema de la no iniciación pediátrica: Evaluación con métodos mixtos. PFIS0270. Instituto de Salud Carlos III (ISCIII). Public. Duration: 2021-2022. 29,000 €.

Gloria Pérez participates in:

- Promoción de activos protectores de la violencia de género en la adolescencia y pre-adolescencia. PI18/00544. Instituto de Salud Carlos III. Subdirección General de Evaluación y Fomento de la Investigación y Fondos FEDER. Public. Duration: 2019-2021. 27,830 €.

Lucía Artazcoz participates in:

- Evaluación del impacto de las prestaciones sociales sobre la relación entre la trayectoria laboral y la mortalidad por causas en una cohorte de afiliados a la Seguridad Social en España (2004-2016). PI17/00220. Instituto de Salud Carlos III - cofinanciado por FEDER. Public. Duration: 2018-2020. 75,020 €.

Marc Marí participates in:

- Air pollution and birth outcomes: windows of exposure and health and economic impact assessment – the APBO project. APBO project. CIBERESP. Public. Duration: 2020-2021. 50,000 €.

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

Doctoral Theses

- Hugo Vásquez Vera. Inseguridad Residencial y su relación con la salud. Universitat Pompeu Fabra. Directors: Laia Palència, Carme Borrell. Date of defense: 06/02/2020
- Maria Salvador, Influencia de la Ley de Dependencia en las desigualdades en salud relacionadas con el trabajo de cuidados a familiares. Universitat Pompeu Fabra. Directors: Davide Malmusi, Carme Borrell. Date of defense: 17/02/2020
- Brenda Biaanhi. Desigualdad, opresiones de poder y salud reproductiva. O cómo las opresiones de poder generan desigualdades en la salud reproductiva de las mujeres. Universitat Pompeu Fabra. Directors: Glòria Perez, Mireia Jané. Date of defense: 08/10/2020
- Veronica Espinel. Socioeconomic inequalities in teenage motherhood in Ecuador #Niñas No Madres. Universitat Pompeu Fabra. Directors: Gemma Tarafa, Mercè Gotsens, Glòria Perez, Date of defense: 31/01/2020

Transfer Products

- Lucía Artazcoz, Elia Díez, Catherine Pérez. Barcelona Salut als Barris. Memòria 2019. 14/07/2020. https://www.aspb.cat/documents/barcelona-salut-als-barris-2019
- Elia Díez, Victoria Porthé. Prevenció comunitària del consum d'alcohol en persones adultes a Barcelona. 16/12/2020. https://www.aspb.cat/documents/salut-sexual-reproductiva-barcelona-2018
- Catherine Pérez, Lucía Artazcoz. Alimentació saludable i segura en la perspectiva d'un sistema alimentari sostenible. 30/10/2020. https://www.aspb.cat/documents/alimentacio-saludable-segura-sostenible
- Maribel Pasarín. Programa de revisió de menús escolars a la ciutat de Barcelona. Informe curs 2018-2019. 26/05/2020. https://www.aspb.cat/documents/programa-menus-escolars-curs-2018-2019
- Lucía Artazcoz, Maribel Pasarín, Catherine Pérez, Glòria Pérez. Violència masclista en l'àmbit de la parella des d'una perspectiva de salut pública: marc conceptual. 09/01/2020. https://www.aspb.cat/documents/marc-conceptual-violencia-masclista
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- Glòria Perez, Catherine Pérez, Lucía Artazcoz. La salut sexual i reproductiva 2018. 06/02/2020. https://www.aspb.cat/documents/salut-sexual-reproductiva-barcelona-2018
- Catherine Pérez, Lucía Artazcoz. Persones lesionades per trànsit ateses als serveis d'urgències a Barcelona, 2017-2018. 27/05/2020. https://www.aspb.cat/documents/persones-lesionades-transit-urgencies-barcelona-2018
- Imma Cortès. Indicadors de salut i treball de Barcelona. Any 2018. 22/07/2020. https://www.aspb.cat/documents/indicadors-salut-treball-2018
- Imma Cortès Treball al CAP. Prevenció de malalties relacionades amb el treball. Janyary-july 2020. https://www.aspb.cat/documents/butlletins/*/salut-i-treball/sistema-de-vigilancia-de-malalties-relacionades-amb-el-treball/*
- Marc Marí dell'Olmo. Avaluació de la qualitat de l'aire de Barcelona. Informe 2019. 19/10/2020. https://www.aspb.cat/documents/qualitat-aire-2019
- Carme Borrell. COVID-19, aprenentatges en qualitat de l'aire. 10/07/2020. https://www.aspb.cat/documents/covid19-aprenentatges-qualitat-aire
- Carme Borrell. L'impacte esperat de la Zones de Baixes Emissions (ZBE) Rondes Barcelona. 17/06/2020. https://www.aspb.cat/documents/impacte-zbe-rondes-barcelona
- Maica Rodríguez-Sanz. La recerca i la docència a l'Agència de Salut Pública de Barcelona. Memòria 2015-2018. 04/06/2020. https://www.aspb.cat/documents/recerca-docencia-aspb-2015-2018
- Marc-Marí Dell'Olmo. Declaració d'emergència climàtica informe de seguiment de l'emergència climàtica juliol 2020. 15/07/2020. https://www.barcelona.cat/barcelona-pel-clima/sites/default/files/emerg_clim_informe_juliol_16_07_201.pdf

Scientific Production

Total Impact Factor: 170.596 · Mean Impact Factor: 4.611

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Grupo Planter. Reinventando una organización de salud pública [Reinventing a public health organization]. Gac Sanit. 2020 Sep 21:S0213-9111(20)30150-3. Spanish. doi: 10.1016/j.gaceta.2020.06.011. Epub ahead of print. PMID: 32972781; PMCID: PMC7505624. **IF: 1.564**

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Other Publications

- Berra S, Rivadero L; Grupo IA-PCAT; Otros investigadores del Grupo IA-PCAT. [Linguistic acceptability in the comprehension of health services assessment questionnaires in Ibero-America]. GAC SANIT. 2020 Jul 9:S0213-9111(20)30123-0. doi: 10.1016/j.gaceta.2020.04.019. Online ahead of print.PMID: 32654875 Free article.
- Carrere J, Reyes A, Oliveras L, Fernández A, Peralta A, Novoa AM, Pérez K, Borrell C. The effects of cohousing model on people's health and wellbeing: a scoping review. PUBLIC HEALTH REV. 2020 Oct 6;41:22. doi: 10.1186/s40985-020-00138-1. eCollection 2020. PMID: 33042597 Free PMC article. Review.
- Oliveras L, Artazcoz L, Borrell C, Palència L, López MJ, Gotsens M, Peralta A, Marí-Dell'Olmo M. The association of energy poverty with health, health care utilisation and medication use in southern Europe. SSM POPUL HEALTH. 2020 Sep 10;12:100665. doi: 10.1016/j.ssmph.2020.100665. eCollection 2020 Dec. PMID: 33195789 Free PMC article.

Diffusion Activities

Dissemination to Society

- El Periódico. Opinion articles by Carme Borrell:
  - Vivienda cooperativa y calidad de vida. 30/12/2020
  - Mientras no se disponga de la vacuna, prevención. 13/10/2020
  - Hay que evaluar la respuesta a la pandemia de COVID-19. 09/08/2020
  - Los datos sobre la COVID-19. 10/06/2020
  - Desigualdades y COVID-19. 06/04/2020
  - Comunicación en salud pública: el caso del coronavirus. 18/02/2020
  - Arte y salud de la comunidad. 08/01/2020

AREA T1 · Epidemiology, Public Health and Healthcare Services

Primary Care Research

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Rayo Martínez, Elisabet (EAP Sardenya)
Sellares Sallas, Jaume (EAP Sardenya)
Serrano Pons, Helena (EAP Sardenya)
Vila Garcia, Judit (EAP Sardenya)
Vilella Moreno, Maria Teresa (IR)

Main Lines of Research

- Cardiovascular risk estimation.
- Health promotion in primary care settings.
- Ageing.
- Hypertension.
- Diabetes.
- Immunization.
- Determinants of post-COVID syndrome
- Technology (telemedicine).

Scientific Challenges

- Cooperate with other research teams at IIB Sant Pau.
- Cooperate with other European institutions in implementing projects on risk prevention and health promotion in primary care settings.
- Encourage research into medical ethics in family medicine training.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Clinical Epidemiology and Health Care Services.
- Evaluation of Public Health Policies and Programmes.
- Ageing Institute.
- Lipids and Cardiovascular Pathology Research, Sant Pau Hospital.
- Molecular Biology Laboratory, Fundació Puigvert.
- Agency of Public Health of Barcelona.

External Collaborations

- Ibermutua, Mutual insurance company collaborating with National Social Security.
- Cooperate with Mental Health research group, IMIM, Hospital del Mar.
- Spanish Society of Atherosclerosis.

Active Grants

- Diana Elizabeth Fernández Valverde. Avaluació de l'eficàcia de la telemedicina en la insuficiència cardíaca: programa @tendidos. ACADEMIA 2017. Acadèmia de Ciències Mèdiques. Duration: 2017-2020. 22,727.27 €.
- Carles Brotons Cuixart. Validación externa de una ecuación de riesgo cardiovascular de por vida. PI17/01031. Instituto de Salud Carlos III. Duration: 2018-2022. 41,000 €.

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

Awards

- Lluís Cuixart Costa, Montse Freixas Laporta, Silvia Zamora Mestre, Xavier Joaniquet Suils, Ester Parra Aresté, David Ginesta López. Descripció dels pacients diagnosticats de COVID-19 des de març fins a maig del 2020. Dades d'una pandèmia. Edició especial COVID. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1. Award Best COVID experiences in primary care CAMFIC 2020.
- Lluís Cuixart Costa, Nuria Sabaté Llaugé. Anàlisi de la prescripció d'antibiòtics durant la pandèmia de COVID-19. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1. Award Best COVID experiences in primary care CAMFIC 2020.
- Ester Parra Aresté, Lluís Cuixart Costa, Carme Campmajó Almodovar, Jordi Casino Anton, Lourdes Villanueva Ballesteros, Maria del Mar Barbero. Estudi descriptiu de les residències geriàtriques en una àrea bàsica urbana durant la pandèmia de la COVID-19. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1. Award Best COVID experiences in primary care CAMFIC 2020.
- Esther Parra Aresté, Lluís Cuixart Costa, Carme Campmajó Almodovar, Jordi Casino Antón, Lourdes Villanueva Ballesteros, Maria del Mar Barbero. Residències geriàtriques assignades a una unitat de geriatria d'un centre d'atenció primària urbà. Dades de mortalitat i derivacions hospitalàries. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1. Award Best COVID experiences in primary care CAMFIC 2020.

Scientific Production

Total Impact Factor: 14.027 · Mean Impact Factor: 2.805

Aguado A, García Del Álamo M. [Gastrointestinal comorbidity and symptoms associated with depression in patients aged over 60 years]. SEMERGEN. 2020 Jan-Feb;46(1):27-32. doi: 10.1016/j.semerg.2019.03.003. Epub 2019 May 16. PMID: 31105031. **IF: 0.404**

Aguado A, Moratalla-Navarro F, López-Simarro F, Moreno V. MorbiNet: Multimorbidity Networks in Adult General Population. Analysis of Type 2 Diabetes Mellitus Comorbidity. SCI REP 2020 Feb 12;10(1):2416. doi: 10.1038/s41598-020-59336-1. PMID: 32051506 PMCID: PMC7016191 DOI: 10.1038/s41598-020-59336-1 **IF: 3.998**

Brotons C. EUROPREV (Red Europea de Prevención y Promoción de la Salud) [EUROPREV (European Network for Prevention and Health Promotion)]. ATEN PRIMARIA. 2020 Nov;52 Suppl 2(Suppl 2):3-4. Spanish. doi: 10.1016/j.aprim.2020.07.005. PMID: 33388115; PMCID: PMC7801224. **IF: 1.087**

Montalescot G., Brotons C., Cosyns B., Crijns H.J., D'Angelo A., Drouet L., Eberli F., Lane D.A., Besse B., Chan A., Vicaut E., Darius H., Educational Impact on Apixaban Adherence in Atrial Fibrillation (the AEGEAN STUDY): A Randomized Clinical Trial (2020) AM J CARDIOVASC DRUG, 20 (1), 61-71. **IF: 2.6740**

Piepoli M.F., Abreu A., Albus C., Ambrosetti M., Brotons C., Catapano A.L., Corra U., Cosyns B., Deaton C., Graham I., Hoes A., Lochen M.-L., Matrone B., Redon J., Sattar N., Smulders Y., Tiberi M., Update on cardiovascular prevention in clinical practice: A position paper of the European Association of Preventive Cardiology of the European Society of Cardiology (2020) EUR J PREV CARDIOL, 27 (2), 181-205. **IF: 5.8640**

Other Publications

- Puig Palma, Mireia; Vilella Moreno, Teresa. La Infermera de Recerca. APSalut. Vol 8. Nr 4. Article 166. 10/12/2020. https://apsalut.cat/2020/12/10/la-infermera-de-recerca/
- Casasa Plana, Albert. Docència en temps de COVID-19. APSalut. Vol 8. Nr 2. Article 156. 10/6/2020. https://apsalut.cat/2020/06/10/docencia-en-temps-de-covid-19/
- Brotons, Carles; Fernández, Diana E. Els aliments i el risc cardiovascular. Fer Salut. Nr 102. November-December. www.fersalut.cat/2020/12/29/els-aliments-i-el-risc-cardiovascular/
- Chahboun El Messaoudi, Nariman; Uriach Timoneda, Violeta; Cuixart Costa, Lluís. Només he vingut per cefalea. APSalut. https://apsalut.cat/2020/10/18/nomes-he-vingut-per-cefalea/
- Planas, Ruth; Cuixart, Lluís. Dishidrosi. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss3/7
- Planas, Ruth; Cuixart, Lluís. Cucs. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss3/7
- Alonso Vallès, Lurdes; Díaz, Estela; De Ribot, Concepció; Zarza Carretero, Elvira; Duran, Ester; Cabré Vila, Joan Josep; Cuixart, Lluís; Badia Casas, Roger; Moreno Escribà, Sònia. Violència de gènere. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss2/7
- Alonso Vallès, Lurdes; Díaz, Estela; De Ribot, Concepció; Zarza Carretero, Elvira; Duran, Ester; Cabré Vila, Joan Josep; Cuixart, Lluís; Badia Casas, Roger; Moreno Escribà, Sònia. Violència de gènere. Agressions. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss2/8
- Bertran, Pepa; Cuixart, Lluís; Villafàfila, Rosa; Alonso Vallès, Lurdes; Planas, Ruth; Moreno Escribà, Sònia; Badia Casas, Roger; De Ribot, Concepció; Cabré Vila, Juan José. Trombosi venosa profunda - tromboembolisme pulmonar. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss2/10
- Romaguera, Montserrat; Puig, Jordi; Díaz, Estela; De Ribot, Concepció; Moreno Escribà, Sònia; Cuixart, Lluís; Cabré Vila, Joan Josep; Zarza Carretero, Elvira; Duran, Ester; Planas, Ruth; Badia Casas, Roger; Alonso Vallès, Lurdes. Recuperació després d'una malaltia o d'un confinament preventiu. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss2/11
- Puig, Jordi; Romaguera, Montserrat; Cuixart, Lluís; Zarza Carretero, Elvira; Alonso Vallès, Lurdes. Exercicis respiratoris Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss2/12
- Cuixart Costa, Lluís; Freixas Laporta, Montse; Zamora Mestre, Silvia; Joaniquet Suils, Xavier; Parra Aresté, Ester; Ginesta López, David. Descripció dels pacients diagnosticats de COVID-19 des de març fins a maig del 2020. Dades d'una pandèmia. Edició especial COVID Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1
- Cuixart Costa, Lluís; Sabaté Llaugé, Nuria. Anàlisi de la prescripció d'antibiòtics durant la pandèmia de COVID-19. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1
- Parra Aresté, Ester; Cuixart Costa, Lluís; Campmajó Almodovar, Carme; Casino Anton, Jordi; Villanueva Ballesteros, Lourdes; Barbero, Maria del Mar. Estudi descriptiu de les residències geriàtriques en una àrea bàsica urbana durant la pandèmia de la COVID-19. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1
- Parra Aresté, Esther; Cuixart Costa, Lluís; Campmajó Almodovar, Carme; Casino Antón, Jordi; Villanueva Ballesteros, Lourdes; Barbero, Maria del Mar. Residències geriàtriques assignades a una unitat de geriatria d'un centre d'atenció primària urbà. Dades de mortalitat i derivacions hospitalàries. Butlletí de l'atenció primària de la CAMFIC. http://www.butlleti.cat/ca/Vol38/iss4/1
- Armario P, Brotons C, Elosua R, Alonso de Leciñana M, Castro A, Clarà A, Cortés O, Díaz Rodríguez Á, Herranz M, Justo S, Lahoz C, Pedro-Botet J, Pérez Pérez A, Santamaria R, Tresserras R, Aznar Lain S, Royo-Bordonada MÁ. Comentario del CEIPV a la actualización de las Guías Europeas de Prevención Vascular en la Práctica Clínica [Statement of the Spanish Interdisciplinary Vascular Prevention

Committee on the updated European Cardiovascular Prevention Guidelines.]. REV ESP SALUD PUBLICA. 2020 Sep 11;94:e202009102. Spanish. PMID: 32915170 .

- Montenegro P, Brotons C, Serrano J, Fernández D, Garcia-Ramos C, Ichazo B, Lemaire J, Moral I, Wienese RP, Pitarch M, Puig M, Vilella MT, Sellarès J. Community seroprevalence of COVID-19 in probable and possible cases at primary health care centres in Spain. FAM PRACT. 2020 Sep 11:cmaa096. doi: 10.1093/fampra/cmaa096. Epub ahead of print. PMID: 32914857; PMCID: PMC7797756.

Diffusion Activities

Dissemination to Society

- Diana Fernández, Teresa Vilella. La telemedicina en pacients amb insuficiència cardíaca. Una experiència innovadora des del Centre d'Atenció Primària. Centre Cívic Guinardó. 25 February 2020.
- Dra. Peix. Cures en infants diabètics. Escola Marina. 11 February 2020.
- Dra, Palasí. La dieta mediterrània i hàbits de vida saludable. Escola Mas Casanovas. 27 February 2020.
- Dr. Lluís Cuixart. Insuficiència cardíaca. Grup de cuidadors professionals. EAP Dreta Eixample. 20 February 2020.

Scientific Diffusion (Congresses)

- Carles Brotons. El risc cardiovascular. Webinar 21è Simposi Fundació La Marató de TV3. Resultats dels projectes en malalties del cor impulsats per La Marató 2014. 18 June 2020.
- Irene Moral, Diana Elizabeth Fernández, Eva Calvo, Luis Quevedo, Carlos Brotons. Riesgo cardiovascular de por vida, una nueva herramienta para valorar el riesgo cardiovascular en adultos jóvenes. Poster. XXXX Congreso de la semFYC. Virtual, September 2020.
- Jara González, Irene Moral, Diana Elizabeth Fernández, Mariano de la Figuera, Carlos Brotons. ¿Estamos tratando adecuadamente con anticoagulantes orales a los pacientes con fibrilación auricular? Poster. XXXX Congreso de la semFYC. Virtual, September 2020.
- Carles Brotons. Transformació de la Unitat de Recerca en una Unitat de Salut Pública i Vigilància Epidemiològica. Webinar Experiències de transformació dels centres AP per la COVID 19, de la CAMFIC. 17 November 2020.
- Maria Cecilia, Lluís Cuixart, Daniel Planchuelo, Beatriz Jiménez, Narine Gharybian, Noa Chantada. Pressió arterial en temps de pandèmia. Oral communication. Jornades catalanes d'HTA 2020.
- Maria Cecilia. Lluís Cuixart, Daniel Planchuelo, Beatriz Jiménez, Narine Gharybian, Noa Chantada. Trucades telefòniques per mals controls tensionals: com s'han distribuït durant la pandèmia? Oral communication. Jornades catalanes d'HTA 2020.
- Esther Cordero Fernández, Violeta Uriach Timoneda, Neus Pérez Manyà, Anna Fuentes Lloveras, Lluís Cuixart Costa, María José Jiménez de Gaztañondo. Una "caja entrópica" en Atención Primaria; ¿hay diferencias entre estamentos en cuanto a la agresividad percibida?": XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Esther Cordero Fernández, Violeta Uriach Timoneda, Anna Fuentes Lloveras, Neus Pérez Manyà, Lluís Cuixart Costa, María José Jiménez De Gaztañondo."Una "caja entrópica" en Atención Primaria; la violencia hacia el personal sanitario. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Esther Cordero Fernández, Violeta Uriach Timoneda, Neus Pérez Manyà, Anna Fuentes Lloveras, María José Jiménez De Gaztañondo, Lluís Cuixart Costa. Una "caja entrópica" en Atención Primaria; ¿cómo son las agresiones al personal sanitario? XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Esther Cordero Fernández, Violeta Uriach Timoneda, Anna Fuentes Lloveras, Neus Pérez Manyà, Lluís Cuixart Costa, María José Jiménez De Gaztañondo. Una "caja entrópica" en Atención Primaria; perspectiva de genero sobre las agresiones hacia el personal sanitario. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- María José Jiménez De Gaztañondo, Juan Jose Gil Calvo, Esther Cordero Fernández. No era neumonía, era Silicio! XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Esther Cordero Fernández, Violeta Uriach Timoneda, Noa Chantada Lorenzo, Lluís Cuixart Costa. Caminante, hay camino; se hace al investigar. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Carla Cabrera Suárez, Lluís Cuixart Costa, Andrea Prados Martín, Nariman Chahboun El Messaoudi. Disnatremias crónicas, su relación con SCA y lesiones neurológicas. Poster. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.
- Nariman Chahboun El Messaoudi, Lluís Cuixart Costa, Carla Cabrera Suárez, Andrea Prados Martín. Hipertiroidismo subclínico, ese gran desconocido. Poster. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 de septiembre al 6 de octubre de 2020.
- Nariman Chahboun El Messaoudi, Lluís Cuixart Costa, Carla Cabrera Suárez, Andrea Prados Martín. Análisis de supervivencia en hipertiroidismo: aparición de fibrilación auricular. Poster. XL Congreso y 1º Virtual de la semFYC. Valencia, 15 September - 6 October 2020.

AREA T2

Molecular, Genomi Kinetic-Dynamic Ba and their Treatmen

270 Molecular Bases of Disease

272 Regenerative Medicine & Tissue Bioengineering

275 Clinical Research in Transfusion Medicine

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AREA T2 · Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

Molecular Bases of Disease

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Main Lines of Research

COVID-19

- Structural and functional analysis of the serine protease TMPRSS2 and its implications in SARS-COV-2.

Cancer

- Structural and functional analysis of the androgen receptor (AR). Design and structure-function characterization of AR homodimerization inhibitors.
- Analysis of mutations and SNPs that affect the TET2 gene and implications for hematopoietic and lymphoid neoplasms.

Neurodegenerative diseases

- Analysis of the structural bases of exon-7 exclusion from SMN2 and implications for the pathobiology of spinal muscular atrophy (SMA).
- Structural and functional investigations of the kinase, PINK1, and implications for Parkinson's disease.

Thrombosis and haemostasis

- Structural and functional investigations of blood coagulation factors, with emphasis on thrombin interactions with physiological substrates (factor VIII and protease-activated receptors).

Lipid metabolism and dyslipidaemias

- Bioinformatics analysis of STAP1 mutations identified in individuals with hypercholesterolemia.

Scientific Challenges

- Consolidate and extend research at the HSCSP Research Institute and the rest of the IIB Sant Pau within a context of limited access to financial support. To this end, the group needs to participate in at least one financed structure-and-function project in each of three major research areas (cardiovascular diseases, neurodegenerative diseases and cancer and innate immune responses).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Metabolic Bases of Cardiovascular Risk
- Parkinson Disease and Movement Disorders
- Haematological Diagnosis
- Genetic Diseases
- Molecular Physiology of the Synapse

External Collaborations

- Dra. Eva Estébanez-Perpiña, UBIB, Universitat de Barcelona
- Dr. Jun Xu, Sun Yat-Sen University, Guangzhou, China

Active Grants

- Pablo Fuentes Prior. A novel splicing therapeutic approach for Spinal Muscular Atrophy. Daniel Bravo 2015. Fundació Privada Daniel Bravo-Andreu. Duration: 2016-2020. 157,717 €.
- Pablo Fuentes Prior. Bases estructurales de las interacciones del receptor de andrógenos con ERG y modificadores epigenéticos: implicaciones para el desarrollo de nuevas estrategias terapéuticas. RTI2018-101500-B-100. Ministerio de Ciencia, Innovación y Universidades. Duration: 2019-2021. 120,000 €.
- Pablo Fuentes Prior. Grup d'investigació bases moleculars de processos fisiopatològics fonamentals. 2017 SGR 1089. Fundació Institut de Recerca Biomèdica (IRB Barcelona). Duration: 2017-2020. 8,400 €.

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

Scientific Production

Total Impact Factor: 4.238 · Mean Impact Factor: 4.238

Fuentes-Prior, P. Priming of SARS-CoV-2 S protein by several membrane-bound serine proteinases could explain enhanced viral infectivity and systemic COVID-19 infection. Journal of Biological Chemistry, Volume 296, 2020,100135. https://doi.org/10.1074/jbc.REV120.015980 **IF: 4.238**

Other Publications

- Rojas-Murcia, J., Arce-Solano, S., Fuentes-Prior, P., Hernández-Carvajal, E. Mutagénesis dirigida del conector interdominio ácido FVIIIa3 del factor VIII de la coagulación como estrategia para favorecer la cristalización de sus complejos con la trombina. (2019) REVISTA TECNOLOGIA EN MARCHA, 32(4), pp 39-50. https://doi.org/10.18845/tm.v32i4.4789

AREA T2 · Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

Regenerative Medicine & Tissue Bioengineering

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Bermudo Gascón, Raquel (BST)
Bofill Ródenas, Ana María (external entity)
Buitrago, Paola Andrea (BST)
Fariñas Barbera, Óscar (BST)
López Chicón, Patricia (BST)
Martínez Conesa, Eva María (BST)
Otero Areitio, Nausica (BST)
Riba Tietz, Tatiana (BST)
Tabera, Jaime (BST)
Vilarrodona Serrat, Anna (BST)

Main Lines of Research

- Tissue procurement, clinical application, ethics and regulation.
- Tissue decellularization approaches for clinical applications.
- Cell-based therapy for ocular diseases.
- 3D bioprinting and biocompatible substrates.
- Ex-vivo cell expansion for regenerative purposes.

Scientific Challenges

- Optimization and improvement of technical procedures related to the donor and tissues.
- Advances in the development of criteria, regulations and ethics for donor and tissues.
- Technical excellence related to processing cells, tissues and advanced therapies medical products (ATMP).
- The development of new approaches and ATMPs for regenerative medicine.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Ophthalmology (Dr. José Antonio Buil, Dra. Zoraida del Campo)
- Locomotor System Research (Dr. Pablo Gelber)
- Women and Perinatal Health Research Group (Dr. Josep Oriol Porta, Dra. Elisa Llurba)
- Genomics and Bioinformatics for Genetically Complex Disease (Dr. José Manuel Soria)
- Metabolic Bases of Cardiovascular Risk (Dr. Josep Julve)

External Collaborations

National Collaborations

- Department of Surgery, University of Barcelona
- Biophysics and Bioengineering Unit, University of Barcelona
- Institute for Bioengineering of Catalonia (IBEC)
- Center of Regenerative Medicine (CMR), Barcelona
- Center of Genomic Regulation (CRG), Barcelona
- Image Diagnostic Institute (IDI), Barcelona
- Vall d'Hebron Research Institute (VHIR)
- Advanced Therapies Committee, Hospital Clínic de Barcelona
- ICREC Group, Hospital Germans Trias i Pujol, Badalona
- Department of Cell Biology, UAB
- University of Ramon Llull, Institut Químic de Sarrià (IQS), Bioengineering Department
- University of Girona, Gilab Group of Research

International Collaborations

- National Health Service Blood and Tissue (Liverpool, UK)
- Veneto Eye and Multitissue Bank (Mestre-Treviso, Italy)
- Irish Blood and Tissue Bank (Dublin, Ireland)
- Croatia National Tissue Bank (Zagreb, Croatia)
- EFS-National Blood Service (Paris, France)
- European Homograft Bank (Brussel, Belgium)
- German Society for Tissue Transplantation (Hannover, Germany)
- Fondazione Banca dei Tessuti di Treviso (Treviso, Italy)

Active Grants

- Ricardo Pedro Casaroli Marano. Bioenginyeria de Teixits i Medicina Regenerativa. 2017 SGR 01113. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2021.
- Ricardo Pedro Casaroli Marano. Células pluripotentes inducidas y reprogramación celular en las aproximaciones de terapia basada en células para la regeneración de la córnea. PI18/00355. Instituto de Salud Carlos III. Duration: 2019-2021. 92,000 €.

- Esteve Trias. Good Practices for demonstrating safety and quality through recipient follow-up. Euro-GTP II. European Union's Health Programme (2014-2020). 709567-EuroGTP II-HP-PJ-2015. Duration: 2015-2019. 1,030,000 €.
- Nuria Nieto-Nicolau. Obtención de matriz nerviosa descelularizada para la regeneración de nervios periféricos. Banc de Sang i Teixits (BST). Covocatoria de Proyectos Internos 2017. I.2017.056. Duration: 2017-2020. 136,000 €.
- Anna Vilarrodona Serrat. Reducción de la lesión post-infarto mediante bioimplantes con capacidades reparadoras: hidrogeles biomiméticos y vesículas extracelulares para la medicina regenerativa cardíaca. Banc de Sang i Teixits (BST). Convocatoria de Proyectos Internos (Ref PEP BT0000000026). Duration: 2019-2021 76,683.36 €.
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Note: Total amount granted to PI. It does not include indirect costs.

Doctoral Theses

- Dinara Samarkanova. Umbilical Cord Blood Platelet Rich Plasma derivatives for therapeutic applications and development of clinical trials for treatment of skin and ocular ulcers. Universitat Autònoma de Barcelona. Directors: Sergi Querol, Ricardo P. Casaroli-Marano, Date of defense: 22/09/2020

Patents

- Canut MI, Casaroli-Marano R, Quantitative Genomic Medicine Laboratories. In vitro pharmacogenomic screening method for anticipating a patient's response to the treatment of ocular hypertension. EP3626836A1 (Application number 18195545.1), Patent, 25/03/2020

Transfer Products

- Programa Fundación redGDPS. Sesiones RedGDPS – La Degeneración Macular Asociada a la Edad (Casaroli-Marano RP). Programa Formativo Acreditado. Comisión de Formación Continuada del Sistema Nacional de Salud (SNS) and Bayer España, 2019. 31 July 2019 - 8 April 2020. https://sesiones.redgdps.org/ponentes/inicio

Scientific Production

Total Impact Factor: 74.747 · Mean Impact Factor: 3.114

Canamary Jr AM, Monteiro IR, Machado MKM, Regatieri CVS, Pereira Silva LM, Casaroli-Marano RP, Muccioli C. Quality-of-Life and psychosocial aspects in patients with ocular toxoplasmosis: A clinical study in a tertiary care hospital in Brazil. OCUL IMMUNOL INFLAMM. 2020;28(4):679-687. doi: 10.1080/09273948.2019.1612453. **IF: 2.367**

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- García-Medina JJ, Rubio-Velazquez E, Casaroli-Marano RP, Zenón-Moreno V, Pinazo-Duran MD, Foulquie-Moreno E, Del Rio-Vellosillo M. Antioxadant supplementation in diabetic retinopathy. In: Preedy VR, Edt. Oxidative Stress and Dietary Antioxidants (2nd Edition). Academic Press-Elsevier, New York, NY, USA. ISBN 9780128157763. Chapter 17, pp 169-182, 2020. doi.org/10.1016/B978-0-12-815776-3.00017-6.
- Korroch D, Casaroli-Marano RP. Ocular Tissue Banking. In: Manyalich M, Dominguez-Roldán JM (Editors). Transplant Procuremente Managemnet Manual (Fourth Edition). DTI Foundation. Barcelona. ISBN 9788409117529. Chapter 12-IV, Tissue Banking, pp 313-320, 2020.
- Salgado-Borges J, Vergés C, Borges CC, Casaroli-Marano R, Pinazo-Dúran MD. A importância da nutrição no olho saudável e com patología. DIGNUS. Revista Técnica de Geratría e Gerontología, CIE - Comunicação e Imprensa Especializada, Lda., Porto, Portugal. Numero 5, 4º trimestre, 2020 (www.dignus.pt), pp30-34. Depósito Legal: 461353/19, ISSN: 2184-6359

Diffusion Activities

Communications to Congresses

- Nieto-Nicolau, Martínez-Conesa EM, Velasco-García A, Aloy-Reverté C, Otero N, Tabera J, Fariñas O, Vilarrodona a, Casaroli-Marano RP. Towards a limbal stem cell xenofree GMP production in Eye Bank. 23rd Annual Meeting of the European Eye Bank Association (EEBA). Hanover (Germany), 16-18 January 2020.
- Marín-Martínez S, Miguel L, Batlle-Ferrando S, Navarro M, Pelegrín L, Alfoja S, Casaroli-Marano RP. Aflibercept en proliferación angiomatosa de la retina: Resultados en una cohorte no seleccionada y en un entorno real. XXIV Congreso de la Sociedad Española de Retina y Vítreo (SERV). Burgos (Spain). 6-7 March 2020.
- Miguel L, Batlle-Ferrando S, Marín-Martínez S, Navarro M, Pelegrín L, Alforja S, Casaroli-Marano RP. Tratamiento de la vasculopatía coroidea polipoidal con aflibercept: datos de eficacia a largo plazo en vida real. XXIV Congreso de la Sociedad Española de Retina y Vítreo (SERV). Burgos (Spain). 6-7 March 2020.
- Parrado-Carrillo A, Chamorro López L, Casaroli-Marano RP, Figueras-Roca M, Alforja S. Imagen multimodal para el estudio de los hallazgos retinianos en el Síndrome de Usher. XXIV Congreso de la Sociedad Española de Retina y Vítreo (SERV). Burgos (Spain), 6-7 March 2020.

Conferences

- Fariñas O. BST, presente y futuro. 19º Curso de Donación y Trasplante de Órganos y Tejidos - El Proceso de Donación y Trasplante de Órganos y Tejidos. Hospital Vall d'Hebron. Barcelona (Spain), 4-6 March 2020.
- Vilarrodona A. La visión del trasplantador: El trasplante de tejidos. IV Curso Sobre la Prevención de Transmisión de Enfermedades y Control de Riesgos en la Donación y Trasplante de Órganos y Tejidos. Departament de Salut - Generalitat Catalunya. Barcelona (Spain). 11-12 February 2020.
- Vilarrodona A. Experiences from tissue establishments in different countries – Spain. Webinar Tissue donation from deceased donors during the COVID-19 pandemic. European Directorate for the Quality of Medicines & HealthCare, Council of Europe. Strasbourg (virtual), 28 April 2020.
- Casaroli-Marano RP. DMAE: Degeneración Macular Asociada a la Edad. ¿Estamos satisfechos con los resultados que obtenemos? READYT 2020, V Cumbre de Expertos en Retina. Madrid (Spain). 7 February 2020.
- Casaroli-Marano RP. Salud Ocular Comunitaria: Enfermedades Tropicales Desatendidas (ETD). XXXIII Curso Monográfico de Iniciación a la Oftalmología. Instituto de Investigaciones Oftalmológicas "Ramón Castroviejo". Madrid (Spain). 27 February 2020.
- Casaroli-Marano RP. EYE: Incoming technologies and transplantation. 12nd International Course on Tissue Banking and Advanced Therapies, Barcelona (Spain). 9 June 2020.

Courses

- Degeneración Macular Asociada a la Edad (DMAE) exudativa. 96 Congreso de la Sociedad Española de Oftalmología (SEO) - I Congreso Virtual, Curso C24. 25 September 2020.
- Terapia Intravítrea: Contada tal cual es! OftaRed & Aula Clinic (Hospital Clínic de Barcelona). Barcelona (Spain). 11 December 2020.

AREA T2 · Molecular, Genomic, Cellular and Kinetic-Dynamic Bases for Diseases and their Treatment

Clinical Research in Transfusion Medicine

Coordinator
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Members
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Ene, Gabriela Simona (BST)
Ferrer Garrido, Gonzalo J. (BST)
Medina Marrero, Laura (BST)
Olivera Sumire, Pavel Eduardo (BST)
Saez Bruguera, Montserrat (BST)

Main Lines of Research

- Antithrombotic therapy.
- Thrombotic pathology and cardiovascular risk.
- Platelets and bleeding disorders.
- Clinical transfusion and adverse events.
- Patient blood management.
- Systems supporting safe transfusion.
- Blood products: quality management /overall quality, regulatory knowledge and improved patient safety.
- Cellular therapies.
- Enlightening studies in therapeutic apheresis: therapeutic plasma exchange, cell exchange, extracorporeal photopheresis, LDL-apheresis, and therapeutic cytapheresis.

Scientific Challenges

- Enhance cooperation with other groups within the framework of transfusion and cellular therapy research.
- Progress as a productive translational research group in the field of blood transfusion and cellular therapy.
- Analyse the effective use of blood transfusion and the main causes of its variability.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Silvia Vidal. Epidemiology and Public Health Service (Massive Hemorrage and Massive Transfusion Team with Anaesthesiology service). Experimental immunology. Regulation of the immune response by the eltrombopag-induced binding of platelets to circulating leukocytes. IIBSP-ITP-2018-65. Institut de Recerca, Hospital de la Santa Creu i Sant Pau.

External Collaborations

Collaboration in Clinical Trials and Observational Studies

- Pável Olivera. Xarelto + Acetylsalicylic Acid: Treatment patterns and Outcomes across the disease Continuum in patients with Coronary Artery Disease (CAD) and/or PAD. BAY-RIV-2020-01 XATOC Study.
- Pável Olivera. RE-BELD Study. Non-Interventional, cross-sectional study to describe NOACs management in elderly patients with non-valvular atrial fibrillation (NVAF) in Spain. Protocol 1160-0297.
- Pável Olivera. Regulation of the immune response by the eltrombopag-induced binding of platelets to circulating leukocytes. IIB-SP-ITP-2018-65
- Pável Olivera. Registro informatizado de pacientes con enfermedad tromboembólica (RIETE). Since September 2018.
- Pável Olivera. Registro de eventos tromboembólicos y hemorrágicos en pacientes COVID-19. Registro ACO-VID.
- Pável Olivera. Estudios de Biología Molecular usando técnicas de secuenciación de nueva generación (next generation sequencing) para evaluar posibles causas de refractariedad al tratamiento con Eltrombopag (Revolade®) en pacientes adultos con trombocitopenia inmune primaria (PTI) en la práctica clínica habitual.
- M. Alba Bosch, Gonzalo Ferrer. Catalonian Blood Transfusion Epidemiology Study Group. Prospective, cross-sectional epidemiology study of blood transfusion in Catalonia, to analyze where the blood goes and why.

Scientific Production

Total Impact Factor: 13.499 · Mean Impact Factor: 3.375

Bueno, J L; Alegre, A; López-Villar, O; Querol, S; Arroyo, J L; Goterris, R; Sureda, A; García-Gala, J M; Amunarriz, C; Albo, C; Fernández-Fuertes, F; Medina, L; Antelo, M L; Blanquer, M; Vallejo, C; Canales, M; Vidales-Mancha, I; Duarte, R F. Agreements and uncertainties in autologous haematopoietic stem cell mobilization and collection. A Spanish consensus document. Bone Marrow Transplantation. 2020 Apr;55(4):811-817. **IF: 4.725**

Muñiz-Diaz, E; Llopis, J; Parra, R; Roig, I; Ferrer, G; Grifols, J; Millán, A; Ene, G; Ramiro, L; Maglio, L; García, N; Pinacho, A; Jaramillo, A; Peró, A; Artaza,

G; Vallés, R; Sauleda, S; Puig, L; Contreras, E. Relationship between the ABO blood group and COVID-19 susceptibility, severity and mortality in two cohorts of patients. Blood Transfusion 2020; DOI 10.2450/2020.0256-20. **IF: 3.662**

González-López TJ, Sánchez-González B, Jarque I, Bernat S, Fernández-Fuertes F, Caparrós I, Soto I, Fernández-Rodríguez A, Bolaños E, Pérez-Rus G, Pascual C, Hernández-Rivas JA, López Ansoar E, Gómez-Nuñez M, Martínez-Robles V, Olivera P, Yera Cobo M, Peñarrubia MJ, Fernández-Miñano C, de Cabo E, Martínez Badas MP, Perdomo G, García-Frade LJ. Use of eltrombopag for patients 65 years old or older with immune thrombocytopenia. Eur J Haematol. 2020 Mar;104(3):259-270. doi: 10.1111/ejh.13370. Epub 2020 Feb 3. PMID: 31840311. **IF: 2.220**

Fernández-Capitán C, Barba R, Díaz-Pedroche MDC, Sigüenza P, Demelo-Rodriguez P, Siniscalchi C, Pedrajas JM, Farfán-Sedano AI, Olivera PE, Gómez-Cuervo C, Llamas P, Villares P, Sanchez O, López-Reyes R, Catella J, Bikdeli B, Weinberg I, Tafur AJ, Jiménez D, Monreal M. Presenting Characteristics, Treatment Patterns, and Outcomes among Patients with Venous Thromboembolism during Hospitalization for COVID-19. Semin Thromb Hemost. 2020 Oct 21. doi: 10.1055/s-0040-1718402. PMID: 33086403. **IF: 2.892**

Other Publications

- Villanueva, O; Herranz, MJ; Olivera, P. Cytoplasmic crystal inclusions in lymphocytes of chronic lymphocytic leukemia. eJHaem 2020; 1:416-417. DOI: 10.1002/jha2.118

Diffusion Activities

Communications to Congresses

- G Ferrer, M Saez, I Garcia-Cadenas, A Esquirol, R Martino, M Roca, R Santaeugenia, A Arellano, C Samsó, C Dalmau, A Bosch, L Medina. Success of daratumumab as treatment for pure red cell aplasia (PRCA) after major ABO mismatched allogeneic hematopoietic stem cell transplantation. PRCA cases review and treatment comparison. 36th Congress of the International Society of Blood Transfusions (ISBT), 12-16 December 2020.
- C Requeijo, X Bonfill, G Ferrer, A Arellano, C Dalmau, L Medina, I Gich, E Carreras, A Bosch. Analysis of the appropriateness of red blood cell transfusion in hospitalized patients in a tertiary hospital in Barcelona. 36th Congress of the International Society of Blood Transfusions (ISBT), 12-16 December 2020.
- M Subirà, G Ferrer, L Ramiro, MM Pujol, V Callao, A Pereira, MA Bosch, E Contreras on behalf of the Catalonian Blood Transfusion Epidemiology Study Group. Epidemiology of blood transfusion in Catalonia ten years later. What's new?. 36th Congress of the International Society of Blood Transfusions (ISBT), 12-16 December 2020.
- G Ene, MC Raya, P Carrasco, A Carpi, N Tamayo, L Edo, I Sanchez, A Villauvi, N Palo, A Bolivar, P Sanchez, M López, MA Bosch. Classification of transfusion reactions in a 500 hundred beds secondary hospital in Spain. 36th Congress of the International Society of Blood Transfusions (ISBT), 12-16 December 2020.
- S Torrents, L Alonso, J Vives, L Rodríguez, G Morón-Cazalilla, I Elorza, L Uria, R Parody, G Orti, A Esquirol, J Fernández-Sojo, M Codinach, L Medina, I Badell, C Díaz Heredia, S Querol. Good response rates of WJ-MSC, comparable to BM-MSC, in the treatment of refractory GVHD. A136 ePoster. 46th EBMT Congress. 29 August 2020.
- D Campoy, K Flores, G Artaza, C A Velásquez, T Canals, E Johansson, A Peró, J Sierra, R Salinas, P E Olivera. Management of Secondary Prevention in Venous Thromboembolism: Use of Reduced Doses of Rivaroxaban and Apixaban in Extended Therapy. Blood (2020) 136 (Supplement 1): 16-17. https://doi.org/10.1182/blood-2020-141908
- PE Olivera, D Campoy, CA Velásquez, K Flores, T Canals, E Johansson, L Martínez, J Sierra, JJ Cerezo, R Salinas. Edoxaban Vs. Low Molecular Weight Heparin as Anticoagulant Therapy in Hospitalized Patients with Atrial Fibrillation and COVID-19 Infection. Blood (2020) 136 (Supplement 1): 22-23. https://doi.org/10.1182/blood-2020-143065

Scientific Diffusion

- R Duarte, S Sauleda, L Puig, MA Bosch. Convalescent Plasma and COVID-19. Scientific session at Acadèmia de Ciències Mèdiques de Catalunya i Balears (ACMCB) and Catalan-Balear Blood Transfusion Society (SCBTS), Barcelona, 24 November 2020.
- MA Bosch. O Negative Blood: recommendations for their correct use in blood shortage periods. Session and hospital talks to the clinicians and emergency services. Hospital del Mar. Barcelona. January-February 2020.
- G Ferrer. Indicadors de la transfusió: Unitats rebutjades per causes diferents a la caducitat. Comissió Transversal de Transfusió. Blood and Tissue Bank. Barcelona. 3 November 2020.
- G Ferrer. Incidències catèters anys 2018-2019. Grup de treball de catèters, Hospital de la Santa Creu i Sant Pau. Barcelona. June, 2020.
- L Medina. Curso Manejo de los trastornos de la hemostasia asociados al sangrado masivo. IV Edición. Activity accredited by the Consell Català de la Formació Continuada de les Professions Sanitàries-Comisión de Formación Continuada del Sistema Nacional de Salud. Hospital de la Santa Creu i Sant Pau. Barcelona, 14-15 February 2020.
- L Medina. Nou circuit d'extracció de mostres de sang per a reserves quirúrgiques d'acord amb les mesures de prevenció de la COVID-19. Comissió de Transfusions de l'Hospital de la Santa Creu i Sant Pau. Barcelona, 25 November 2020.
- P Olivera. Speaker. Cardio TV Online of the Spanish Society of Cardiology. Complicaciones Tromboembólicas relacionadas con COVID-19. 9 June 2020.
- P Olivera. Speaker. Webinar of the Spanish Society of Thrombosis and Haemostasis: Pacientes Anticoagulados con Fibrilación Auricular. 8 July 2020.
- P Olivera. LXII National Meeting of Spanish Society of Hematology and hemotherapy (SEHH) and XXXVI National Meeting of Society of Thrombosis and Haemostasis (SETH). Virtual Meeting, Spain, October 2020.

Training Activity

- Pável Olivera (Director). Curso de formación Online: Manejo Personalizado del Tratamiento Antitrombótico. Acercando la evidencia científica a la práctica clínica, 1º Edición: 20/05/2019-20/05/2020. https://doctopedia.es/course/proximo-curso-manejo-personalizado-del-tratamiento-antitrombotico-modulo-1/
- Pável Olivera (Director). E-Taller. Retos actuales del paciente anticoagulado en época COVID-19.
- Pável Olivera (Director). E-Taller. Actualización del tratamiento antitrombótico en el paciente con fibrilación auricular.
- Pável Olivera (Director). E-Taller. Actualización del tratamiento antitrombótico durante la situación COVID-19.
- Pável Olivera (Director). Sesiones Express con Hematología. Manejo antitrombótico durante la situación COVID-19.
- Pável Olivera (Director). E-Taller. Compartiendo la práctica clínica real del paciente anticoagulado.

Associated Groups

280 Emerging Processes in Prevalent Diseases

282 Radiophysics and Radioprotection

284 Paediatrics

290 Ophthalmology

291 Nuclear Medicine

294 Intensive Medicine

297 Pharmacy

301 Dermatology

303 Anaesthesiology

306 Plastic Surgery

308 Palliative Care

310 Andrology

313 Urology

320 Radiation Oncology

323 Locomotor System Research

325 Pain and Neurosciences

327 Nursing Care Research

330 Reproductive Health

332 Cardiac Surgery

Associated Groups

Emerging Processes in Prevalent Diseases

Coordinator
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Blázquez Andión, Marta (FGS)
Caballero Flores, Francisco (FGS)
Ceresuela Lobera, Andrés (FGS)
Díez Díez, Verónica (FGS)
Fernández Castaño, Irene (FGS)
Gil Olivas, Eva (FGS)
Guardiola Tey, José María (FGS)
Hernández Ontiveros, Héctor (FGS)
Herrera Mateo, Sergio Antonio (FGS)
Higa Sansone, Jorge Leopoldo (FGS)
Jiménez Calderon, Rut (FGS)
Lazzari, Roberto (FGS)
López Matas, Mara (FGS)
Lozano Polo, Laura (FGS)
Mateo Roca, Miriam (FGS)
Mauri Plana, Albert (FGS)
Moliné Pareja, Antoni (FGS)
Montiel Dacosta, Josep Antoni (FGS)
Moreno Pinillos, Rosa (FGS)
Mur Arizon, Isabel (IR)
Piera Salmeron, Aina (FGS)
Ris Romeu, Josep (FGS)
Rizzi, Miguel Alberto (FGS)
Romero Carrete, Carlos José (FGS)
Santaló Bel, Miguel (FGS)
Seres Roig, Montserrat (FGS)
Trejo Gutiérrez, Olga Maria (FGS)
Turbau Valls, Miquel (FGS)

Main Lines of Research

Emerging processes in prevalent diseases

- Study and analysis of processes frequently observed in emergency departments so as to transfer the results to clinical practice and provide better care to patients.

Clinical organization and management (Mireia Puig and Josep Ris)

- Patient safety and emergency service quality. PI: Maite Álvarez.
- Nosocomial infection. PI: Albert Mauri.
- Short-stay unit. PI: J. M. Guardiola.
- Undergraduate teaching. PI: J. A. Montiel.

Organ donation and coordination (Francisco Caballero and Jesús Leal)

Respiratory system disorders (Antoni Moliné)

- Acute respiratory failure. PI: A. Moliné.
- Ventilatory pattern analysis in heart failure. PI: Sergio Herrera.
- Pneumonia in the emergency department. PI: Míriam Mateo.
- Noninvasive ventilation. PI: Miquel Turbau.
- Pulmonary embolism. PI: Laura Lozano.

Cardiovascular system (Miquel Santaló)

- Acute coronary syndrome PI: Roberto Lazzari.
- Acute coronary syndrome in women. PI: Marta Blázquez.
- Ultrasensitive markers in acute coronary syndrome. PI: Aitor Alquézar.
- Cardiac failure. PI: Miguel Rizzi.
- Supraventricular arrhythmias. PI: Olga Trejo.

Community disorders

- Diabetes care in emergency departments. PI: Iván Agra.
- Infection in emergency departments. PI: J. M.Guardiola.
- Sepsis syndrome. PI: Mara López.
- Elderly patients. PI: Leopoldo Higa.
- Sexually transmitted diseases. PI: Montse Seres.
- Haematological diseases. PI: Marta Blázquez.

Active Grants

- Mireia Puig Campmany. Nueva área de Urgencias para ancianos frágiles creada en el marco de un Programa de Atención Geriátrica del Servicio: Evaluación de la experiencia del paciente. QUIRONSALUD 2018. Quironsalud. Duration: 2019-2020. 10,000 €.

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

Awards

- BIC Award 2020 to the Best Patient Care Service (Emergency).
- Geriatric Emergency Department Accreditation (GEDA) by the American College of Emergency Physicians (ACEP).

Scientific Production

Total Impact Factor: 69.802 · Mean Impact Factor: 3.490

Alquezar-Arbe A., Pinera P., Jacob J., Martin A., Jimenez S., Llorens P., Martin-Sanchez F.J., Burillo-Putze G., Garcia-Lamberechts E.J., Del Castillo J.G., Rizzi M., Villa T.A., Haro A., Diaz N.M., Miro O., Impact of the COVID-19 pandemic on hospital emergency departments: Results of a survey of departments in 2020 - The Spanish encovur study Impacto organizativo de la pandemia COVID-19 de 2020 en los servicios de urgencias hospitalarios Españoles: Resultados del estudio encovur (2020) EMERGENCIAS, 32 (5), 320-331. **IF: 3.1730**

Berenguer J., Ryan P., Rodriguez-Bano J., Jarrin I., Carratala J., Pachon J., Yllescas M., Arribas J.R., Aznar Munoz E., Pedro Gil Divasson P., Patricia Gonzalez Muniz P., Clara Munoz Aguirre C., Lopez J.C., Ramirez-Schacke M., et al. Characteristics and predictors of death among 4035 consecutively hospitalized patients with COVID-19 in Spain (2020) CLIN MICROBIOL INFEC, 26 (11), 1525-1536. **IF: 7.1170**

Domingo P., Mur I., Pomar V., Corominas H., Casademont J., de Benito N., The four horsemen of a viral Apocalypse: The pathogenesis of SARS-CoV-2 infection (COVID-19) (2020) EBIOMEDICINE, 58. **IF: 5.7360**

El Amrani A., Campos B., Alonso-Martin C., Guerra-Ramos J.M., Rodriguez-Font E., Moreno-Weidmann Z., Alcalde-Rodriguez O., Mendez-Zurita F.J., Santalo M., Espinosa-Viamonte H., Vinolas X., Performance of the Micra cardiac pacemaker in nonagenarians Rendimiento del marcapasos cardiaco Micra en nonagenarios (2020) REV ESP CARDIOL, 73 (4), 307-312. **IF: 4.6420**

Escalada X, Sánchez P, Hernández R, Gené E, Jacob J, Alonso G, Rimbau P, Zorrilla J, Casarramona F, Netto C, Flores S, Puig M, Villamor A, Sánchez M, Miró O. Estudio SEPHCAT: análisis de los servicios de emergencias prehospitalarios en Cataluña. EMERGENCIAS 2020;32:90-96. **IF: 3.173**

Jimenez Hernandez S., Lozano Polo L., Sunen Cuquerella G., Pena Pardo B., Espinosa B., Cardozo C., Aguirre Tejedo A., Llorens Soriano P., Miro O., Clinical findings, risk factors, and final outcome in patients diagnosed with pulmonary thromboembolism and COVID-19 in hospital emergency departments Características clínicas, factores de riesgo y resultados finales de pacientes con COVID-19 diagnosticados de tromboembolia de pulmón en urgencias (2020) EMERGENCIAS, 32 (4), 253-257. **IF: 3.1730**

Llauger L., Jacob J., Moreno L.A., Aguirre A., Martin-Mojarro E., Romero-Carrete J.C., Martinez-Nadal G., Tost J., Corominas-Lasalle G., Roset A., Cardozo C., Sunen-Cuquerella G., Alarcon B., Herrera-Mateo S., Ruibal J.C., Alquezar-Arbe A., Gil V., Donea R., Berenguer M., Llorens P., Villanueva-Cutillas B., Martin-Sanchez F.J., Herrero P., Miro O., Worsening renal function during an episode of acute heart failure and its relation to short-and long-term mortality: Associated factors in the epidemiology of acute heart failure in emergency departments– worsening renal function study Factores asociados con el empeoramiento de la función renal durante un episodio de insuficiencia cardiaca aguda y su relación con la mortalidad a corto y largo plazo: Estudio eahfe-efrica (2020) EMERGENCIAS, 32 (5), 332-339. **IF: 3.1730**

Martin-Sanchez F.J., Llopis Garcia G., Gonzalez-Colaco Harmand M., Fernandez Perez C., Gonzalez del Castillo J., Llorens P., Herrero P., Jacob J., Gil V., Dominguez-Rodriguez A., Rossello X., Miro O., Adrada E.R., et al. Identification of Senior At Risk scale predicts 30-day mortality among older patients with acute heart failure La escala Identification of Senior at Risk predice la mortalidad a los 30 días en los pacientes mayores con insuficiencia cardiaca aguda (2020) MED INTENSIVA, 44 (1), 9-17. **IF: 2.3630**

Medina-Catalan D., Ruiz-Ramos J., Juanes-Borrego A., Herrera S.A., Puig M., Antonia Mangues-Bafalluy M., Factors associated with inappropriate intravenous antibiotic prescription in patients discharged from the emergency department (2020) J CLIN PHARM THER, 45 (5), 1149-1152. **IF: 1.8330**

Miro O., Takagi K., Gayat E., Gil V., Llorens P., Martin-Sanchez F.J., Jacob J., Herrero-Puente P., Escoda R., Pilar Lopez-Diez M., Valero A., Fuentes M., Garrido J.M., Salvo E., Rizzi M.A., Aguirre A., Traveria Becquer L., Dominguez-Rodriguez A., Padrosa J., Martinez G., Arrigo M., Freund Y., Mebazaa A., Time-pattern of adverse outcomes after an infection-triggered acute heart failure decompensation and the influence of early antibiotic administration and hospitalisation: results of the PAPRICA-3 study (2020) CLIN RES CARDIOL, 109 (1), 34-45. **IF: 5.2680**

Miro O., Lopez-Diez M.P., Cardozo C., Moreno L.A., Gil V., Jacob J., Herrero P., Llorens P., Escoda R., Richard F., Alquezar-Arbe A., Masip J., Garcia-Alvarez A., Martin-Sanchez F.J., Impact of hospital and emergency department structural and organizational characteristics on outcomes of acute heart failure Impacto de las características estructurales y organizativas hospitalarias y de urgencias en el resultado evolutivo de la insuficiencia cardiaca aguda (2020) REV ESP CARDIOL. **IF: 4.6420**

Plaza Díaz A, Ruiz Ramos J, Juanes Borrego AM, Blázquez Andión M, Puig Campmany M, Mangues Bafalluy MA. Carga anticolinérgica en pacientes atendidos por estreñimiento en un servicio de urgencias. EMERGENCIAS 2020;32:349-352. **IF: 3.173**

Puig Campmany M, Blázquez Andión M, Ris Romeu J. Aprender, desaprender y reaprender para asistir ancianos en urgencias: el secreto del cambio. EMERGENCIAS 2020;32:122-130. **IF: 3.173**

Rizzi M.A., Sarasola A.G., Arbe A.A., Mateo S.H., Gil V., Llorens P., Jacob J., Martin-Sanchez F.J., Puente P.H., Escoda R., Espinosa B., Roset A., Torres-Garate R., Torres-Murillo J., Mecina A.B., Lopez-Diez M.P., Perez J.M.A., et al. Factors associated with in-hospital mortality and adverse outcomes during the vulnerable post-discharge phase after the first episode of acute heart failure: results of the NOVICA-2 study (2020) CLIN RES CARDIOL. **IF: 5.2680**

Roset A., Jacob J., Herrero-Puente P., Alquezar A., Martin-Sanchez F.J., Llorens P., Gil V., Cabello I., Richard F., Garrido J.M., Gil C., Llauger L., Wussler D., Mueller C., Miro O., Fuentes M., Gil C., Alonso H., Garmila P., et al. High-sensitivity cardiac troponin T 30 days all-come mortality in patients with acute heart failure. A Propensity Score-Matching Analysis Based on the EAHFE Registry. TROPICA4 Study (2020) EUR J CLIN INVEST, 50 (6). **IF: 3.4810**

Ruiz J., Lopez-Vinardell L., Juanes A., Riera-Magallon A., Puig M., Mangues M.A., Risk factors for emergency department revisit in elderly patients with gastrointestinal bleeding secondary to anticoagulant therapy (2020) EUR J HOSP PHARM-S P. **IF: 0.8920**

Ruiz Ramos J., Juanes Borrego A.M., Blazquez Andion M., Mangues Bafalluy M.A., Puig Campmany M., Elderly People With Drug-Related Problems Identified in the Emergency Department: Impact of Therapeutic Complexity on Consultations to the Health System (2020) SAGE OPEN, 10 (2). **IF: 0.7150**

Sanchez A., Benito N., Rivera A., Garcia L., Miro E., Mur I., Gonzalez Y., Gutierrez C., Horcajada J.P., Espinal P., Navarro F., Pathogenesis of Staphylococcus epidermidis in prosthetic joint infections: can identification of virulence genes differentiate between infecting and commensal strains? (2020) J HOSP INFECT, 105 (3), 561-568. **IF: 3.2710**

Velilla Moliner J., Gros Baneres B., Povar Marco J., Santalo Bel M., Ordonez Llanos J., Martin Martin A., Temboury Ruiz F., Diagnostic performance of high sensitive troponin in non-ST elevation acute coronary syndrome Rendimiento diagnóstico de la troponina de alta sensibilidad en el síndrome coronario agudo sin elevación del segmento ST (2020) MED INTENSIVA, 44 (2), 88-95. **IF: 2.3630**

Yuguero-Torres O, López MJ, Cortés E, Boqué C, Navarra M, Jiménez S. Registro MORCAT: descripción de la sedación paliativa y la mortalidad en los servicios de urgencias. EMERGENCIAS 2020;32:118-121. **IF: 3.173**

Other Publications

- Campillo B, Corbella J, Gelpi M, Martinez E, Viciana MA, Montiel J, Abós E, Callejón S, Alonso M. Percepción del respeto y mantenimiento de la dignidad en pacientes hospitalizados. ACTA BIOETHICA 2020; 26 (1): 61-72.

Books or Chapters with ISBN

- Mateo M, Agra I, Díez V. Chapter 27: Criterios de solicitud de exploraciones complementarias en el dolor a nivel raquídeo ¿Cuándo y cuáles? In: Manual de Tratamiento del Dolor, 4a edición. ISBN: 978-84-9926-842-2

Associated Groups

Radiophysics and Radioprotection

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Delgado Tapia, Paula (FGS)
Gallego Franco, Pedro (FGS)
Jornet Sala, Nuria (FGS)
Latorre Musoll, Arthur (FGS)
Pallerol Pinzano, Rosa M. (FGS)
Pérez-Alija Fernández, Jaime (FGS)
Ruiz Martínez, Agustín (FGS)

Main Lines of Research

External beam radiotherapy

- Characterization of various in vivo dose measurement detectors for radiation therapy treatments with intensity modulation (IMRT, VMAT).
- Validation of dose calculation algorithms for external beam radiotherapy planning systems.
- Automation of radiotherapy quality assurance.
- Optimization of QA procedures for IMRT, VMAT, stereotactic body radiation therapy (SBRT) and respiratory gating treatments.
- Quantitative imaging analytics for predictive modelling of cardiac and skin toxicity after breast radiotherapy.
- Artificial intelligence in radiotherapy.

Collaborations

External Collaborations

- Institut de Tècniques Energètiques de Catalunya (INTE), UPC. Ongoing research and knowledge transfer projects: development of thermoluminiscence in vivo dosimetry for external beam radiotherapy use. Application of the Monte Carlo simulation method for radiation transport in a clinical environment and especially for testing and improving treatment planning systems algorithms used in external beam radiation therapy.
- Conveni Servei RFRP (HSCSP) i empresa Sun Nuclear (EEUU). El servei és Centre de referència de la plataforma de gestiò de qualitat SunCheck. Implementar plataforma SunCHECK™, sistema integrat i automàtic per a la gestió de qualitat en el procés de Radioteràpia (inclou màquines i pacients). Montserrat Ribas, Nuria Jornet (Director projecte), Pablo Carrasco, Pedro Gallego, Jaime Pérez-Allija, Artur Latorre, Agustí Ruíz, Paula Delgado, Mar Adrià, P.Itziar Valverde, Marta Barceló, Nagore García. 2019-2022.
- Dr. Barquinero, Montserrat Ribas, Pablo Carrasco (UAB). Estudio del daño genético inicial inducido por las radiaciones ionizantes. Evaluación de su aplicabilidad como biomarcador de radiosensibilidad. Consejo de Seguridad Nuclear (CSN).

Scientific Production

Total Impact Factor: 23.125 · Mean Impact Factor: 3.854

Fiorino C., Jeraj, Clark C.H., Garibaldi C., Georg D., Muren L., van Elmpt W., Bortfeld T., Jornet N. Grand Challenges for R. medical physics in radiation oncology. RADIOTHER. ONCOL. (2020). https://doi.org/10.1016/j.radonc.2020.10.001 **IF: 4.856**

Garibaldi C., Jornet N., Tan L.T., Boejen A., Franco P., Bussink J., Troost E.G.C., Bak B., Bibault J.-E., Dzhugashvili M., Van den Berghe L., Fizaine L., Leci A., Ricardi U., Jereczek-Fossa B.A., National societies' needs as assessed by the ESTRO National Societies Committee survey: A European perspective (2020) RADIOTHER ONCOL, 151, 176-181. **IF: 4.8560**

Hernandez V., Hansen C.R., Widesott L., Back A., Canters R., Fusella M., Gotstedt J., Jurado-Bruggeman D., Mukumoto N., Kaplan L.P., Koniarova I., Piotrowski T., Placidi L., Vaniqui A., Jornet N., What is plan quality in radiotherapy? The importance of evaluating dose metrics, complexity, and robustness of treatment plans (2020) RADIOTHER ONCOL, 153, 26-33. **IF: 4.8560**

Kazantsev P., Lechner W., Gershkevitsh E., Clark C.H., Venencia D., Van Dyk J., Wesolowska P., Hernandez V., Jornet N., Tomsej M., Bokulic T., Izewska J., IAEA methodology for on-site end-to-end IMRT/VMAT audits: an international pilot study (2020) ACTA ONCOL, 59 (2), 141-148. **IF: 3.7010**

Ronn Hanse C, Crijns W, Hussein M, Rossi L, Gallego P, Verbakel W, Unkelbach J, Thwaites D, Heijmen B. Radiotherapy Treatment plannINg study Guidelines (RATING): A framework for setting up and reporting on scientific treatment planning studies. RADIOTHERAPY AND ONCOLOGY, Volume 153, pp 67-78. **IF: 4.856**

Verhaegen F., Fonseca G.P., Johansen J.G., Beaulieu L., Beddar S., Greer P., Jornet N., Kertzscher G., McCurdy B., Smith R.L., Mijnheer B., Olaciregui-Ruiz I. Future directions of in vivo dosimetry for external beam radiotherapy and brachytherapy. Phiro; Vol 16: 18-19 (2020) https://doi.org/10.1016/j.phro.2020.09.001. **IF: -**

Diffusion Activities

Congresses

Oral communications

- E. Ambroa, J. Pérez-Alija, P. Gallego. Deep Neural Network and transfer learning for DVH prediction in VMAT prostate treatments. ESTRO 2020. Online Congress.

Posters

- S. Bermejo, G. Gómez de Segura Melcón, X. Nolla Nieto, N. Ventosa Lli, P. Carrasco de Fez. Dosimetric stability of left breast cancer irradiation in DIBH triggered with RPM. ESTRO 2020. Online congress. RADIOTHERAPY AND ONCOLOGY v152, Supplement 1, S81, 2020. Poster Highlights (PH-0167).
- G. Gómez de Segura Melcón, S. Bermejo, A. Coral Gallart, N. Espinosa López, X. Nolla Nieto, N. Ventosa Lli, P. Carrasco de Fez. Dosimetric impact of non-compliance/VCD failure in left breast rt treatments in DIBH. ESTRO 2020 - Online congress. RADIOTHERAPY AND ONCOLOGY v152, Supplement 1, S1068, 2020. Poster (PO-1915).
- J. Pérez-Alija, P. Gallego, M. Lizondo, N. Jornet, A. Latorre-Musoll, I. Valverde-Pascual, M. Barceló-Pagès, N. Garcia-Apellaniz, P. Carrasco de Fez, P. Delgado-Tapia, P. Simon, M. Adria, Agustí Ruiz, Montse Ribas, E. Ambroa. Transfer learning and Deep Neural Network for lung and heart dose prediction in breast treatments. RADIOTHERAPY AND ONCOLOGY v152, Supplement 1. Poster Highlights.
- P. Gallego, E. Ambroa, Itziar Valverde-Pascual, J. Pérez-Alija. Automated data labeling in radiotherapy using a deep neural network. ESTRO 2020. Online congress. RADIOTHERAPY AND ONCOLOGY v152, Supplement 1.
- I. Valverde-Pascual, P. Gallego, J. Perez-Alija, N. Jornet, A. Latorre-Musoll, M. Barceló, N.García-Apellaniz, P. Carrasco de Fez, M. Lizondo, P. Simon Garcia, P. Delgado Tapia, M. Adriá Mora, A. Ruiz Martinez, M. Ribas. Assessment of shoulder position variation and its impact on VMAT doses using an EPID-based software. ESTRO 2020. Online congress. Radiotherapy and Oncology v152, Supplement 1.
- J. Perez-Alija, N. Jornet, P. Gallego, A. Latorre-Musoll, P. Carrasco de Fez, P. Delgado-Tapia, P. Simon Garcia, A. Ruiz Martinez, M. Adria Mora, M. Lizondo, I. Valverde-Pascual, M. Barcelo-Pages, N. Garcia-Apellaniz, G. Sancho Pardo, J. Craven-Bartle, M. Ribas. Six-years experience of peer review: Analysis of results and lessons learned. ESTRO 2020. Online congress. RADIOTHERAPY AND ONCOLOGY v152, Supplement 1.

Courses

- Artur Latorre Musoll. Eclipse Scripting API Basics Course. Online

Working Groups of Scientific Societies and Committees

- P. Carrasco (President) and N. Jornet. Scientific Commission of the Sociedad Española de Física Médica.
- P. Carrasco. ESTRO Advisory Committee on Radiation Oncology Practice (ACROP) guideline on the implementation of DIBH.
- Artur Latorre Musoll (coordinator of the working group of the Societat Catalana de Física Mèdica). Scripting en sistemes de planificació.
- Montserrat Ribas and Agustín Ruiz, members of the group Prevenció de radiacions ionitzants en edat pediàtrica (Departament de Salut, Generalitat de Catalunya) as Hospital Radiophysicists.
- Montserrat Ribas, Núria Jornet, Pablo Carrasco, Agustín Ruiz, Artur Latorre and Mar Adrià Mora. Plataforma Nacional de I+D en Protección Radiológica (PEPRI).

Associated Groups

Paediatrics

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Members
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Betancourt Castellanos, Jocelyn Cristina (FGS)
Brio Sanagustín, Sonia (FGS)
Carreras González, Gemma (FGS)
Castillo Gómez, Fátima (FGS)
Coca Fernández, Elisabet (FGS)
Fraga Rodríguez, Gloria Maria (FGS)
García Borau, María José (FGS)
García del Cerro, Gemma (FGS)
Ginovart Galiana, Gemma (FGS)
Goruppi, Ilaria (FGS)
Josa Eritja, María (FGS)
López Bernal, Ester (FGS)
Moliner Calderón, Elisenda (FGS)
Morón Cazalilla, Georgina (FGS)
Serna Berna, Vicente (FGS)
Tirado Capistros, Mireia (FGS)
Tobajas Torrubiano, Eva (FGS)
Torrent Español, Montserrat (FGS)
Trabazo del Castillo, María (FGS)
Turon Viñas, Eulàlia (FGS)
Valle T-Figueras, José María (FGS)

Main Lines of Research

- Bone marrow transplantation
- Bone marrow failure
- Hereditary erythrocyte disorders
- Appointment as a National Health System Reference Centre of Excellence (CSUR):
  - Allogeneic transplants in children, since 2010
  - Hereditary erythrocyte disorders (Joint unit with HSJD), since 2018
  - Bronchiolitis obliterans

Scientific Challenges

- Transplant of haematopoietic progenitor cells from alternative donors.
- Transplant of haematopoietic progenitor cells in congenital immunodeficiencies.
- Transplant of haematopoietic progenitor cells in congenital metabolic pathologies.
- Fanconi anaemia (group recognized by the UAB, Barcelona).
- Polytraumatized patient care programme. PPT implementation code at HSCSP and in the CatSalut central register.
- Preterm new-borns.
- Genotype-phenotype correlation in neurocutaneous diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- G. Fraga. Collaborating investigator in the project Red de Salud Materno Infantil y del Desarrollo (SAMID). RETICS, financed by PN I+D+I 2013-2016, ISCIII - Subdirección General de Evaluación y Fomento de la Investigación and Fondo Europeo de Desarrollo Regional (FEDER), RD 16/0002/0015. Duration: 2017-2021. Principal investigator: Elisa Llurba Olivé.
- E. López. Collaborating investigator in the project Impact of exercise and mediterranean diet vs Aspirin on live-birth rate and cardiovascular programming in vitro fertilization, a randomized study. FIS 2020 P120-0154. Principal investigator: Elisa Llurba.
- G. Ginovart; M. Josa. Collaborating investigators in the clinical trial Remodelado y disfunción cardíaca en pacientes con preeclampsia regulado por el ambiente anti-angiogénico: Estudio clínico y experimental. FIS PI19/00702. Gov identifier: NCT04162236. Principal investigators: Elisa Llurba Olivé and Jordi Ordóñez Llanos.
- Gemma Ginovart, Maria Josa, Remei Tarragó, Susana Boronat. Collaborating investigators in the project BiSC (Barcelona Life Study Cohort). Coordinated by Dr. Jordi Sunyer (ISGlobal) and financed by the European Research Council (ERC) and Health Effects Insistute (HEI). Principal investigator: Elisa Llurba Olivé.
- G. Ginovart. Pedagogia Hospitalària en Neonatologia i Pediatria. Grup de Recerca 2014 SGR 806, modalitat SGE (2014-2016). AGAUR (Agència de Gestió d'Ajuts Universitaris i de Recerca). 2017-2019.
- G. Fraga. Principal investigator. Estudio analítico retrospectivo de la evolución en los últimos 10 años de los pacientes pediátricos con enfermedad celíaca en un hospital terciario. Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau, 2019.
- C. Leganés and E. Turón. Collaborating investigators in the study Sarepta 4045-301. Principal investigator: J. Díaz Manera. Clinical trials. Gov identifier: NCT02500381.
- E. López. Collaborating investigator. Hipopituitarismo y Gestación. Aspectos clínico y evolución. Institut de Recerca, Hospital de la Santa Creu i Sant Pau. IIBSP- HPG-2020-66. Barcelona, 4 June 2020.
- E. López. Collaborating investigator. Evaluación de la posible transmisión vertical del Sars-cov-2 mediante estudio del líquido amniótico y vellosidades coriales de gestantes afectas por el coronavirus. Institut de Recerca, Hospital de la Santa Creu i Sant Pau. IIB-SP-COV-2020-59. Barcelona, 4 August 2020.
- L. Armendariz. Principal investigator. Caracterización de las poblaciones de eosinófilos en pacientes con asma eosinofílica; evaluación de expresión de marcadores de activación mediante citometría de flujo.

External Collaborations

- E. Moliner. Evaluación de una intervención basada en la evidencia para reducir la bacteriemia asociada a catéter vascular central en recién nacidos de muy bajo peso. FIS 2018. Instituto de Salud Car-

los III. INBERBAC-Neo. PI17/00565. Principal investigator: Marisela Pérez.

- E. Moliner. Co-investigator of the study Virus Respiratorio Sincitial (VRS). Estudio de las características del virus, del huésped, y los factores ambientales como determinantes de la epidemia y su gravedad clínica. FIS 2018 Instituto de Salud Carlos III. FIS PI18/00685. 3 years. Principal investigator: Andrés Antón Pagarolas.
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- Fraga G. Evaluación de la función glomerular. In: Exeni R, García Nieto V, Medeiros M, Santos F. Tratado de Nefrología Pediátrica.
- Fraga G. Desarrollo prenatal del riñón y de las vías urinarias. Bases genético-moleculares del desarrollo renal. In: Exeni R, García Nieto V, Medeiros M, Santos F. Tratado de Nefrología Pediátrica.
- Badell I. Fallo medular. In: García J.J.; Cruz O., Mintegi S. and Moreno J.M. Manual de Pediatría M Cruz, 4ª edición. Editorial Ergon, 2020. ISBN: 978-84-17194-65-9
- Díaz Simal L., Moya Villanueva, S. Otros sistemas de soporte respiratorio. In: García J.J.; Cruz O., Mintegi S. and Moreno J.M. Manual de Pediatría M. Cruz. 4ª edición. Editorial Ergon, 2020. ISBN: 978-84-17194-65-9

Diffusion Activities

Presentations in Courses and Masters

- G. Fraga. Professor in the second edition of the Curso de Experto Universitario en Nefrología Pediátrica Avanzada. Universidad de Oviedo. Centro Internacional de Postgrado. 2019-2020.
- Eva Tobajas. Atención psicosocial y espiritual en personas en situación de enfermedad crónica avanzada. Postgrado Universitat de Vic - Institut Català d'Oncologia (ICO). 2019-2020.
- Eva Tobajas. Máster de avances en la clínica psicoanalítica de la infancia y la adolescencia. Universitat de Barcelona. 2019-2020.
- Eva Tobajas. Máster de Psicología General Sanitaria. Universitat Autònoma de Barcelona. 2019-2020.
- S. Boronat. Pruebas genéticas y consejo genético en Neonatología. Curso de perfeccionamiento en Neonatología. Hospital Sant Joan de Déu. Barcelona, 3-4 November 2020.
- S. Boronat. Taller de dismorfología. Sesiones de formación continuada en Pediatría. Hospital del Mar. 19 November 2020.
- E. Tobajas. La atención pediátrica al final de la vida. XI Congreso de la Sociedad Catalano Balear de Cuidados Paliativos SCBCP. Barcelona, 2020.
- G. Carreras. Teaching Collaborator at the 5th edition of the Màster en Andrologia Clínica (Directors: O. Rajmil and A. de Leiva). Universitat de Vic. Organizer of module 1-B (Andrologia Pediàtrica) and teacher of 4 topics ("Hiperplàsia suprarenal congènita", "Altres excessos d'andròsgens suparenals", "Retard puberal" i "Casos clínics"). 15-19 February 2020.
- M. Tirado. Teaching Collaborator at the 5th edition of the Màster en Andrologia Clínica (Directors: O. Rajmil and A. de Leiva). Universitat de Vic. Teacher of 2 topics ("Desenvolupament puberal normal" i "Pubertat precoç"). 17 February 2020.
- M. Torrent. Teaching Collaborator at the Màster d'Infermeria Pediàtrica. Universitat de Barcelona. Topic: "Problemes Oncològics a Pediatria".
- R. Balcells, Teacher of Global Health Pediatrics. Topic: Global Health. Universitat de Vic - Universitat Central de Catalunya. June 2020.
- G. Fraga. Coordinator and speaker at the Curso de Formación Continuada. Societat Catalana de Pediatria 2020-2021. Coordinator of the module 2 (Nefrología) and teacher of the topic "Quistes Renales".
- G. Fraga. Teacher at the Máster en Nefrología Pediátrica. Asociación Española de Nefrología Pediátrica. Aval académico y científico: International Pediatric Nephrology Association. Online, 2020-2022.
- G. Fraga. Conference. Protocolo de seguimiento del recién nacido de riesgo de Enfermedad Renal Crónica. Sesiones Generales de Pediatría de la Subcomisión de Docencia de Pediatría. Hospital Vall d'Hebron, Barcelona, 25 November 2020.
- J. Vicente Serna. Speaker. Paliativos pediátricos. Máster de asistencia integral a personas con enfermedades avanzadas. Universitat Autònoma de Barcelona.

Communications and Posters in Congresses

- J.M. Valle T-Figueras, N. Mendoza-Palomar, L. Alonso Garcia, C. Díaz-de-Heredia Rubio, M.J. Cabañas Poy, J. Vima Bofarull, P. Soler-Palacín. The use of voriconazole in children: higher doses in younger children and control of inflammation are key points for an optimal treatment. 38th Annual Meeting of the European Society for Paediatric Infectious Diseases. Virtual Meeting. 26-29 October 2020.
- María Quinteiro González, Fátima Castillo Gómez, Marta Freixas Bermejo, María Garrido Vicente, Marta Espinet Pedrol, Laura Armendariz Lacasa. Acidosis metabólica en un neonato. I Congreso Digital Asociación Española de Pediatría (AEP). 5-7 November 2020.
- Duecker RP, De Mir Messa I, Jerkic S, Kochems A, Garcia del Cerro G, Rosewich M, Gronau L, Zielen S, Chiocchetti AG, Kreyenberg H, Schubert R. Epigenetic regulation of Inflammation in postinfectious bronchiolitis obliterans. International MrNA Health conference. Universitat Klinikum Frankfurt. Starke Lunge Foundation, 2020.
- Elisabet Coca, Eulalia Turón, Asunción Diaz, Sònia Brió, Benjamin Rodriguez, José Vicente Serna, Gemma García del Cerro, Adriana Devolder, Sean Yeh, Susana Boronat. Diagnóstico precoz de enfermedades metabólicas mediante exoma clínico dirigido. Jornadas SENEP LIVE. Sociedad Española de Neurología Pediátrica. Virtual, 14-23 September 2020.
- Laura Armendáriz Lacasa, Fátima Castillo Gómez, Gemma García Del Cerro, Cristina Sevilla Homedes, Marta Freixas Bermejo, Susana Boronat Guerrero. Neumonía necrotizante. Revisión de los últimos 10 años en un hospital de tercer nivel. I Congreso Digital Asociación Española de Pediatría (AEP). Hospital de la Santa Creu i Sant Pau. 5-7 November 2020.
- Fátima Castillo Gómez, Laura Armendariz Lacasa, Gemma García Del Cerro, Cristina Sevilla Homedes, María Quinteiro González, Susana Boronat Guerrero. Neumonías complicadas en un hospital de tercer nivel. Revisión de los últimos 10 años. I Congreso Digital Asociación Española de Pediatría (AEP). Hospital de la Santa Creu i Sant Pau. 5-7 November 2020.
- Quinteiro M, Castillo F, Freixas M, Garrido M, Espinet M, Armendariz L. Acidosis metabólica en un neonato. I Congreso Digital Asociación Española de Pediatría (AEP). Hospital de la Santa Creu i Sant Pau. 5-7 November 2020.
- Espinet M, Morón G, Trabazo M, Castillo F, Garrido M, Yeh SP, Quinteiro M. Pancitopenia y lesión lingual, ¿qué nos sugiere? I Congreso Digital de la AEP. Hospital de la Santa Creu i Sant Pau. 5-7 November 2020.
- Madai Curbelo Rodriguez, Fátima Castillo Gómez, Mª José García Borau, Elisenda Moliner Calderón, Esther López Bernal, Gemma Ginovart Galiana, Joan Ilari Rocabert. Valoración de la respuesta inmediata a la frenotomía en los menores de 6 meses de edad con anquiloglosia posterior. 34 congreso nacional de la SEPEAP. Hospital de la Santa Creu i Sant Pau. Virtual, 15-24 October 2020.

- Eulàlia Turón Viñas, Elisabet Coca Fernández, Asunción Díaz Gómez, Benjamin Rodríguez Santiago, Sara Iglesias Fernández, María Garrido Vicente, Marta Espinet Pedrol, Fátima Castillo Gómez, Gemma Garcia del Cerro, Susana Boronat Guerrero. Uso del exoma clínico para el diagnóstico y pronóstico precoz de la epilepsia: un caso de mutación por PP3CA. Jornadas SENEP LIVE. Sociedad Española de Neurología Pediátrica. Virtual, 14-23 September 2020.
- Peñalba Vidal, Borja; Tirado Capistros, Mireia; Franquesa Cervantes, Laura; Carreras González, Gemma. Valoración del protocolo de tratamiento de los niños con obesidad de un hospital terciario durante 2017-2018. 42 Congreso de la Sociedad Española de Endocrinología Pediátrica. Zaragoza, 14-16 October 2020.
- Sean Percival Yeh Hsi, María Josa Eritja, Miquel Ramon, Mireai Tirado, Elisenda Moliner, Esther López. Bocio congénito. V Jornada Nacional de Neonatología. Virtual, 15 October 2020.
- Sean Percival Yeh Hsi, María Jossa, Esther López, Laura Armendariz, Elisenda Moliner, Miquel Ramon. Acidemia propiónica. V Jornada Nacional de Neonatología. Virtual, 15 October 2020.
- Elisena Moliner, María Jossa, María José García, Esther López, Miquel Ramon, Laura Armendariz. Retinopatía del prematuro e infección por citomegalovirus. V Jornada Nacional de Neonatología. Virtual, 15 October 2020.
- E. Coca, E. Turón, MJ García Borau, E. Roé, C. García Melendo, B. Rodríguez, S. Brió, JJ Salazar, D. Encarnación, S. Boronat. Discapacidad intelectual e hiperpigmentación lineal en mujeres. Síndrome de Borjeson-Frossmann-Lehmann. Jornadas SENEP LIVE. Sociedad Española de Neurología Pediátrica. Virtual, 14-23 September 2020.
- E. Moliner, M. Josa, MJ García Borau, E. López, M. Ramón, L. Armendariz. Retinopatía del prematuro e infección por citomegalovirus. V Jornada Nacional de Neonatología. Virtual. October 2020.
- M. Tirado Capistros, G. Carreras González, B. Peñalba Vidal, M. Tondo Colomer, F. Blanco Vaca. Cribado oportunista de hipercolesterolemia familiar en pediatría. Experiencia en un hospital de tercer nivel. 42 congreso de la SEEP. Virtual, 14-16 October 2020.
- D. Carrera-García, L. Díaz-Simal, C. Martín-Martínez, V. Pineda-Solas, J. Rivera-Luján, J. Sánchez-Manubens. Tromboembolisme pulmonar com a presentació d'una síndrome antifosfolipid. Pediatr Catalana. 2020;80(3):115-7.
- Mariana Corrochano, Marta Pratcorona, Anna Monter, Elena Bussaglia, Maite Carricondo, Montserrat Torrent, Clara Martinez, Isabel Badell, Josep Nomdedéu. Patterns of molecular response to induction therapy in ETV6-RUNX1+ Acute Lymphoblastic Leukemia. 25th Congress of the EHA. 11-14 June 2020.
- Payán-Pernía, Salvador; Rodríguez-Santiago, Benjamín; Baena Gimeno, Manel; Remacha Sevilla, Ángel F.; Torrent Español, Montserrat; Badell Serra, Isabel; Surrallés Calonge, Jordi; Sierra Gil, Jorge. Aplicación del exoma clínico Sant Pau para el diagnóstico de anemias hemolíticas y trastornos del metabolismo del hierro hereditarios. LXII Congreso Nacional de la SEHH and XXXVI Congreso Nacional de la SETH. 26-30 October 2020.
- Corrochano M, Pratcorona M, Monter A, Bussaglia E, Carricondo M, Torrent M, Martinez C, Badell I, Nomdedéu J. Patterns of molecular response to induction therapy in ETV6-RUNX1+ Acute Lymphoblastic Leukemia. EHA LIBRARY. 06/12/20; 294347; EP428 (Abstract release date: 05/14/20).

Associated Groups

Ophthalmology

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Luna Marine, Maria Sabina (FGS)
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Oliva Sierra, Ruth (FGS)
Rodríguez Álvarez, Fernando (FGS)
Salvador Miras, Ignacio (IR)
Téllez Vázquez, Jesús Maria (FGS)
Vela Segarra, José Ignacio (FGS)

Main Lines of Research

- Optimization of the functional rehabilitation of patients after cataract surgery using multifocal intraocular lenses, and evaluation of vision quality in terms of parameters such as visual acuity, sensitivity to contrast and aberrometry.
- Ocular repercussions of allogeneic bone marrow transplants and evaluation of different clinical manifestations and response to treatment of graft-versus-host disease.
- Comparison of the effectiveness and safety of intravitreal injection of ranibizumab vs laser photocoagulation in patients with visual alteration due to diabetic macular oedema.

Scientific Production

Total Impact Factor: 3.4260 · Mean Impact Factor: 1.7130

Gil M.A., Varon C., Cardona G., Buil J.A., Visual acuity and defocus curves with six multifocal intraocular lenses (2020) INT OPHTHALMOL, 40 (2), 393-401. **IF: 1.3140**

Vela J.I., Bulnes V., Torrell N., Giro M., Perich S., Bilateral Marginal Corneal Infiltrates: A Novel Ocular Manifestation of DRESS Syndrome (2020) OCUL IMMUNOL INFLAMM. **IF: 2.1120**

Associated Groups

Nuclear Medicine

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Estorch Cabrera, Montserrat (FGS)
Fernández León, Alejandro (FGS)
Flotats Giralt, Albert (FGS)
Fuentes Ocampo, Francisco (FGS)
López Mora, Diego Alfonso (IR)
Sizova, Marina (FGS)

Main Lines of Research

Oncology

- New diagnostic methods based on the identification and visualization of molecular targets employing metabolic mechanisms, receptor systems, hypoxia, angiogenesis, and apoptosis.
- New applications for sentinel node detection and radio-guided surgery models.

Cardiovascular research

- New methods for non-invasive assessment of ischaemic heart disease and heart failure.
- Cardiovascular functional studies.
- New methods for assessing cardiac innervation.

Functional neuroimaging

- Development of new functional imaging methods for evaluating neurodegenerative diseases (Parkinson's, Parkinson-Plus, Alzheimer's, MCI).
- Dopaminergic system studies using IBZM and Datscan.

Scientific Challenges

- Introduce new technologies to clinical research (given that imaging techniques are evolving very rapidly towards multimodal systems that combine biological, molecular, anatomical and functional information in one single examination) and include these technologies, mainly PET/CT and PET/MR, in the group's and hospital's research activities.

New molecular imaging techniques

- Develop new hybrid molecular imaging technologies, mainly PET/CT and PET/MR, building on pre-clinical and clinical molecular imaging models developed using SPECT and conventional nuclear medicine technologies.

PET imaging biomarkers

- Develop new PET radioactive tracers to be used as biomarkers in new imaging technologies building on our experience with radioactive tracers to view in vivo diagnostic and therapeutic targets.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Neuroradiology: research into neurological and mental disorders and ageing (Dr. Camacho, member).
- Oncology, Gynaecology, Surgery, Radiology, Radiotherapy, Nuclear Medicine and Pathology: evaluation of the usefulness of PET CT with 18F-FDG in the staging of locally advanced breast carcinoma (Dr. Duch, PI).
- Cerebrovascular Diseases (Dr. Carrió, member).

External Collaborations

- Zhejiang University, Hangzhou, China. Molecular imaging (Prof. Hong Zhang, Prof. Mei Tian).
- Hospital Clínico Universitario de Chile, Santiago de Chile. (Prof. P. González, Prof. T. Massardo).
- QIMP team, Center of Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna, Austria. (Prof. T. Beyer).
- Collaboration of research group with PhilipsHealthcare (Master Research Agreement): "Assessment of Advanced Technologies for Molecular Imaging".
- Valle Camacho. Sub-study to study WN25203, using positron emission tomography (PET) with an amyloid tracer to assess changes in amyloid load over time in subjects with prodeomal Alzheimer's disease. ROCHE protocol WN25203-PET-substudy
- Valle Camacho. PET imaging substudy associated with: a phase III, randomized, double-blind, placebo-controlled, parallel-group, multicenter, efficacy, and safety study of gantenerumab in patients with mild Alzheimer's disease. ROCHE protocol WN28745-PET Substudy.

- Valle Camacho. Ensayo clínico de fase III, aleatorizado, controlado con placebo, de grupos paralelos, doble ciego, para estudiar la eficacia y la seguridad de MK-8931 (SCH900931) en pacientes con deterioro cognitivo leve amnésico debido a la enfermedad de Alzheimer (EA prodrómica). MK-8931-019.
- Valle Camacho. Estudio aleatorizado, doble ciego, controlado con placebo y de grupos paralelos de la eficacia y la seguridad de MK-8931 en sujetos con enfermedad de Alzheimer leve o moderada. MK-8931-017.
- Valle Camacho. A 24 month, multicenter, randomized, double-blind, placebo-controlled, parallel-group, efficacy, safety, tolerability, biomarker, and pharmacokinetic study of AZD3293 in outpatients with early Alzheimer's disease. D5010C00009.
- Valle Camacho. A Phase 3 Multicenter, Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of Aducanumab (BIIB037) in Subjects with Early Alzheimer's Disease. Fase 3. 221AD-301 & 302.
- Valle Camacho. A multi-centre, double-bind, parallel-group, randomized controlled study to investigate the efficacy, safety and toleralility of orally administered BI409306 during a 12 week treatment period compared to placebo in patients with Alzheimer's disease. 1289.5.
- Valle Camacho. A randomized, double-blind, placebo-controlled and delayed start study of LY3314841 in Mild Alzheimer's disease dementia. I8D-MCAZET.
- Valle Camacho. Multicenter, randomized, double-blind, placebo-controlled study to assess the efficacy, safety, pharmacokinetics, and pharmacodynamics of GZ/SAR402671 in patients with early-stage Parkinson's disease carrying a GBA mutation or other pre-specified variant. ACT14820.
- Valle Camacho. A placebo controlled, double blind, parallel group, 24 month study to evaluate the efficacy and safety of E2609 in subjects with early Alzheimer's disease. E2606-G000-302.

Active Grants

- Ignasi Carrió Gasset (IP), Albert Flotats (collaborator). Improved treatment stratification for Hodgkin lymphoma patients through the use of deep learning, molecular imaging and relevant clinical data. AC19/00141. Instituto de Salud Carlos III. Duration: 2020-2022. 82,644 €.

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

Doctoral Theses

- Juan Carlos Pernas Canadell. Significado de la visualización de la vena central de la glándula suprarrenal en la tomografía computerizada con contraste endovenoso. Universitat Autònoma de Barcelona. Director: Albert Flotats. Date of defense: 14/11/2020

Scientific Production

Total Impact Factor: 148.420 · Mean Impact Factor: 7.421

Alarcon L., Lopez-Mora D., Fernandez A., Carrio I., Camacho V., Use of PET/CT with 18F-FDG in the diagnosis of paraneoplastic limbic encephalitis Utilidad de la PET/TC con 18F-FDG en el diagnóstico de la encefalitis límbica paraneoplásica (2020) REV ESP MED NUCL IMA, 39 (3), 173-174. **IF: 1.0900**

Ballester Vazquez E., Perez Garcia J.I., Lopez Mora D.A., Galan Martinez C., Pareja Nieto E., Clos Enrriquez M., Gonzalez Lopez J.A., Moral Duarte A., Identification of Occult Adenomas in Primary Hyperparathyroidism With 18F-fluorocholine PET/CT Identificación de adenomas ocultos en hiperparatiroidismo primario con PET-TC 18F-fluorocolina (2020) CIR ESPAN, 98 (7), 395-402. **IF: 1.3230**

Carrio I., Flotats A., Liquid biopsies and molecular imaging: friends or foes? (2020) CLIN TRANSL IMAGING, 8 (1), 47-50. **IF: 2.5060**

Carrió I, Herrmann K. A Conversation Between Ignasi Carrió and Ken Herrmann. J NUCL MED. 2020 May;61(5):638-640. **IF: 7.887**

De Cuypere M., Lovinfosse P., Goffin F., Gennigens C., Rovira R., Duch J., Fastrez M., Gebhart G., Squifflet J.L., Luyckx M., Charaf G., Crener K., Buxant F., Bucella D., Jouret M., Hustinx R., Kridelka F., Added value of para-aortic surgical staging compared to 18F-FDG PET/CT on the external beam radiation field for patients with locally advanced cervical cancer: An ONCO-GF study (2020) EJSO-EUR J SURG ONC, 46 (5), 883-887. **IF: 3.9590**

De Cuypere M., Lovinfosse P., Gennigens C., Hermesse J., Rovira R., Duch J., Goffin F., Hustinx R., Kridelka F., Tumor total lesion glycolysis and number of positive pelvic lymph nodes on pretreatment positron emission tomography/computed tomography (PET/CT) predict survival in patients with locally advanced cervical cancer (2020) INT J GYNECOL CANCER, 30 (11), 1705-1712. **IF: 2.0950**

Fortea J., Vilaplana E., Carmona-Iragui M., Benejam B., Videla L., Barroeta I., Fernandez S., Altuna M., Pegueroles J., Montal V., Valldeneu S., Gimenez S., Gonzalez-Ortiz S., Munoz L., Estelles T., Illan-Gala I., Belbin O., Camacho V., Wilson L.R., Annus T., Osorio R.S., Videla S., Lehmann S., Holland A.J., Alcolea D., Clarimon J., Zaman S.H., Blesa R., Lleo A., Clinical and biomarker changes of Alzheimer's disease in adults with Down syndrome: a cross-sectional study (2020) LANCET, 395 (10242), 1988-1997. **IF: 60.3920**

Freudenberg LS, Paez D, Giammarile F, Cerci JJ, Modiselle M, Pascual TNB, El-Haj N, Orellana P, Carrio I, Fanti S, Matushita CS, Pynda Y, Herrmann K. Global Impact of COVID-19 on Nuclear Medicine Departments: An International Survey in April 2020. J NUCL MED. 2020; 61(9):1278-1283. **IF: 7.887**

López-Mora DA, Carrió I Advances And New Indications of PET/CT scan. MED CLIN (BARC). 2020 Jun 30:S0025-7753(20)30284-0. doi: 10.1016/j.medcli.2020.04.019. Online ahead of print. PMID: 32620354. **IF: 1.635**

Lopez-Mora D.A., Flotats A., Fernandez A., Sizova M., Camacho V., Carrio I., Striking neurologic 18F-FDG PET/CT pattern in Devic's disease (neuromyelitis optica spectrum disorder) (2020) EUR J NUCL MED MOL I, 47 (2), 511-512. **IF: 7.0810**

Lopez Mora DA, Flotats A, Fuentes-Ocampo F, Carrio I. Reported differences between Digital and Analog PET/CT studies. J NUCL MED. 2020 May 1:jnumed.120.244608. doi: 10.2967/jnumed.120.244608. Online ahead of print. PMID: 32358090. **IF: 7.887**

Lopez-Mora D.A., Fernandez Leon A., Lleo A., Blesa R., Camacho V., The Added Value of Tau-PET in the Assessment of Progressive Supranuclear Palsy (2020) CLIN NUCL MED, 45 (5), E239-E240. **IF: 6.5870**

Lopez-Mora D.A., Fernandez A., Duch J., Carrio I., Follow-up 18F-FDG PET/CT in an oncological asymptomatic COVID-19 patient 18F-FDG PET/TC de seguimiento en un paciente oncológico portador asintomático de COVID-19 (2020) REV ESP MED NUCL IMA. **IF: 1.0900**

López-Mora DA, Lagos LA, Estorch M, Carrio I. Future Challenges of Multimodality Imaging. Recent Results Cancer Res. 2020;216:905-918. **IF: 6.27**

Lopez-Mora D.A., Sizova M., Estorch M., Flotats A., Camacho V., Fernandez A., Abouzian S., Fuentes-Ocampo F., Garcia J.I.P., Ballesteros A.I.C., Duch J., Domenech A., Duarte A.M., Carrio I., Superior performance of 18F-fluorocholine digital PET/CT in the detection of parathyroid adenomas (2020) EUR J NUCL MED MOL I, 47 (3), 572-578. **IF: 7.0810**

Marin-Lahoz J., Sampedro F., Horta-Barba A., Martinez-Horta S., Aracil-Bolanos I., Camacho V., Bejr-kasem H., Pascual-Sedano B., Perez-Perez J., Gironell A., Pagonabarraga J., Carrio I., Kulisevsky J., Preservation of brain metabolism in recently diagnosed Parkinson's impulse control disorders (2020) EUR J NUCL MED MOL I, 47 (9), 2165-2174. **IF: 7.0810**

Ninerola-Baizan A., Aguiar P., Cabrera-Martin M.N., Vigil C., Gomez-Grande A., Lorenzo C., Rubi S., Sopena P., Camacho V., Relevance of quantification in brain PET studies with 18F-FDG Relevancia de la cuantificación en los estudios PET cerebrales con 18F-FDG (2020) REV ESP MED NUCL IMA, 39 (3), 184-192. **IF: 1.0900**

Roldan A., Portella M.J., Sampedro F., Alonso-Solis A., Sarro S., Rabella M., Grasa E.M., Alvarez E., Rodriguez R., Camacho V., Fernandez-Leon A., Fuentes F., Perez-Blanco J., Perez V., Mckenna P., Pomarol-Clotet E., Corripio I., Brain metabolic changes in patients with treatment resistant schizophrenia treated with deep brain stimulation: A series of cases (2020) J PSYCHIATR RES, 127, 57-61. **IF: 3.7450**

Skali H, Murthy VL, Paez D, Choi EM, Keng FYJ, Iain MA, Al-Mallah M, Campisi R, Bateman TM, Carrio I, Beanlands R, Calnon DA, Dilsizian V, Dondi M, Gimelli A, Pagnanelli R, Polk DM, Soman P, Einstein AJ, Dorbala S, Thompson RC. Guidance and best practices for reestablishment of non-emergent care in nuclear cardiology laboratories during the coronavirus disease 2019 (COVID-19) pandemic: An information statement from ASNC, IAEA, and SNMMI. J NUCL MED. 2020; 61/10):1534-1539. **IF: 7.887**

Skali H, Murthy VL, Paez D, Choi EM, Keng FYJ, Iain MA, Al-Mallah M, Campisi R, Bateman TM, Carrio I, Beanlands R, Calnon DA, Dilsizian V, Dondi M, Gimelli A, Pagnanelli R, Polk DM, Soman P, Einstein AJ, Dorbala S, Thompson RC. Guidance and best practices for reestablishment of non-emergent care in nuclear cardiology laboratories during the coronavirus disease 2019 (COVID-19) pandemic: An information statement from ASNC, IAEA, and SNMMI: Endorsed by the Infectious Diseases Society of America. J NUCL CARDIOL. 2020;27(8):1855-1862. **IF: 3.847**

Diffusion Activities

- COVID-19 Pandemic as stimulator to Re-Establish Nuclear Medicine as Clinical Speciality; based on a report by Prof. Ignasi Carrió. Annual Meeting of the Deutsche Gesellschaft für Nuklearmedizin (Virtual Edition). September 2020. Published in NUKLEARMEDIZIN 2020;59:405-408.
- "Comparison between digital and analog 18F-Fluorocholine PET/CT detection rate of parathyroid Adenomas", "Nothing else matters - Get your paper published in a top journal", "Performance of digital PET/CT in the assessment of liver metastases", "Digital vs Analog PET/CT in the detection of liver Metastases".
- European Journal of Nuclear Medicine and Molecular Imaging 2020; 47 (Suppl 1)
- Communications at Annual Meeting of the European Association of Nuclear Medicine (Virtual Edition). October 16-23, 2020.

Associated Groups

Intensive Medicine

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Izura Gómez, Marta (FGS)
Moran Chorro, Indalecio (FGS)
Rodríguez Farré, Núria (FGS)
Santos Rodríguez, José Alberto (FGS)
Suárez Montero, Juan Carlos (FGS)
Torrens Sonet, Maria (FGS)
Vera Artazcoz, Paula (FGS)
Zapata Fenor, Luis (FGS)

Main Lines of Research

Acute respiratory failure and artificial ventilation

- Non-invasive ventilation.
- New ventilation modes: proportional-assist ventilation and NAVA.
- Prone decubitus in acute respiratory dysfunction syndrome (ARDS).
- Artificial ventilation withdrawal.
- Expert ventilation systems.
- Sleep and artificial ventilation.
- Early and active mobilization of the critical patient.
- Extracorporeal CO2 removal in ARDS patients.
- High-flow oxygen administration by nasal cannula in post-extubation phase.
- Prevalence of drug interactions in the critical care unit.

Study of the usefulness of new biomarkers in critically ill patients

- BNP in weaning from mechanical ventilation.
- Use of the NGAL protein in the renal prognosis of critically ill patients.
- Strict control of blood glucose in critically ill patients.
- Prophylaxis of acute gastric mucosal injury in critically ill patients.
- Study of the haemodynamic effects of different antipyretic drugs in critically ill patients.
- Influence of position change to supine decubitus position on intra-abdominal pressure.

Scientific Challenges

- Consolidate clinical and physiological research into ventilation in critically ill patients through multicentre and multinational networking.
- Create a stable and well-trained group of researchers in this discipline.

Active Grants

- Juan Carlos Suárez Montero. Reversibilidad precoz de la disfunción diastólica como marcador pronóstico en el shock séptico (REPRISS). SOCMIC 2018. Societat Catalana de Medicina Intensiva i Crítica. Duration: 2018-2022. 1,363.64 €.

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

Transfer Products

- Dr. Antoni J. Betbesé Roig: Participation in clinical trials Nephroprotect, Sepcell
- Dr. Lluís Zapata Fenor:
  - PI: Estudio observacional sobre la evolución de los pacientes ingresados para cuidados intensivos orientados a la donación.
  - PI: Reversibilidad precoz de la disfunción diastólica en el shock séptico.

Scientific Production

Total Impact Factor: 275.953 · Mean Impact Factor: 10.614

Baldira J., Ruiz-Rodriguez J.C., Wilson D.C., Ruiz-Sanmartin A., Cortes A., Chiscano L., Ferrer-Costa R., Comas I., Larrosa N., Fabrega A., Gonzalez-Lopez J.J., Ferrer R., Biomarkers and clinical scores to aid the identification of disease severity and intensive care requirement following activation of an in-hospital sepsis code (2020) ANN INTENSIVE CARE, 10 (1). **IF: 4.1240**

Ballesteros Sanz M.A., Hernandez-Tejedor A., Estella A., Jimenez Rivera J.J., Gonzalez de Molina Ortiz F.J., Sandiumenge Camps A., Vidal Cortes P., de Haro C., Aguilar Alonso E., Bordeje Laguna L., Garcia Saez I., Bodi M., et al. Recommendations of the Working Groups from the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC) for the management of adult critically ill patients in the coronavirus disease (COVID-19) Recomendaciones de «hacer» y «no hacer» en el tratamiento de los pacientes críticos ante la pandemia por coronavirus causante de COVID-19 de los Grupos de Trabajo de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC) (2020) MED INTENSIVA, 44 (6), 371-388. **IF: 2.3630**

Chaudhuri D, Granton D, Wang DX, Burns KEA, Helviz Y, Einav S, Trivedi V, Mauri T, Ricard JD, Mancebo J, Frat JP, Jog S, Hernandez G, Maggiore SM, Mbuagbaw L, Hodgson CL, Jaber S, Goligher EC, Brochard L, Rochwerg B. High-Flow Nasal Cannula in the Immediate Postoperative Period: A Systematic Review and Meta-analysis. Chest 2020;158:1934-1946. DOI: 10.1016/j.chest.2020.06.038. **IF: 8.308**

Chaudhuri D., Granton D., Wang D.X., Einav S., Helviz Y., Mauri T., Ricard J.-D., Mancebo J., Frat J.-P., Jog S., Hernandez G., Maggiore S.M., Hodgson C., Jaber S., Brochard L., Burns K.E.A., Rochwerg B., Moderate certainty evidence suggests the use of high-flow nasal cannula does not decrease hypoxia when compared with conventional oxygen therapy in the peri-intubation period: Results of a systematic review and meta-analysis (2020) CRIT CARE MED, 48 (4), 571-578. **IF: 7.4140**

Demoule A., Brochard L., Dres M., Heunks L., Jubran A., Laghi F., Mekontso-Dessap A., Nava S., Ouanes-Besbes L., Penuelas O., Piquilloud L., Vassilakopoulos T., Mancebo J., How to ventilate obstructive and asthmatic patients (2020) INTENS CARE MED, 46 (12), 2436-2449. **IF: 17.6790**

Diehl J-L, Piquilloud L, Vimpere D, Aissaoui N, Guérot E, Augy J.L., Pierrot M, Hourton D, Arnoux A, Richard Ch, Mancebo J, Mercat A. Physiological effects of adding ECCO2R to invasive mechanical ventilation for COPD exacerbations. Annals of Intensive Care, 2020; 10:126. Doi: 10.1186/s13613-020-00743-y. **IF: 4.124**

Fraile Gutierrez V., Ayuela Azcarate J.M., Perez-Torres D., Zapata L., Rodriguez Yakushev A., Ochagavia A., Ultrasound in the management of the critically ill patient with SARS-CoV-2 infection (COVID-19): narrative review Ecografía en el manejo del paciente crítico con infección por SARS-CoV-2 (COVID-19): una revisión narrativa (2020) MED INTENSIVA, 44 (9), 551-565. **IF: 2.3630**

Goligher E.C., Dres M., Patel B.K., Sahetya S.K., Beitler J.R., Telias I., Yoshida T., Vaporidi K., Grieco D.L., Schepens T., Grasselli G., Spadaro S., Dianti J., Amato M., Bellani G., Demoule A., Fan E., Ferguson N.D., Georgopoulos D., Guerin C., Khemani R.G., Laghi F., Mercat A., Mojoli F., Ottenheijm C.A.C., Jaber S., Heunks L., Mancebo J., Mauri T., Pesenti A., Brochard L., Lung- And diaphragm-protective ventilation (2020) AM J RESP CRIT CARE, 202 (7), 950-961. **IF: 17.4520**

Granton D, Chaudhuri D, Wang D, Einav S, Helviz Y, Mauri T, Mancebo J, Frat JP, Jog S, Hernandez G, MaggioreSM, Hodgson CL, Jaber S, Brochard L, Trivedi V, Ricard JD, Goligher EC, Burns KEA, Rochwerg B. High-Flow Nasal Cannula Compared With Conventional Oxygen Therapy or Noninvasive Ventilation Immediately Postextubation: A Systematic Review and Meta-Analysis. Crit Care Med 2020; 48:e1129-e1136. DOI: 10.1097/CCM.0000000000004576. **IF: 7.414**

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Mancebo J, Richard JC, Brochard L. Ventilator sharing during shortages. A siren's song? Am J Respir Crit Care Med2020; 202:490-491. Doi: 10.1164/rccm.202006-2438ED **IF: 17.452**

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Mir A.S., Nogue Xarau S., Alcaraz Penarrocha R.M., Moran Chorro I., Montero Clavero F.J., Palomar Martinez M., Evolution of poisoned patients admitted to Spanish intensive care units: Comparing two periods Evolución de las intoxicaciones en las unidades de cuidados intensivos españolas: comparación de 2 periodos (2020) MED INTENSIVA. **IF: 2.3630**

Olaechea Astigarraga P.M., Alvarez Lerma F., Beato Zambrano C., Gimeno Costa R., Gordo Vidal F., Dura Navarro R., Ruano Suarez C., Aldabo Pallas T., Garnacho Montero J., Ruano Suarez M.C., Alonso Araujo I., Arenzana Seisdedos A., et al. Epidemiology and prognosis of patients with a history of cancer admitted to intensive care. A multicenter observational study Epidemiología y pronóstico de los pacientes con antecedentes de neoplasia ingresados en las Unidades de Cuidados Intensivos. Estudio multicéntrico observacional (2020) MED INTENSIVA. **IF: 2.3630**

Penuelas O., Muriel A., Abraira V., Frutos-Vivar F., Mancebo J., Raymondos K., Du B., Thille A.W., Rios F., Gonzalez M., del-Sorbo L., Ferguson N.D., del Carmen Marin M., Pinheiro B.V., Soares M.A., Nin N., Maggiore S.M., Bersten A., Amin P., Cakar N., Suh G.Y., Abroug F., Jibaja M., Matamis D., Zeggwagh A.A., Sutherasan Y., Anzueto A., Esteban A., Inter-country variability over time in the mortality of mechanically ventilated patients (2020) INTENS CARE MED, 46 (3), 444-453. **IF: 17.6790**

Penuelas O., Frutos-Vivar F., Mancebo J., Invasive Mechanical Ventilation in Chronic Obstructive Pulmonary Disease Exacerbations (2020) SEMIN RESP CRIT CARE, 41 (6), 798-805. **IF: 2.0280**

Picetti E., Pelosi P., Taccone F.S., Citerio G., Mancebo J., Robba C., VENTI-LatOry strategies in patients with severe traumatic brain injury: The VENTILO Survey of the European Society of Intensive Care Medicine (ESICM) (2020) CRIT CARE, 24 (1). **IF: 6.4070**

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Ranieri V.M., Pettila V., Karvonen M.K., Jalkanen J., Nightingale P., Brealey D., Mancebo J., Ferrer R., Mercat A., Patroniti N., Quintel M., Vincent J.-L., Okkonen M., Meziani F., Bellani G., MacCallum N., Creteur J., Kluge S., Artigas-Raventos A., Maksimow M., Piippo I., Elima K., Jalkanen S., Jalkanen M., Bellingan G., Effect of Intravenous Interferon β-1a on Death and Days Free from Mechanical Ventilation among Patients with Moderate to Severe Acute Respiratory Distress Syndrome: A Randomized Clinical Trial (2020) JAMA-J AM MED ASSOC, 323 (8), 725-733. **IF: 45.5400**

Robba C, Poole D, McNett M, Asehnoune K, Bösel J, Bruder N, Chieregato A, Cinotti R, Duranteau J, Einav S, Ercole A, Ferguson N, Guérin C, Siempos I, Kurtz P, Juffermans NP, Mancebo J, Mascia L, McCredie V, Nin N, Oddo M, Pelosi P, Rabinstein AA, Neto AS, Seder DB, Skrifvars MB, Suarez JI, Taccone FS, Van der Jagt M, Citerio G, Stevens RD. Mechanical Ventilation in Patients with Acute Brain Injury: Recommendations of the European Society of Intensive Care Medicine Consensus. Intensive Care Med 2020; 46:2397-2410. DOI: 10.1007/s00134-020-06283-0. **IF: 17.679**

Rochwerg B, Einav S, Chaudhuri D, Mancebo J, Mauri T, Helviz Y, Goligher E. C, Jaber S, Ricard J-D, RittayamaiN, Roca O, Antonelli M, Maggiore S. M, Demoule A, Hodgson C. L, Mercat A, Wilcox M. E, Granton D, WangD, et al. The role for high flow nasal cannula as a respiratory support strategy in adults: a clinical practice guideline. Intensive Care Med 2020; 46:2226-2237. DOI: 10.1007/s00134-020-06312-y. **IF: 17.679**

Santos Rodriguez J.A., Mancebo Cortes J., Mortality study in patients at weaning from mechanical ventilation Estudio de mortalidad de pacientes en desconexión progresiva del ventilador (2020) MED INTENSIVA, 44 (8), 485-492. **IF: 2.3630**

Suarez Montero J.C., Caballero Gonzalez A.C., Martin Aguilar L., Mancebo Cortes J., Immune effector cell-associated neurotoxicity syndrome: A therapeutic approach in the critically ill Síndrome de neurotoxicidad

asociada a células inmunoefectoras: un enfoque terapéutico en el paciente crítico (2020) MED INTENSIVA. **IF: 2.3630**

Suclupe S., Martinez-Zapata M.J., Mancebo J., Font-Vaquer A., Castillo-Masa A.M., Vinolas I., Moran I., Robleda G., Medication errors in prescription and administration in critically ill patients (2020) J ADV NURS, 76 (5), 1192-1200. **IF: 2.5610**

Torrego A, Pajares V, Fernández-Arias C, Vera P, Mancebo J. Bronchoscopy in patients with COVID-19 with invasive mechanical ventilation: a single-center experience. Am J Respir Crit Care Med 2020; 202:284-287. Doi: 10.1164/rccm.202004-0945LE. **IF: 17.452**

Vassilakopoulos T., Toumpanakis D., Mancebo J., What's new about pulmonary hyperinflation in mechanically ventilated critical patients (2020) INTENS CARE MED. IF: **17.6790**

Diffusion Activities

Conferences

- Jordi Mancebo Cortés. ECCOR, ¿Cuál es la indicación realmente efectiva? LV Congreso Nacional SEMICYUC. Virtual, Málaga, 26 October 2020.
- Jordi Mancebo Cortés. PEEP titration in patients with ARDS. Pulmonary and Critical Care Medicine Grand Rounds, Banner University Medical Center, University of Arizona, Tucson, 4 February 2020.
- Jordi Mancebo Cortés. Estrategias para el weaning difícil de ventilación invasiva. 47 Congreso COMMEC 2020. Virtual, Ciudad de México, 10-14 November 2020.
- Jordi Mancebo Cortés. Cánula nasal de alto flujo en terapia intensiva. Revisión y puesta al día. 47 Congreso COMMEC 2020. Virtual, Ciudad de México, 10-14 November 2020.
- Jordi Mancebo Cortés. Titulando la PEEP en paciente COVID-19 con SDRA. Revisando la literatura. Retos del Soporte Respiratorio en el paciente COVID-19 "Experiencia de 2 continentes". Colombia, Bogotá, 18-21 November 2020.
- Jordi Mancebo Cortés. Daily Highlights: Acute Respiratory Failure. 33rd Annual Congress ESICM. Virtual, 6-9 December 2020.

Associated Groups

Pharmacy

Coordinator
Mangues Bafalluy, Maria Antònia (FGS)
mmangues@santpau.cat

Members
Barredo Hernández, Anna (IR)
Berga Garrote, Núria (IR)
Borrazas Olveira, M. Belén (IR)
Campo Troyano, Magí (IR)
Campos Baeta, Ylenia (FGS)
Cano Alonso, Manuel (IR)
Cardenete Ornaque, Juana (FGS)
Cascales Sánchez, Sara (IR)
De Dios López, Anna (FGS)
De Pourcq, Jan Thomas (FGS)
Feliu Ribera, Anna (FGS)
Fernández de Gamarra Martínez, Edurne (FGS)
Gámez Lechuga, María (FGS)
Garín Escrivà, Noé (FGS)
Garrido Alejos, Gemma (FGS)
Gomis Pastor, Mar (FGS)
Juanes Borrego, Ana María (FGS)
Juanes Borrego, Maria Elena (IR)
Lloret Lafuente, Gaspar (IR)
Lucas Alcahuz, Beatriz (FGS)
Masip Torné, Montserrat (FGS)
Moreno Martínez, Maria Estela (FGS)
Morillas Eroles, Paula (IR)
Pagès Puigdemont, Neus (FGS)
Pérez Llanos, Fiorella Jacqueline (IR)
Riba Solé, Mireia (FGS)
Rodríguez Murphy, Esther (FGS)
Rodríguez-Arias Pal, Ainhoa (IR)
Ruiz Jara, Erick A. (IR)
Ruíz Ramos, Jesús (FGS)
Vallez Valero, Lucía (FGS)
Villamarín Vallejo, Laura (FGS)
Zafri Kasas, Nabila (IR)

Main Lines of Research

- Pharmaceutical care and personalized medicine.
- Clinical epidemiology and public health.
- Artificial nutrition.
- Pharmaceutical formulation.
- Oncohaematology.
- Independent clinical trials.
- Innovation, artificial intelligence, & big data.

Scientific Challenges

- Evaluate the impact of different pharmaceutical care programmes on the effectiveness and the safety of pharmacological treatments: personalized medicine (clinical pharmacokinetics & pharmacogenetics), health education, medication reconciliation, identification and prevention of drug-related health problems, etc.
- Use of clinical epidemiology to gain evidence in patient care: association between risk factors and health outcomes, study of drug interactions, adherence to medication, assessment of regular clinical practice.
- Evaluate the impact of artificial nutrition on the clinical evolution of patients.
- Study the stability of cytostatics in different pharmaceutical forms.
- Determine the stability and the PK-PD of protein nanoparticles with antimetastatic activity.
- Actively cooperate in independent clinical trials conducted at Sant Pau.
- mHealth, eHealth, artificial intelligence, big data, innovative procedures, etc.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Oncogenesis and Antitumour Drugs (GOA) - CIBERBBN
- Clinical Haematology
- Medical Oncology
- Chronic Respiratory Diseases
- Emergency
- Cardiology
- Infectious Diseases (HIV)
- Genetics
- Pediatrics
- Biochemistry
- Dra Maria Antonia Mangues. Ensayo clínico piloto, aleatorizado, multicéntrico y abierto de uso combinado de hidroxicloroquina, azitromicina y tocilizumab para el tratamiento de la infección por SARS-CoV-2 (COVID-19). EudraCT 2020-001442-19. Convocatoria de proyectos de investigación sobre el SARS.CO-2 y la enfermedad COVID-19. Instituto de Salud Carlos III. Duration: 2020-2021. IP: Dr. Pere Domingo.
- María Gámez. Innovative nanotherapy for highly-metastatic peritoneal cancers: activating neuroreceptors to kill cancer stem cells. Instituto de Salud Carlos III. PI20/00623. Duration: 2021-2024. IP: M. Virtudes Céspedes Navarro.
- Maria Estela Moreno. Análisis y mejora de la adecuación de la prescripción de quimioterapia al final de la vida. Beca FIS, PI18/00034. Instituto de Salud Carlos III, 2018-2022.

External Collaborations

- Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBERBBN). Instituto de Salud Carlos III.
- Centro de Investigación en Salud Mental (CIBERSAM). Instituto de Salud Carlos III.
- Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER). Instituto de Salud Carlos III.

- Departament de Farmacologia, Toxicologia i Química Terapèutica, Facultat de Farmàcia, Universitat de Barcelona.
- Sociedad Española de Farmacia Hospitalaria.
- Societat Catalana de Farmàcia Clínica.
- Col·legi Oficial de Farmacèutics de Barcelona.
- Elena Juanes. Impact of exercise and mediterranean diet vs aspirin on live-birth rate and cardiovascular programming in vitro fertilization: a randomized study. Instituto de Salud Carlos III. Duration: 2020-2023.

Active Grants

- Pau Riera Armengol. Integració de la farmàcia hospitalària i comunitària per a la implementació de la farmacogenètica a la pràctica assistencial. Joaquim Bonal 2019. Societat Catalana de Farmàcia Clínica. Duration: 2019-2021. 12,000 €.
- Maria Antònia Mangues Bafalluy. Abordaje integral de los problemas de salud relacionados con los medicamentos: Código Medicamento. PI18/00889. Instituto de Salud Carlos III. Duration: 2019-2021. 72,000 €.
- Mar Gomis Pastor, M. Antònia Mangues Bafalluy. Marco de Colaboración en proyectos de telemedicina relacionados con la Plataforma mHealthcare. Amgen Pharma SL. Duration: 2019-2023.
- Maria Antònia Mangues Bafalluy (coordinator); Magí Campo Troyano; Anna de Dios López. Innovación en los sistemas de información para la gestión del almacenamiento, conservación y distribución de los medicamentos en el Hospital. Impacto en eficiencia. Programa de Becas de Investigación Científica Janssen-Cilag - Fundación Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau. Duration: 2020.
- Maria Elena Juanes. Fragilidad en pacientes con cirrosis: estudio del valor pronóstico del ángulo de fase en pacientes hospitalizados y efecto de una intervención multifactorial consistente en ejercicio físico a domicilio, aminoácidos ramificados y un probiótico multiespecies en la prevención de la fragilidad. Beca FIS, Instituto de Salud Carlos III. Duration: 2019-2022.
- Mar Gomis Pastor. Oncommunities: online cancer support communities. EIT Health (European Union) 2020. 19046. Duration: 28/03/2019.
- Pau Riera Armengol. Contrato Juan Rodés. JR20/00008. Instituto de Salud Carlos III. Duration: 2021-2024. 180,000 €.
- Mireia Riba Solé. Beca BMS para la realización del Máster de Inmunoterapia del Cáncer. SEFH-GEDEFO. Duration: 2019-2020.
- Beca para la realización del Diploma de Especialización en Terapias CAR-T para Farmacéuticos Hospitalarios y Hematólogos. Universitat de Valencia. SEFH, GETH. Duration: 2020.
- Beca para la realización del Máster GEDEFO en abordaje integral de hemato-oncología para farmacia hospitalaria. Universidad de Alcalá. SEFH, GETH. Duration: 2020.
- Noé Garín Escrivá. Beca para la realización del Máster en investigación clínica. Universidad Internacional Menéndez Pelayo and Sociedad Española de Farmacia Hospitalaria. Duration: 2020-2021.
- Pau Riera Armengol. Beca BPS per a la preparació de l'examen per assolir la certificació de Board Certified Oncology Pharmacist (BCOP). SEFH-GEDEFO. Duration: 2019-2020.

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

Grants Awarded in 2020

- Mar Gomis Pastor. PDTE. 20536. EIT Health. Duration: 2020. 8,614 €.

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

Awards

- Noemí Morollón, Roberto Belvís, Mar Gomis, Anna de Dios, Neus Pagès. Neurovation in Migraine, 2n edition. Sociedad Española de Neurología in collaboration with Lilly. First award. http://www.neurovationinmigraine.com/proyectos-finalistas
- A. Juanes, J. Ruiz, M.A. Mangues. Abordaje Integral de PSM en el Servicio de Urgencias: Código Medicamento. I Jornadas de Investigación del grupo Chonic-Pharma 2020. Chronic-Pharma. Best communication .

Doctoral Theses

- Mar Gomis Pastor. Improvement in clinical practice using mHealth technology. Universitat Autònoma de Barcelona (UAB). Directors: M.A. Mangues, E. Roig (until 9/2019). Date of defense: 16/06/2020

Scientific Production

Total Impact Factor: 73.687 · Mean Impact Factor: 4.335

Acosta-Garcıa H, Alfaro-Lara ER, Sánchez-Fidalgo S, Sevilla-Sanchez D, Delgado-Silveira E, Juanes-Borrego A, Santos-Ramos B. Intervention effectiveness by pharmacists integrated within an interdisciplinary health team on chronic complex patients. EUR J PUBLIC HEALTH. 2020 Oct 1;30(5):886-899. **IF: 2.4590**

Campos-Baeta Y, Saavedra-Mitjans M, Garin N, Cardenete J, Cardona D, Riera P. Physicochemical Compatibility of Dexmedetomidine With Parenteral Nutrition. NUTR CLIN PRACT 2020; 35(5):967-972. **IF: 2.5730**

Curto E, Torrego A, Garin N, Crespo-Lessmann A, Plaza V. HIV-infected patient with severe asthma treated with mepolizumab: case report. J ALLERGY CLIN IMMUNOL PRACT. Jul-Aug 2020;8(7):2414-2416. **IF: 14.1100**

Diaz A.P., Ramos J.R., Borrego A.M.J., Andion M.B., Campmany M.P., Bafalluy M.A.M., Anticholinergic burden in patients treated for constipation in an emergency department Carga anticolinérgica en pacientes atendidos por estreñimiento en un servicio de ugencias (2020) EMERGENCIAS, 32 (5), 349-352. **IF: 3.1730**

Falgas A., Pallares V., Unzueta U., Cespedes M.V., Arroyo-Solera I., Moreno M.J., Gallardo A., Mangues M.A., Sierra J., Villaverde A., Vazquez E., Mangues R., Casanova I., A CXCR4-targeted nanocarrier achieves highly selective tumor uptake in diffuse large B-cell lymphoma mouse models (2020) HAEMATOLOGICA, 105 (3), 741-753. **IF: 7.1160**

Gomis-Pastor M, Mirabet S, Roig E, Lopez L, Brossa V, Galvez-Tugas E, Rodriguez-Murphy E, Feliu A, Ontiveros G, Garcia-Cuyàs F, Salazar A,

Mangues MA. Interdisciplinary Mobile Health Model to Improve Clinical Care after Heart Transplantation: Implementation Strategy Study. JMIR CARDIO 2020;4(1). [doi: 10.2196/19065]. **IF: 4.945**

Gomis-Pastor M., Roig E., Mirabet S., T De Pourcq J., Conejo I., Feliu A., Brossa V., Lopez L., Ferrero-Gregori A., Barata A., Mangues M.A., A mobile app (mHeart) to detect medication nonadherence in the heart transplant population: Validation study (2020) JMIR MHEALTH UHEALTH, 8 (2), e15957-. **IF: 4.3130**

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Diffusion Activities

Scientific Diffusion

- M. Antònia Mangues. Viaje al 2020: ¿Cómo nos preparamos para el 2030? Congreso Virtual de la Sociedad Española de Farmacia Hospitalaria 2020. 20 October 2020.
- M. Antònia Mangues. Simposium Biogen "Valor y sostenibilidad. Un equilibrio en equipo". Congreso Virtual de la Sociedad Española de Farmacia Hospitalaria 2020. 21 October 2020.
- M. Antònia Mangues. Moderator. Simposium Amgen "Un nuevo Horizonte: innovación tecnológica en la farmacia hospitalaria". Congreso Virtual de la Sociedad Española de Farmacia Hospitalaria 2020. 22 October 2020.
- M. Antònia Mangues. Round table. La farmacia hospitalaria después del COVID. UPF-BSM Executive Webinar Series. Lecciones de la gestión de la pandemia para el modelo de atención oncológica. 19 November 2020.
- Noé Garin Escrivá. Coordinator and Moderator. 1ª Comunidad Virtual de Farmacéuticos Hospitalarios en el Área de Respiratorio de Catalunya, 4 June 2020.
- Noé Garin Escrivá. Coordinator and Moderator. Taller atención farmacéutica 360º al paciente con asma: seguimiento del paciente en la consulta farmacéutica. 65 Congreso de Farmacia Hospitalaria de la Sociedad Española de Farmacia Hospitalaria. 22 October 2020.
- Noé Garin Escrivá. Speaker. Fármacos biológicos para el tratamiento del asma grave. Farmacia Hospitalaria y tratamiento del asma grave según GEMA 5.0. Sociedad Española de Neumología y Cirugía Torácica. Virtual, 24 June 2020.
- Edurne Fernández de Gamarra. Speaker. Webinar COVID-19 patient case: How to manage uncertainty during the pandemic. In: "Responding to the Pandemic Together" Programme; Event 33: COVID Complex Case Presentations. Sección de Farmacia Hospitalaria de la Federación Internacional de Farmacéuticos (FIP). 28 September 2020.
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- Edurne Fernández de Gamarra. Director of the Curs Teòric-Pràctic d'Actualització en Farmacoteràpia. Societat Catalana de Farmàcia Clínica, Fundació Institut Interuniversitari - InterAc Salut. 2019-2020, 2020-2021.
- Estela Moreno. Moderator. Round table "El cáncer en Europa, Historia de un esfuerzo común". 8 Congreso de Oncología Médica, Hematología y Farmacia Oncohematológica. Tendiendo Puentes. Toledo, Virtual, 24-28 November 2020.
- Estela Moreno. Moderator. Sesión Evaluación y seguimiento de los beneficios de los fármacos oncológicos. 65 Congreso SEFH. Virtual, 20-22 October 2020.
- Estela Moreno. Coordinator. Quinta Reunión Anual del Grupo de trabajo GEDEFO: Atención Farmacéutica al paciente oncohematológico. Madrid, 3-4 March 2020.
- Pau Riera. Webinar: Genotipado del gen UGT1A1 y su relevancia clínica. Sociedad Española de Farmacia Hospitalaria. 10 November 2020.
- Ana Juanes Borrego. Jesús Ruiz Ramos. 65 Taller Congreso SEFH - Taller Atención Farmacéutica al Paciente Frágil en Urgencias. Barcelona, 21 October 2020.
- Neus Pagès. Round table. Farmàcia hospitalària i COVID. Cicle de debats 2020. Consorci de Salut i Social de Catalunya. 2020.

Dissemination to Society

- M. Antònia Mangues. Director. XLVII Curso de Farmacia Clínica Joaquín Bonal. Barcelona, 4-8 February 2020. Accredited by Consell Català de Formació Continuada Professions Sanitàries- Comisión de Formación Continuada del Sistema Nacional de Salud. Teachers: All pharmaceutical members of the group.
- Anna Feliu Ribera, Edurne Fernández de Gamarra Martínez, Noé Garin Escrivà, M. Estela Moreno Martínez, Mireia Riba (Associate teachers). Atención farmacéutica y farmacia clínica II. Pharmacy Degree; Facultat de Ciències de la Salut Blanquerna. Barcelona, 2020.
- Ana Juanes Borrego, Jan Thomas De Pourcq (Associate teachers). Pharmacy Degree. Departament de Farmàcia Clínica. Universitat de Barcelona.
- Montserrat Masip Torné (Associate teacher). Tutoring of students. Pharmacy Degree. Universitat de Barcelona.
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- M. Antònia Mangues. Speaker. Webinar "Liderazgo en sanidad durante y después de la crisis COVID-19". BCN Management Company. 27 May 2020.
- Anna de Dios. Construint benestar en càncer a través d'un ecosistema de salut digital a Europa: proposta Oncommun. Institut Català d'Oncologia. 3 December 2020.
- Mar Gomis. Informative session on the mHeart technology platform. Patients transplants in follow-up to the Hospital de Sant Pau. 20 January 2020.
- Estela Moreno. Coordinator. XVII Seminario CISFARH: El paciente: centro en la toma de decisiones asistenciales". Fundación Gaspar Casal. Virtual, 23-24 September 2020.
- Edurne Fernández de Gamarra. Speaker. La Atención Farmacéutica y el papel del Farmacéutico de Hospital en el Sistema Nacional de Salud. Máster de los Departamentos Científicos de la Industria Farmacéutica. ESAME Pharmaceutical Business School.13th Edition. Barcelona, 2020-2021.

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Main Lines of Research

- Biological therapy in dermatology.
- Genome-wide association studies in psoriasis.
- Medical and physical treatment options for vascular tumours.
- Psychopathological studies of patients with chronic dermatological disorders.
- Innate and acquired immunity-mediated dermatological diseases.

Scientific Challenges

- Ensure a stable clinical research infrastructure and staff.
- Foster interdepartmental collaborative research.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Parkinson Disease and Movement Disorders.
- Inflammatory Diseases.

Scientific Production

Total Impact Factor: 174.518 · Mean Impact Factor: 4.257

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Puig L., Tsai T.-F., Bhutani T., Uy J., Ramachandran P., Song M., You Y., Gooderham M., Lebwohl M., Safety in moderate-to-severe plaque psoriasis patients with latent tuberculosis treated with guselkumab and anti-tuberculosis treatments concomitantly: results from pooled phase 3 VOYAGE 1 & VOYAGE 2 trials (2020) J EUR ACAD DERMATOL, 34 (8), 1744-1749. **IF: 5.2480**

Reich K., Puig L., Szepietowski J.C., Paul C., Lacour J.P., Tsianakas A., Sieder C., Rissler M., Pournara E., Orsenigo R., Secukinumab dosing optimization in patients with moderate-to-severe plaque psoriasis: results from the randomized, open-label OPTIMISE study (2020) BRIT J DERMATOL, 182 (2), 304-315. **IF: 7.0000**

Reich K., Warren R.B., Iversen L., Puig L., Pau-Charles I., Igarashi A., Ohtsuki M., Falques M., Harmut M., Rozzo S., Lebwohl M.G., Cantrell W., Blauvelt A., Thaci D., Long-term efficacy and safety of tildrakizumab for moderate-to-severe psoriasis: pooled analyses of two randomized phase III clinical trials (reSURFACE 1 and reSURFACE 2) through 148 weeks (2020) BRIT J DERMATOL, 182 (3), 605-617. **IF: 7.0000**

Rivera R., Velasco M., Vidal D., Carrascosa J.M., Dauden E., Vilarrasa E., Notario J., Ruiz-Villaverde R., Yanguas I., Garcia-Latasa F.J., Ferran M., Lazaro-Simo A., de la Cueva P., Salgado-Boquete L., Belinchon I., The effectiveness and safety of ixekizumab in psoriasis patients under clinical practice conditions: A Spanish multicentre retrospective study (2020) DERMATOL THER, 33 (6). **IF: 2.3270**

Rodriguez-Jimenez P., Jimenez Y.D., Reolid A., Sanmartin-Jimenez O., Garces J.R., Rodriguez-Prieto M.A., Medrano R.M., Vilarrasa E., de Eusebio-Murillo E., Redondo P., Ciudad-Blanco C., Morales-Gordillo V., Toll-Abello A., et al. State of the art of Mohs surgery for rare cutaneous tumors in the Spanish Registry of Mohs Surgery (REGESMOHS) (2020) INT J DERMATOL, 59 (3), 321-325. **IF: 2.0670**

Romani J., Vilarrasa E., Martorell A., Fuertes I., Ciudad C., Molina-Leyva A., Ustekinumab with intravenous infusion: Results in hidradenitis suppurativa (2020) DERMATOLOGY, 236 (1), 21-24. **IF: 3.6950**

Ruiz de Morales J.M.G., Puig L., Dauden E., Canete J.D., Pablos J.L., Martin A.O., Juanatey C.G., Adan A., Montalban X., Borruel N., Orti G., Holgado-Martin E., Garcia-Vidal C., Vizcaya-Morales C., Martin-Vazquez V., Gonzalez-Gay M.A., Critical role of interleukin (IL)-17 in inflammatory and immune disorders: An updated review of the evidence focusing in controversies (2020) AUTOIMMUN REV, 19 (1). **IF: 7.7670**

Sanz-Martinez M.T., Moga E., Sanchez Martinez M.A., Zamora Atenza C., Vidal S., Juarez C., Puig L., High Levels of Platelet-Lymphocyte Complexes in Patients with Psoriasis Are Associated with a Better Response to Anti–TNF-α Therapy (2020) J INVEST DERMATOL, 140 (6), 1176-1183. **IF: 7.1430**

Serra E., Campo C., Novak Z., Majorek-Olechowska B., Pulka G., Garcia-Bea A., Labeaga L., Efficacy and safety of bilastine in reducing pruritus in patients with chronic spontaneous urticaria and other skin diseases: an exploratory study (2020) J DERMATOL TREAT, 31 (3), 270-278. **IF: 2.1560**

Torres T., Puig L., Managing Cutaneous Immune-Mediated Diseases During the COVID-19 Pandemic (2020) AM J CLIN DERMATOL, 21 (3), 307-311. **IF: 5.0560**

Zouboulis C.C., Hansen H., Caposiena Caro R.D., Damiani G., Delorme I., Pascual J.C., Reguiai Z., Trigoni A., Vilarrasa E., Roldan F.A., Adalimumab dose intensification in recalcitrant hidradenitis suppurativa/Acne inversa (2020) DERMATOLOGY, 236 (1), 25-30. **IF: 3.6950**

Associated Groups

Anaesthesiology

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Felipe Correoso, María Mar (FGS)
Fernández Núñez, José Anton (FGS)
Font Gual, Adrià (FGS)
Galán Serrano, Josefa (FGS)
García Álvarez, María Mercedes (FGS)
Garcia Muret, Albert (FGS)
Gil de Bernabé Sala, Maria Àngels (FGS)
Gil Sánchez, José María (FGS)
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Gómez Caro, Ana M. (FGS)
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Herranz Pérez, Gracia (FGS)
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India Aldana, Inmaculada (FGS)
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Parera Ruiz, Ana (FGS)
Peláez Vaamonde, Xavier (FGS)
Rivilla Lizano, Maria Teresa (FGS)
Rodríguez Prieto, Mireia (FGS)
Solans Duran, José Ramón (FGS)
Villamor Vázquez, José María (FGS)

Main Lines of Research

- Intraoperative respiratory strategies.
- Management of preoperative anxiety in paediatric anaesthesia and surgery.
- Intraoperative hypothermia management.
- Perioperative TVP management.
- Perioperative medicine.
- Patient blood management.
- Massive blood transfusion and associated haemostatic disorders.
- Loco-regional anaesthesia and ultrasound plexus identification.
- Echocardiography.
- ECMO therapy.
- Acute and chronic pain management.
- New modalities of care delivery: Preoperative prehabilitation, team preoperative evaluations and perioperative care in ophthalmic surgery.
- Social communication of peri-partum process.

Scientific Challenges

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

Collaborations

Collaborations with other IIB Sant Pau Groups

- Study ALBUMINA-CEC. Influencia de la albúmina en CEC sobre el desarrollo de disfunción renal aguda postoperatoria asociada a la cirugía cardíaca bajo circulación extracorpórea. CEIC Hospital de Sant Pau. 2017-2020.
- Study HIPOTERMIA QUIR. Análisis de la eficacia de los sistemas de calentamiento por convección en la prevención de la hipotermia intraoperatoria no deseada. IR Hospital de Sant Pau. 2017-2020.
- CC-GERIATRIA. Análisis de la relación coste-beneficio de la cirugía cardíaca en pacientes de edad superior a 80 años. Hospital de la Santa Creu i Sant Pau - IR Hospital de Sant Pau. 2017-2020.
- Estudio COVID. Correlacion entre el patrón de hipercoaguabilidad en los test viscoelásticos y el patrón tromboinflamatorio analítico en los pacientes críticos COVID, CEIC – Hospital de Sant Pau, 2020.

External Collaborations

- POPULAR (Postanesthesia PULmonary complications After use of muscle Relaxants in Europe), multicentre observational study. European Society of Anaesthesiology (ESA).
- Analysis of the Hemostatic Potential of Coagulation Factor Concentrates in an In Vitro Model of Extreme Hemodilution. Heimburger Grant.
- Collaboration in Competitive, International and Multicenter Study POISE-3 Perioperative ischemic evaluation Population Health Research Institute. Hamilton General Hospital Canada NCT 02546648
- Collaboration in Competitive and International Study iPROVE-OLV. Instituto de International de Valencia. Perioperative open-lung ventilatory strategy during one-lung ventilation NCT03182062.

- Collaboration in International and Multicenter Study COP-AF Population Health Research Institute. Hamilton General Hospital Canada NCT 03310125
- Collaboration in Competitive Study entitled: AFFECT. Ensayo clínico aleatorizado multicéntrico paralelo en pacientes antiagregados con fractura pertrocantérea de fémur que evalúa una estrategia para acortar el tiempo hasta la cirugía. PI16/01879 - Instituto Carlos III. 2017-2020.
- Collaboration in Competitive, International and Multicenter Study entitled: HIP- ATTACK. Hip fracture accelerated surgical care and TreaTment Track. Population Health Research Institute. Hamilton General Hospital Canada CEIC 15/294 - Population Health Research Institute. Hamilton General Hospital Canada. NCT 01661101.
- Study: IPEGASUS. Individualized Perioperative goal-directed Therapy in Major Abdominal Surgery.

Active Grants

- Pilar Paniagua Iglesias. Evaluación del grado de cumplimiento e impacto clínico de los protocolos de transfusión masiva (PTM). PI16/01134. Instituto de Salud Carlos III. Duration: 2017-2021. 82,000 €.
- Gonzalo Azparren Cabezón. iPEGASUS (Individualized Perioperative goal- directed Therapy in Major Abdominal Surgery). NCT 030221525 - Hamburg University, Deutchland. Duration: 2017-2019.
- Mar Felipe Correoso. PHOENICS: Prospective randomized controlled double-blind multi-centre multinacional study on the safety and efficacy of 6% HYdroxyethyl starch (HES) solution versus an electrolyte solution in patients undergoing elective abdominal surgery. Duration: 2017-2020.
- Marc Bausili. AdFIRst Adjusted Fibrinogen replacement strategy. A randomized, active-controlled, multicenter, phase III study investigating efficacy and safety of intra-operative use of BT524 (human fibrinogen concentrate) in subjects undergoing major spine surgery. NCT03444324. Duration: 2018-2020.
- Inmaculada India. PALLAPUPAS: Influencia de la intervención de Pallapupas sobre la ansiedad preoperatoria infantil medida por niveles de cortisol salival. Estudio. 2018-2020

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

Doctoral Theses

- Rivilla Lizano, Maria Teresa. Relación de la presión coloidosmótica y del índice de briones con la morbimortalidad en el postoperatorio precoz de la cirugía cardiaca. Universitat Autònoma de Barcelona. Director: Xavier León Vintró. Date of defense: 17/07/2020.

Scientific Production

Total Impact Factor: 62.144 · Mean Impact Factor: 4.439

Albert C., Zapf A., Haase M., Rover C., Pickering J.W., Albert A., Bellomo R., Breidthardt T., Camou F., Chen Z., Chocron S., Cruz D., de Geus H.R.H., Devarajan P., Di Somma S., Doi K., Endre Z.H., Garcia-Alvarez M., Hjortrup P.B., et al. Neutrophil Gelatinase-Associated Lipocalin Measured on Clinical Laboratory Platforms for the Prediction of Acute Kidney Injury and the Associated Need for Dialysis Therapy: A Systematic Review and Meta-analysis (2020) AM J KIDNEY DIS, 76 (6), 826-841.e1. **IF: 6.6180**

Carmona García P., García Fuster R., Mateo E., Badía Gamarra S., López Cantero M., Gutiérrez Carretero E., Maestre M.L., Legnameh V., Fitai G., Vivesj M., Koller Bernhardk T., Sánchez Pérez E., Miralles Bagán J., Italiano S., Ecocardiografía transesofágica intraoperatoria en cirugía cardiovascular. documento de consenso de la SEDAR y de la SECCE. (2020) REVISTA ESPAÑOLA DE ANESTESIOLOGIA Y REANIMACIÓN DOI: 10.1016/j.redar.2020.06.001 **IF: 0.9**

De Salazar PM, Gómez-Barroso D, Pampaka D, Gil JM, Peñalver B, Fernández-Escobar C, Lipsitch M, Larrauri A, Goldstein E, Hernán MA. Lockdown measures and relative changes in the age-specific incidence of SARS-CoV-2 in Spain. Epidemiol Infect. 2020 Oct 21;148:e268. doi: 10.1017/S0950268820002551. Affiliations expand PMID: 33081851 PMCID: PMC7674783 DOI: 10.1017/S0950268820002551. **IF: 2.152**

Ferrando C., Aldecoa C., Unzueta C., Belda F.J., Librero J., Tusman G., Suarez-Sipmann F., Peiro S., Pozo N., Brunelli A., Garutti I., Gallego C., Rodriguez A., Garcia J.I., Diaz-Cambronero O., Balust J., Redondo F.J., de la Matta M., et al. Effects of oxygen on post-surgical infections during an individualised perioperative open-lung ventilatory strategy: a randomised controlled trial (2020) BRIT J ANAESTH, 124 (1), 110-120. **IF: 6.8800**

Galan J., Mateo E., Carmona P., Gajate L., Mazer C.D., Martinez-Zapata M.J., Restrictive or liberal transfusion for cardiac surgery: Spanish results of a randomized multicenter international parallel open-label clinical trial Transfusión Restrictiva o liberal en cirugía cardiaca: Resultados españoles de un ensayo clínico aleatorizado, multicéntrico, internacional, paralelo y abierto (2020) MED INTENSIVA. **IF: 2.3630**

Kullmar M., Massoth C., Ostermann M., Campos S., Grau Novellas N., Thomson G., Haffner M., Arndt C., Wulf H., Irqsusi M., Monaco F., Di Prima A., Garcia Alvarez M., Italiano S., Cegarra SanMartin V., Kunst G., Nair S., L'Acqua C., Hoste E.A.J., Vandenberghe W., Honore P., Kellum J., Forni L., Grieshaber P., Weiss R., Gerss J., Wempe C., Meersch M., Zarbock A., Biomarker-guided implementation of the KDIGO guidelines to reduce the occurrence of acute kidney injury in patients after cardiac surgery (PrevAKI-multicentre): protocol for a multicentre, observational study followed by randomised controlled feasibility trial (2020) BMJ OPEN, 10 (4), e034201-. **IF: 2.4960**

Kullmar M., Weiss R., Ostermann M., Campos S., Grau Novellas N., Thomson G., Haffner M., Arndt C., Wulf H., Irqsusi M., Monaco F., Di Prima A.L., Garcia-Alvarez M., Italiano S., Felipe Correoso M., Kunst G., Nair S., L'Acqua C., Hoste E., Vandenberghe W., Honore P.M., Kellum J.A., Forni L., Grieshaber P., Wempe C., Meersch M., Zarbock A., A multinational observational study exploring adherence with the kidney disease: Improving global outcomes recommendations for prevention of acute kidney injury after cardiac surgery (2020) ANESTH ANALG, 130 (4), 910-916. **IF: 4.3050**

López AM, Belda Yo, Bermejo S, Parra L, Áñez C, Borràs R, Sabaté S, Carbonell N, Marco G, Pérez J, Massó E, Soto J M, Boza E, Gil JM, Serra M, Tejedor V, Tejedor A, Roza J, Plaza U, Tena B, Valero R, Secció de via aèria (SEVA) de la SCARTD. Recomendaciones para la evaluación y manejo de la vía aérea difícil anticipada y no anticipada de la Societat Catalana d'Anestesiologia, Reanimació i Terapèutica del Dolor, basadas en la adaptación de guías de práctica clínica y consenso de expertos Rev Esp Anestesiol Reanim. Junio-julio de 2020; 67 (6): 325-342. doi: 10.1016 / j.redar.2019.11.011. Epub 2020 27 May. Montesa A., Rocab G, Cantilloc J, Sabaté S, for the GENDOLCAT Study Group. Presurgical risk model for chronic postsurgical pain based on 6 clinical predictors: a prospective external validation. PAIN, 161 (2020) 2611–2618 doi: 10.1097/j.pain.0000000000001945 **IF: 5.483**

Rodriguez-Jimenez P., Jimenez Y.D., Reolid A., Sanmartin-Jimenez O., Garces J.R., Rodriguez-Prieto M.A., Medrano R.M., Vilarrasa E., de Eusebio-Murillo E., Redondo P., Ciudad-Blanco C., Morales-Gordillo V., Toll-Abello A., Artola-Igarza J.L., Pacheco M.L.A., Markixana I.A., Fernandez R.S., Rubio A.A., Vazquez-Veiga H., Florez-Menendez A., et al. State of the art of Mohs surgery for rare cutaneous tumors in the Spanish Registry of Mohs Surgery (REGESMOHS) (2020) INT J DERMATOL, 59 (3), 321-325. **IF: 2.0670**

Ripollés-Melchor J, Abad-Motos A, Díez-Remesal Y, Aseguinolaza-Pagola M, Padin-Barreiro L, Sánchez-Martín R, Logroño-Egea M, Catalá-Bauset

JC, García-Orallo S, Bisbe E, Martín N, Suárez-de-la-Rica A, Cuéllar-Martínez AB, et al. Association Between Use of Enhanced Recovery After Surgery Protocol and Postoperative Complications in Total Hip and Knee Arthroplasty in the Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol in Elective Total Hip and Knee Arthroplasty Study (POWER2). JAMA SURG. 2020 Apr 1;155(4):e196024. doi: 10.1001/jamasurg.2019.6024. **IF: 13.625**

Senturk M., El Tahan M.R., Szegedi L.L., Marczin N., Karzai W., Shelley B., Piccioni F., Granell Gil M., Rex S., Sorbello M., Bence J., Cohen E., Gregorio G.D., Kawagoe I., Globokar M.D., Jimenez M.-J., Licker M.-J., Mourisse J., Mukherjee C., Navarro R., Neskovic V., Paloczi B., Paternoster G., Pelosi P., Salaheldeen A., Stoica R., Unzueta C., Vanpeteghem C., Vegh T., Wouters P., Yapici D., Guarracino F., Thoracic Anesthesia of Patients With Suspected or Confirmed 2019 Novel Coronavirus Infection: Preliminary Recommendations for Airway Management by the European Association of Cardiothoracic Anaesthesiology Thoracic Subspecialty Committee (2020) J CARDIOTHOR VASC AN, 34 (9), 2315-2327. **IF: 2.2580**

Sessler D.I., Conen D., Leslie K., Yusuf S., Popova E., Graham M., Kurz A., Villar J.C., Mrkobrada M., Sigamani A., Biccard B.M., Meyhoff C.S., Parlow J.L., Guyatt G., Xavier D., Chan M.T.V., Kumar P.A., Forget P., Malaga G., et al. One-year results of a factorial randomized trial of Aspirin versus placebo and clonidine versus placebo in patients having noncardiac surgery (2020) ANESTHESIOLOGY, 132 (4), 692-701. **IF: 7.0670**

Warrillow S., Fisher C., Tibballs H., Bailey M., McArthur C., Lawson-Smith P., Prasad B., Anstey M., Venkatesh B., Dashwood G., Walsham J., Holt A., Wiersema U., Gattas D., Zoeller M., Garcia Alvarez M., Bellomo R., Coagulation abnormalities, bleeding, thrombosis, and management of patients with acute liver failure in Australia and New Zealand (2020) J GASTROEN HEPATOL, 35 (5), 846-854. **IF: 3.4370**

Warrillow S., Fisher C., Tibballs H., Bailey M., McArthur C., Lawson-Smith P., Prasad B., Anstey M., Venkatesh B., Dashwood G., Walsham J., Holt A., Wiersema U., Gattas D., Zoeller M., Garcia Alvarez M., Bellomo R., Continuous renal replacement therapy and its impact on hyperammonaemia in acute liver failure (2020) CRIT CARE RESUSC, 22 (2), 158-165. **IF: 2.4930**

Diffusion Activities

Dissemination to Society

- Gynecology and Obstetrics, Anesthesiology, Midwifery Team (Co-organizer). Información sobre el proceso del parto. Parto natural. Analgesia obstétrica. Information Sessions on the Delivery Process. Monthly meeting for two months in physical presence and then online.

Scientific Diffusion

- P. Paniagua, T. Koller, A. Parera, A, Gómez Caro. Organizers. Curso sobre Alteraciones de la Hemosatasia Asociadas al Sangrado Masivo.

Associated Groups

Plastic Surgery

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Vilchis López, Roberto (IR)

Main Lines of Research

- Application of imaging techniques for intraoperative studies of perforator vessels with the aim to improve the design of flaps, evaluate the suitable blood perfusion and the viability of the flaps avoiding secondary postoperative complications secondary to vascular supply problems.
- Anatomical studies of the variability of perforator vessels in the following regions: internal mammary artery, inferior epigastric system and internal superficial circumflex system.
- Study of the perioperative and postoperative factors that influence on the viability of the microsurgical free flaps.
- Research using indocyanine green angiography and thermography on the concept of vascular blood balance following the dissection of a perforator flap.
- Research using indocyanine green angiography on the relationship between different anatomical patterns of lymphatic vessels in the upper extremities and their likelihood of developing lymphedema in affected breast cancer patients.
- Feasibility of research using animal models on the major surgical and nonsurgical techniques that currently exist to treat secondary lymphatic insufficiency: autologous fat grafting, autologous stem cell (bone marrow) transplant, lymphovenous anastomosis, free flap of vascularised autologous lymph nodes.
- Lymphangiogenesis studies using a comparative animal model between transplantation of adipose tissue stem cells vs bone marrow stem cells, lymphovenous anastomoses and transplantation of vascularized lymph nodes for lymphoedema treatment.
- Research using an experimental animal model on lymphangiogenesis and regeneration of the lymphatic system after a model of obstructive lymphoedema.
- Imaging studies using lymphography and indocyanine green, as well as lympho-magnetic resonance techniques.
- Correlation between indocyanine green lymphography and thermography to evaluate areas of dermal backflow in lymphoedema.
- Correlation between indocyanine green lymphography and thermography to evaluate perfusion in free flaps.

Scientific Challenges

- Improve the preoperative planning of perforator flaps with the help of advances in imaging techniques and knowledge of anatomy.
- Consolidate and optimize preoperative management techniques for locating the most suitable perforating vessels for each microsurgical flap.
- Minimize intra- and post-operative complications in perforator flaps using new imaging techniques to visualize intraoperatively patterns of vascularisation of the flaps and vascular blood supply dominance.
- Lymphoedema prevention in those patients with mastectomy in which we perform procedures to detect sentinel lymph nodes and/or axillaries lymph node dissections using new surgical techniques for treatment of this disease (lymphatic venous anastomosis, transfer of vascularised lymph nodes, etc.).
- Identification using indocyanine green angiography for patients affected by breast cancer with a major risk of developing secondary lymphoedema.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Collaboration with Clinical Epidemiology and Health Services research group (Xavier Bonfill, Pablo A .Coello) at the Cancer and Life Quality Study.
- Collaboration with Neuromuscular Diseases research group (Isabel Illa) at project A Double- Blind, Placebo- Controlled, Multicenter Study with an open-label extension to evaluate the efficacy and safety of SRP-4045 and SRP-4053 in Patients with Duchenne Muscular Dystrophy.

External Collaborations

- A Randomized, Double-blind, Placebo-controlled, Efficacy and Safety Study of WVE- 210201 in Ambulatory Patients with Duchenne Muscular Dystrophy. Start: 2019.
- A Phase 2, Two-Part, Multiple-Ascending-Dose Study of SRP-5051 for Dose Determination, then Dose Expansion, in Patients with Duchenne Muscular Dystrophy Amenable to Exon 51-Skipping Treatment. Start: 2019.
- Advances in imaging techniques and theraphy in muscle dystrophies: evaluation and treatment of the fibrosis. Beca FIS. Clinical trial in conjunction with the Department of Neurology.

Scientific Production

Total Impact Factor: 12.6620 · Mean Impact Factor: 2.5324

Abdelfattah U., Jaimez P.M., Clavero J.A., Bellantonio V., Pons G., Masia J., Correlation between superficial and deep lymphatic systems using magnetic resonance lymphangiography in breast cancer-related lymphedema: Clinical implications (2020) J PLAST RECONSTR AES, 73 (6), 1018-1024. **IF: 2.3900**

Cheng M.-H., Chang D.W., Masia J., Koshima I., Introduction of the 8th world symposium for lymphedema surgery (2020) J SURG ONCOL, 121 (1), 7-. **IF: 2.7710**

Masia J., The largest multicentre data collection on prepectoral breast reconstruction: The iBAG study (2020) J SURG ONCOL, 122 (5), 848-860. **IF: 2.7710**

Pappalardo M., Chang D.W., Masia J., Koshima I., Cheng M.-H., Summary of hands-on supermicrosurgery course and live surgeries at 8th world symposium for lymphedema surgery (2020) J SURG ONCOL, 121 (1), 8-19. **IF: 2.7710**

Tang J.B., Landin L., Cavadas P.C., Thione A., Chen J., Pons G., Masia J., Unique Techniques or Approaches in Microvascular and Microlymphatic Surgery (2020) CLIN PLAST SURG, 47 (4), 649-661. **IF: 1.9590**

Associated Groups

Palliative Care

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Güell Pérez, Ernest (FGS)
Prada Jasimez, María Luisa (FGS)

Main Lines of Research

- Symptom evaluation and control: pain, dyspnoea, cognitive failure, complex situations.
- End-of-life ethical issues: sedation, expression of a desire for death, euthanasia.
- Psychosocial care for patients and families: adaptation to the terminal situation, grief, spiritual needs.
- Training in palliative care: training needs, outcomes.
- Art therapy.

Scientific Challenges

- Psychosocial care for patients and families.
- Counselling and hospital sensitization.
- Quality evaluation and control.
- Symptom evaluation and control.
- Integrated care: analysis and care of end-of-life emotional, social and spiritual dimensions and adequate ethical reflection in decision-making.

Scientific Production

Total Impact Factor: 2.4960 · Mean Impact Factor: 2.4960

Pergolizzi D., Crespo I., Balaguer A., Monforte-Royo C., Alonso-Babarro A., Arantzamendi M., Belar A., Centeno C., Goni-Fuste B., Julia-Torras J., Martinez M., Mateo-Ortega D., May L., Moreno-Alonso D., Nabal Vicuna M., Noguera A., Pascual A., Perez-Bret E., Rocafort J., Rodriguez-Prat A., Rodriguez D., Sala C., Serna J., Porta-Sales J., Proactive and systematic multidimensional needs assessment in patients with advanced cancer approaching palliative care: A study protocol (2020) BMJ OPEN, 10 (2). **IF: 2.4960**

Other Publications

- Fontecha-Gómez B, Ugarte M, Pascual A. Les cures pal·liatives: on som i cap a on hem d'anar. Un canvi de paradigma. Annals de Medicina 2020; 103:50-52.

Books or Chapters with ISBN

- Fariñas O, Pascual A. Dolor en el paciente con cáncer y cuidados paliativos. In: Catalá E (ed): Manual de tratamiento del Dolor. Barcelona: Permanyer 2020; pp 485-510 ISBN: 978-84-18150-66-1

Diffusion Activities

Scientific Diffusion

- Antonio Pascual. Sedación y últimos cuidados. XIII Curso SEOM para Residentes: Control de Síntomas y Terapia de Soporte. Valencia, Spain, January 2020.
- Antonio Pascual, Ernest Güell, Oscar Fariñas, Nadia Collette, María Luisa Prada. Lecturers. Máster en Atención paliativa integral a personas con enfermedades avanzadas. Hospital Sant Pau - Universitat Autònoma de Barcelona, January-June 2020.
- Nadia Collette. Lecturer. Arteterapia en el final de la vida. Máster de Psicoterapia y Psicología Clínica, Universitat de València. Valencia, Spain, December 2020.
- Nadia Collette. Lecturer. Arteterapia en cuidados paliativos y en duelo. Master de Arteterapia, Universidad Politécnica de Valencia e IDECART (Instituto para la Investigación y el Desarrollo de los procesos de creación y arteterapia). Valencia, Spain, May 2020.

- Antonio Pascual, Nadia Collette. Como dar malas noticias. Taller de simulación para Residentes de 2º año. Comisión de Docencia. Hospital Sant Pau. January 2020.
- Nadia Collette. Scientific Session. Arteterapia y aspectos traumáticos del sufrimiento en el final de la vida. Grupo de Psicología y Psicooncología en Cuidados Paliativos. Societat Catalano-Balear de Cures Pal·litives, February 2020.
- Ernest Güell, M. Luisa Prada, Oscar Fariñas, Antonio Pascual. Descripción del grado de complejidad de los pacientes derivados a centros sociosanitarios desde una unidad de agudos de Cuidados Paliativos. XI Congrés de la Societat Catalano-Balear de Cures Pal·liatives. Barcelona, February, 2020.
- M. Luisa Prada, Ernest Güell, Oscar Fariñas, Antonio Pascual. Características de los pacientes derivados a centros sociosanitarios desde una unidad de Cuidados Paliativos agudos. XI Congrés de la Societat Catalano-Balear de Cures Pal·liatives. Barcelona, February, 2020.
- Nadia Collette. Arteterapia en cuidados paliativos. Máster de Enfermería Oncológica. Escola d'Infermeria de l'Hospital Santa Creu i Sant Pau, April 2020.
- Antonio Pascual. Investigación en el final de la vida. Máster en Investigación Clínica Aplicada en Ciencias de la Salud. UAB. Barcelona, April 2020.
- Nadia Collette. El valor del legado como beneficio específico de la arteterapia en el final de la vida. IV Jornadas Nacionales de Investigación en Arteterapia. Virtual, October 2020.
- Antonio Pascual. Palliative care in advanced heart failure: not too late. European Society Congress Heart Failure. Virtual 2020.
- Antonio Pascual. Dealing with caregiver burden in advanced heart failure. European Society Congress Heart Failure. Virtual 2020.
- Antonio Pascual. Exploring gender differences of palliative care in patients with advanced heart failure. European Society Congress Heart Failure. Virtual 2020.
- Antonio Pascual. Percepción de los cuidados paliativos por especialidad en un hospital de tercer nivel. Congreso Virtual Sociedad Española de Oncología Médica, 2020.
- Antonio Pascual. Programa de cures pal·liatives en IC avançada, perfil diferente segons el gènere? 32 Congrés de la Societat Catalana de Cardiologia. Virtual 2020.

Dissemination to Society

- Ernest Güell, M. Luisa Prada. Debate eutanasia. Cinema a Sant Pau. Hospital Sant Pau. Barcelona, January, 2020.

Associated Groups

Andrology

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Martínez Pasarell, Olga (F. Puigvert)
Moreno Mendoza, Daniel (F. Puigvert)
Peraza Godoy, M. Fernanda (F. Puigvert)
Riera Escamilla, Antoni (F. Puigvert)
Sánchez-Curbelo, Josvany (F. Puigvert)
Sarquella Geli, Joaquim (F. Puigvert)
Vives Suñé, Álvaro (F. Puigvert)

Main Lines of Research

- Genetics applied to male infertility.
- Preservation of male fertility in oncological patients.
- Optimisation of preimplantation genetics diagnosis and in vitro fertilization techniques.
- New surgical procedures, drugs and medical devices applied to the diagnosis, prevention and treatment of andrological diseases and conditions (male sexual dysfunction, hypogonadism, Peyronie's disease, premature ejaculation, sexually transmitted diseases).
- Sexually transmitted diseases and public health.
- Quality of life and comprehensive approach to sexuality: gender and psychological aspects.

Scientific Challenges

- Our multidisciplinary team of professionals conducts translational and clinical research in the field of the diagnosis and treatment of andrological disorders and female sexuality. To improve our knowledge and thereby improve healthcare for patients, we seek to continue active projects, develop new lines of investigation, increase the number of international publications, train professionals and enhance collaboration with hospital and university groups inside and outside the IIB Sant Pau.
- To promote awareness and inform on sexuality as a health topic and as a principle aspect of global health and quality of life including for chronic and ill patients, among professionals who requires a broad and multidisciplinary approach to their patients.
- To work on the relationship with patient associations and progressively incorporate them as work teams in order to conduct responsible research with relevant results and with a social impact.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Nephrology Group
- Urology Group
- Gynecological Group
- Syndromes of Genome Instability and DNA Repair

External Collaborations

National Collaborations

- Medical and Molecular Genetics Centre (RI)-IDIBELL: genetics applied to infertility.
- Cellular Biology and Medical Genetics Unit-UAB: preimplantation genetic diagnosis techniques.

International Collaborations

- Mario Serio Experimental and Clinical Biomedical Sciences Unit, University of Florence: genetics applied to male infertility.
- Reproductive Genomics Laboratory, Human Genetics Centre (KU Leuven): genetics applied to male infertility.
- New England Research Institutes: hypogondadism.
- European Academy of Andrology: radiology examinations of the male genital tract.

Private Collaborations

- Participation in clinical studies including clinical trials and postauthorization studies sponsored by national and international pharmaceutical companies.

Active Grants

- Csilla Gabriella Krausz. Estudio genético y genómico en pacientes infértiles y pacientes con tumor testicular de células germinales: desarrollo de nuevas herramientas para un diagnóstico precoz. PI17/01822. Instituto de Salud Carlos III. Duration: 2018-2022. 102,000 €.

Competitive Private Grants

- Krausz C. Evaluación del efecto de la terapia citostática sobre el genoma y el epigenoma del gameto masculino. Ayudas Merck de Investigación 2017 en el área de Investigación Clínica en Fertilidad. Fundación Merck Salud. Duration: 2017-2021. 130,000 €.

Private Capital Projects

- González, M. Ensayo clínico multicéntrico, aleatorizado, doble ciego, con grupos paralelos y controlado con placebo para investigar la eficacia de un complemento alimenticio en el aumento de la libido y la función sexual en mujeres en la postmenopausia. Estudio GYNFEEL. Gynea Laboratorios S.L.U. Since 2018.
- Maestre, F. Dolor testicular crónico y alextimia. Fundació Puigvert. Since 2013.
- Maestre, F. Regulació afectiva del malestar en la disfunció sexual: Aferrament, psicopatologia, disfunció erèctil i qualitat de la relació de parella. Fundació Puigvert. Since 2018.
- Ruiz-Castañé, E. Estudio observacional para la validación del cuestionario de la enfermedad de La Peyronie en su versión en español (Estudio PDQ). Asociación Española de Urología (AEU). Since 2017.
- Sánchez, J. Tratamiento de la disfunción eréctil con ondas de choque lineales, electromagnéticas de baja intensidad. Estudio aleatorizado con placebo. Fundació Puigvert. Since 2016.
- Vives, A. Estudio de tendencias temporales en el diagnóstico de verrugas anogenitales en una red de profesionales sanitarios de Cataluña para la evaluación del impacto de la Vacunación frente al Virus del Papiloma Humano (Estudio iVacVPH-I). Institut Català d'Oncologia (ICO). Since 2011.
- Martínez, O. Estudio fase IV, simple ciego, prospectivo, aleatorio, controlado, multicéntrico, para comparar les resultados cínicos del sistema time lapse. Merck KGaA. Since 2017.
- Maestre, F. Apego y asertividad como mediadores del malestar emocional en mujeres que sufren disfunción sexual. Fundació Puigvert. Since 2020.
- Sánchez, J. Caracterización histológica y de expresión génica del tejido cavernoso humano en pacientes con disfunción eréctil y sin disfunción eréctil. Fundació Puigvert. Since 2020.
- Martínez, O. Papel del RNA no codificante del semen en el desarrollo embrionario y su potencial aplicabilidad como marcador de pronóstico para reproducción asistida. IDIBELL. Since 2020.
- González, M. Satisfacción y Adherencia del tratamiento en mujeres con atrofia vulvovaginal: estudio transversal (Estudio CRETA). Shionogi S.L.U.

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

Grants Awarded in 2020

- Csilla Gabriella Krausz. Análisis del exoma en pacientes azoospérmicos con bloqueo de la espermatogénesis: desarrollo de un panel génico con valor diagnóstico y pronóstico pre-biopsia testicular. PI20/01562. Instituto de Salud Carlos III. Duration: 2021-2023. 80,900 €.

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

Doctoral Theses

- Álvaro Vives Suñé. Abordaje no invasivo de los condilomas uretrales. Universitat Autònoma de Barcelona. Director: Joan Palou, Fèlix Millán. Date of defense: 24/07/2020
- Daniel Moreno Mendoza. Tumor testicular de células germinales: identificación de nuevos factores de riesgo, Universitat Autònoma de Barcelona. Director: Csilla Krausz. Date of defense: 18/12/2020

Transfer Products

- José FG, González JGÁ, Molina JMC, Bassas L, Iribarren IM, Jabaloyas JMM, Rico FM, García-Baquero R, Gayá MR, García EL, López CL, Castro RP, Salamanca JIM. Infección por SARS-CoV-2: implicaciones para la salud sexual y reproductiva. Una declaración de posición de la Asociación Española de Andrología, Medicina Sexual y Reproductiva (ASESA). (2020) REV INT ANDROL 18 3 117-123. PMID: 32660697. IF: 0.635

Scientific Production

Total Impact Factor: 59.357 · Mean Impact Factor: 2.968

Barcelo M., Castells M., Perez-Riba M., Bassas L., Vigues F., Larriba S., Seminal plasma microRNAs improve diagnosis/prognosis of prostate cancer in men with moderately altered prostate-specific antigen (2020) AM J TRANSL RES, 12 (5), 2041-2051. **IF: 3.3750**

Boeri L., Palmisano F., Preto M., Sibona M., Capogrosso P., Franceschelli A., Ruiz-Castane E., Sarquella-Geli J., Bassas-Arnau L., Scroppo F.I., Sacca A., Gentile G., Falcone M., Timpano M., Ceruti C., Gadda F., Trost L., Colombo F., Rolle L., Gontero P., Montorsi F., Sanchez-Curbelo J., Salonia A., Montanari E., Sperm retrieval rates in non-mosaic Klinefelter patients undergoing testicular sperm extraction: What expectations do we have in the real-life setting? (2020) ANDROLOGY-US, 8 (3), 680-687. **IF: 2.8600**

Cervan-Martin M., Suazo-Sanchez M.I., Rivera-Egea R., Garrido N., Lujan S., Romeu G., Santos-Ribeiro S., Castilla J.A., Gonzalvo M.C., Clavero A., Vicente F.J., Maldonado V., Burgos M., Barrionuevo F.J., Jimenez R., et al. Intronic variation of the SOHLH2 gene confers risk to male reproductive impairment (2020) FERTIL STERIL, 114 (2), 398-406. **IF: 6.3120**

Cosentino M., Bianco M., Ruiz-Castane E., Iafrate M., Treatment of Penile Prosthesis Implant's Infection (2020) UROL INT, 104 (7-8), 542-545. **IF: 1.6980**

De Toni L, de Rocco Ponce M, Petre GC, Rtibi K, Di Nisio A, Foresta C. Bisphenols and Male Reproductive Health: From Toxicological Models to Therapeutic Hypotheses. (2020) FRONT ENDOCRINOL 2020 4 11 301. PMID: 32582021. **IF: 3.644**

De Toni L, Jawich K, De Rocco Ponce M, Di Nisio A, Foresta C. Osteocalcin: A Protein Hormone Connecting Metabolism, Bone and Testis Function. (2020) PROTEIN PEPT LETT 27 12 1268-1275. PMID: 32370705. **IF: 1.156**

Fernández Pérez M, Fernández Agís I, La Calle Marcos P, Campos Caballero R, Molero Rodríguez F, González Fernández M, Rodríguez Torreblanca C. Validation of a Sagittal Section Technique for Measuring Clitoral Blood Flow. Volume Flow: A New Parameter in Clitoral Artery Doppler. (2020) J SEX MED 17 6 1109-1117. PMID: 32151556. **IF: 3.293**

Fraile A, Moncada Iribarren I, Chantada Abal V, Fernández-Pascual E, Romero Otero J, Alonso-Isa M, Lledó E, Egui-Rojo A, García-Baquero R, Torremadé J, Sarquella J, Fes Ascanio E, Cruz N, Martínez-Jabaloyas JM, Luján S, García Cruz E, Martínez-Salamanca JI. Andrology and penile cancer. Recommendations during COVID-19 pandemia. (2020) ARCH ESP UROL 73 5 395-404. PMID: 32538811. **IF: 0.395**

Gasanz C., Moreno-Mendoza D., Villegas J.F., Peraza M.F., Sarquella J., Ruiz-Castane E., Sanchez-Curbelo J., Effect of tadalafil 5 mg daily treatment on penile haemodynamics in patients with erectile dysfunction Efecto del tadalafilo 5 mg/día en la hemodinámica peniana en pacientes con disfunción eréctil (2020) REV INT ANDROL. **IF: 0.6350**

Krausz C., Riera-Escamilla A., Moreno-Mendoza D., Holleman K., Cioppi F., Algaba F., Pybus M., Friedrich C., Wyrwoll M.J., Casamonti E., Pietroforte S., Nagirnaja L., Lopes A.M., Kliesch S., Pilatz A., Carrell D.T., Conrad D.F., Ars E., Ruiz-Castane E., Aston K.I., Baarends W.M., Tuttelmann F., Genetic dissection of spermatogenic arrest through exome analysis: clinical implications for the management of azoospermic men (2020) GENET MED, 22 (12), 1956-1966. **IF: 8.9040**

Ibarra FP, Mehrad M, Di Mauro M, Godoy MFP, Cruz EG, Nilforoushzadeh MA, Russo GI. Impact of the COVID-19 pandemic on the sexual behavior of the population. The vision of the east and the west. (2020) INT BRAZ J UROL 46 (suppl.1)104-112. PMID: 32550703. **IF: 1.342**

José FG, González JGÁ, Molina JMC, Bassas LL, Iribarren IM, Jabaloyas JMM, Rico FM, García-Baquero R, Gayá MR, García EL, López CL, Castro RP, Salamanca JIM. Infección por SARS-CoV-2: implicaciones para la salud sexual y reproductiva. Una declaración de posición de la Asociación Española de Andrología, Medicina Sexual y Reproductiva (ASESA). (2020) REV INT ANDROL 18 3 117-123. PMID: 32660697. **IF: 0.635**

Lotti F., Frizza F., Balercia G., Barbonetti A., Behre H.M., Calogero A.E., Cremers J.-F., Francavilla F., Isidori A.M., Kliesch S., La Vignera S., Lenzi A., Marcou M., Pilatz A., Poolamets O., Punab M., Peraza Godoy M.F., Rajmil O., Salvio G., Shaeer O., Weidner W., Maseroli E., Cipriani S., Baldi E., Degl'Innocenti S., Danza G., Caldini A.L., Terreni A., Boni L., Krausz C., Maggi M., The European Academy of Andrology (EAA) ultrasound study on healthy, fertile men: clinical, seminal and biochemical characteristics (2020) ANDROLOGY-US, 8 (5), 1005-1020. **IF: 2.8600**

Mercadal M, Herrero C, López-Rodrigo O, Castells M, de la Fuente A, Vigués F, Bassas L, Larriba S. Impact of Extracellular Vesicle Isolation Methods on Downstream Mirna Analysis in Semen: A Comparative Study. (2020) INT J MOL SCI 19 21 17 5949. PMID: 32824915. **IF: 4.556**

Moreno-Mendoza D, Casamonti E, Riera-Escamilla A, Pietroforte S, Corona G, Ruiz-Castañe E, Krausz C. Short anogenital distance is associated with testicular germ cell tumour development. (2020) ANDROLOGY 8 6 1770-1778. PMID: 32683775. **IF: 2.860**

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Pozzi E, Boeri L, Capogrosso P, Palmisano F, Preto M, Sibona M, Franceschelli A, Ruiz-Castañé E, Sarquella-Geli J, Bassas-Arnau L, Scroppo FI, Gentile G, Falcone M, Timpano M, Ceruti C, Gadda F, Colombo F, Rolle L, Gontero P, Montorsi F, Sánchez-Curbelo J, Montanari E, Salonia A. Rates of hypogonadism forms in Klinefelter patients undergoing testicular sperm extraction: A multicenter cross-sectional study (2020) ANDROLOGY 8 6 1705-1711. PMID: 32558292. **IF: 2.860**

Rocca MS, Vignoli A, Tenori L, Ghezzi M, De Rocco Ponce M, Vatsellas G, Thanos D, Padrini R, Foresta C, De Toni L. Evaluation of Serum/Urine Genomic and Metabolomic Profiles to Improve the Adherence to Sildenafil Therapy in Patients with Erectile Dysfunction (2020) FRONT PHARMACOL 11 602369. PMID: 33536912. **IF: 4.225**

Vinay J., Moreno D., Rajmil O., Ruiz-Castane E., Sanchez-Curbelo J., Penile low intensity shock wave treatment for PDE5I refractory erectile dysfunction: a randomized double-blind sham-controlled clinical trial (2020) WORLD J UROL. **IF: 3.2170**

Vives, A. Cosentino, M. Palou, J. Evaluación Del Virus Del Papiloma Humano En Varones: Primera Revisión Exhaustiva De La Literatura. (2020) ACTAS UROL ESP 44 2 86-93. PMID: 31874781. **IF: 0.873**

Books or Chapters with ISBN

- Morgado A., Tomada N., Sarquella J. (2020). Surgical Treatment of Erectile Dysfunction: Historical Perspective and Overview. In: Martins F., Kulkarni S., Köhler T. (eds) Textbook of Male Genitourethral Reconstruction. Springer, Cham. https://doi.org/10.1007/978-3-030-21447-0_43. Print ISBN 978-3-030-21446-3. Online ISBN 978-3-030-21447-0

Diffusion Activities

Scientific Diffusion

Courses Organized by the Andrology Group

- E. Ruiz-Castañé (Coordinator). 4th Máster en Andrología Clínica. Universitat Autònoma de Barcelona. 2018-2020. Teachers: All members of the Andrology Group
- E. Ruiz-Castañé (Coordinator). 5th Máster en Andrología Clínica. Universitat de Vic. 2020-2022. Teachers: All members of the Andrology Group

Participations in Congresses and Conferences

- Borràs J, Vives A, Alonso-Tarrés C, Ruiz E, Palou J. Haemophilus i sexe oral, un nou agent causal d'uretritis? Oral communication. X Jornada de Casos Clínics d'Infeccions als Serveis d'Urgències del Treball. Barcelona, 13 January 2020.
- Aumatell J, Borràs J, Alonso-Tarrés C, Santos K, Vives A, Palou J. Abcés testicular per un germen poc freqüent. Oral communication. X Jornada de Casos Clínics d'Infeccions als Serveis d'Urgències del Treball. Barcelona, 13 January 2020.
- Rocco F. FSH: non solo fertilità. Oral communication. Virtual Congress Incontri Italiani di Endocrinologia e Metabolismo. 15 October 2020.
- Rocco F. Ruolo della terapia con testosterone nel paziente ipogonadico in situazioni difficili - Testosterone e diabete mellito. Oral communication. Webinar de la Società Italiana di Andrologia e Medicina della Sessualità. 18 November 2020.
- Rocco F, Rocca MS, Vignoli A, Tenori L, Ghezzi M, De Rocco M, Vatsellas G, Thanos D, Padrini R, Foresta C, De Toni L. Evaluation of the patient's genomic and metabolomic profile to improve of the adherence to drug therapy: a study on PDE5 inhibitors. Poster. Virtual 11th European Congress of Andrology. 5-9 December 2020.

Society Dissemination

- Radio Estel. 1 hour radio program addressed to the general society with general information regarding different diseases. Subjects:
  - Ruiz Castañé E. Sexe i confinament I
  - Ruiz Castañé E. Sexe i confinament II
  - Ruiz Castañé E. Genètica I infertilitat masculina
- La UVic-UCC oferirà un màster sobre funció sexual i reproducció masculina. Regió 7. 11 February 2020.
- Conveni de la UVic-UCC i la Fundació Puigvert. El 9 Nou. 14 February 2020.
- Fundació Puigvert y la UVic colaborarán en el máster de andrología clínica. La Vanguardia. 10 February 2020.
- Sánchez Curbelo J, in collaboration with Coloplast. internet (https://www.soluciones-disfuncion-erectil.es) pending to be activated in 2021. Videos edition for patient's information about andrology diseases.

Associated Groups

Urology

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Bujons Tur, Ana (F. Puigvert)
Emiliani Sanz, Esteban (F. Puigvert)
Errando Smet, Carlos (F. Puigvert)
Ponce de León Roca, Javier (F. Puigvert)
Rodríguez Faba, Óscar (F. Puigvert)

Main Lines of Research

The Urology Clinical and Basic Research group has been an associated group of IIB Sant Pau since its very beginning. The group conducts clinical translational research within the field of urinary tract diseases along different lines such as urological cancer, functional urology, stone disease, paediatric urology, renal transplant and reconstructive surgery.

Existing lines of research are:

- In the area of urological cancer, Dr Breda is leading several projects mainly related to liquid biopsy in urothelial and prostate cancers, focal treatment of prostate cancer, methodology for enhancing lymph nodes in prostate and upper urinary tract disease, intraoperative detection of tumour grade with confocal endomicroscopy in order to facilitate clinical decisions and avoid unnecessary procedures, the role of systemic chemotherapy in upper urinary tract tumours and the role of PET-CT in renal masses and 3D reconstruction in order to facilitate complex renal surgeries. In testis cancer, we are evolving towards minimally invasive surgery with robotic retroperitoneal dissection in metastatic disease and finally diagnoses using the sentinel node technique in penile cancer, and also reconstructive surgery after partial penectomy plus laparoscopic lymphadenectomy of the groin.
- Dr Palou is leading mainly projects in bladder cancer: there is a collaborative translational research line of predictive biomarkers in NMIBC progression with the Inflammatory Group and Malmoe University. Bladder preservation in high grade tumours is a difficult decision and the possibility of detecting those who will progress will allow earlier aggressive treatment. Another line of research is nerve-sparing surgery in cystectomy in order to preserve sexual function after radical surgery.
- In paediatric urology, led by Dr Bujons, there are several topics under research related to long-term follow-up in reconstructive surgery, sexual function in neurological diseases, and fertility in patients after scrotal surgery (varicocele, orchidopexy). This includes the study of the usefulness of Botulinum toxin in hyperactive bladder in children, PH urine studies for the risk of infection in urinary tract anomalies, optimisation of irrigation fluids for the prevention of unnoticed perioperative hypothermia in children during RIRS and NLP and autologous fat graft with stem cells as a treatment for abdominal wall defects in patients with complex exstrophy epispadias.
- In the Urolithiasis line chaired by Dr. Angerri, clinical research on some aspects is performed: laser energy devices for stone destruction (holmium, thulium, super thulium) in collaboration with IIB Sant Pau General and Digestive Surgery Group for primary hyperparathyroidism, tolerance of surgical material for urolithiasis treatment and urinary pH research for the management of cystinuria. In cystinuria, there exists an extensive collaborative research project with IDIBELL for its genetic study and active participation in the National Registry for this rare disease.
- The functional urology section led by Dr Errando is evaluating the clinical results of different surgical techniques and devices for incontinence in both sexes such as paraurethral substance injections, laparoscopic colposacropexy technique, long-term functional results of Botox in males, functional results of the transcorporal artificial urinary sphincter implantation in high risk patients, usefulness of probiotics in the prevention of recurrent urinary tract infections, acidification of urine pH for women with recurrent UTIs. A quality of life research collaboration has recently begun with the Centre de Fisioteràpia (RAP) in Barcelona (associated to the UAB Vall d'Hebron) on clinical evaluation tools for patients with lower urinary tract dysfunction.
- The renal transplantation unit led by Dr Breda is investigating 3D reconstruction models to facilitate renal transplant for a better preservation of the kidney. The group is establishing robotic renal transplant all over Europe and undertaking analysis of urogenital tumours in renal transplant patients in order to update and change its daily practice.
- BPH surgery is one of the most common in urology and the group led by Dr. Ponce de Leon is investigating how to perform surgery with preservation of anterograde ejaculation with different methodologies (TURP, Rezum). The group is also studying the use of the Rezum system (intraprostatic vaporization) in BPH, the quality of life of patients who have undergone urethroplasty due to urethral stenosis, and the use of oral mucosa for urethroplasties. A national collaboration for a Urethroplasties Registry has recently begun. In reconstructive urethral surgery and BPH, Dr Ponce de León is leading an international research prospective study on prostate inflammation to validate a clinical nomogram in patients with lower urinary symptoms, and a prospective multicentre study has been devised on the effect of oral mucosa extraction on patients' quality of life.
- Ms Vanessa Muñoz and nurse Ana Palomino are the coordinators of clinical studies and trials. They play key roles in continuing with the ongoing studies of the department.

Scientific Challenges

- Continue with national and international positions in order to increase the department's scientific networking.
- Participate and evolve in the development of European Guidelines.
- Continue in basic and clinical research on the different established areas .
- Maintain and improve relations with industry (pharmaceutics, medical devices industries and biotechnology companies) in order to be at the forefront in the development of new compounds and surgical techniques.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Uro-oncology meetings: weekly meetings with urologists, oncologists, radiologist, radiation oncologists and pathologist.
- Uropediatric meeting: weekly meetings with urologists, pediatricians, nephrologists, radiologists and nurses.
- Functional urology meeting in chronic pelvic pain: monthly meetings with urologists, anesthesiologists, psychologists and nurses.
- Female and Functional Urology Unit collaboration with Sant Pau Neurology Department for the joint evaluation and management of Neurogenic Bladder, specially in the field of CNS degenerative diseases like Multiple Sclerosis but also in other cases of Neurologic Disorders.
- General and Digestive Surgery IIB Group: collaborative surgical group in complex pelvic tumours and urolithiasis research.
- Clinical Epidemiology and Helathcare Services IIB Sant Pau Group: bladder and prostate cancer.
- Inflammatory IIB Sant Pau Group: Biomarkers in urooncology.
- Paediatrics IIB Sant Pau Group: reseach in uropediatric diseases.

External Collaborations

International academic collaborations, network and consortiums

- IRCCVTC (International Renal Cell Carcinoma Venous Thrombus Consortium): vena cava thrombus in kidney cancer.
- European Reference Network for Rare and Complex Urogenital Diseases and Conditions: rare urogenital pediatric conditions.
- Aarhus University Molecular Genetics Department: bladder cancer.
- International Robotic Cystectomy Consortium: robotic cystectomy.
- LARG (Latin American Renal Cancer Group): renal cancer.
- IBCG (International Bladder Cancer Group): bladder cancer.
- IBCN (International Bladder Cancer Network): bladder cancer.
- European Guidelines EAU Group: non-muscle invasive bladder cancer.
- European Guidelines EAU Group: urothelial carcinomas of the upper urinary tract.
- European Guidelines EAU Group: Testicular cancer panel position in 2020.
- ERUS working Group on RAKT.
- Champalimaud Center for the Unknown (Lisbon) and the Malmoe University: high-grade non muscle invasive bladder cancer.
- Columbia University New York – Urooncology.
- GENS (Grupo Español de Neuromodulación de Raíces Sacras).
- IDIBELL: genetic research in cystinuria.
- RAP (Phisiotherpy center): quality of life research in incontinence.
- Genitourinary Pathology Society (GUPS): prostate cancer grading.
- International Society of Uropathology (ISUP): expert opinion on grading of urothelial carcinoma.
- World Health Organization Classification of tumours (WHO): squamous cell carcinoma of prostate.
- National Coordinator of the Grupo de Uropatología de la Sociedad Española de Anatomía Patológica (SEAP).

Private national and international collaborations

- Clinical trials and postauthorization studies promoted by national and international pharmaceutics, medical devices industries and biotechnology companies.

Active Grants

- Palou, J. Robot-Assisted Cystectomy (Cistectomía robótica). RARC Study. Roswell Park Cancer Institute.
- Palou, J. Quimioterapia Intravesical Hipertérmica en pacientes con TVNMI riesgo intermedio comparado con instilación intravesical de quimioterapia estándar como tratamiento adyuvante. Estudio comparativo, prospectivo, randomizado y multicéntrico. EUDRACT: 2013-002628-18. Combat Medical LTD.
- Breda, A. Protocolo para manejo diagnóstico y terapéutico del tumor de vías mediante ureteroscopia flexible y uso del sistema de imagen (IMAGE 1 SPIES). Fundació Puigvert.
- Palou, J. Estudio abierto, aleatorizado, controlado, multicéntrico, fase II para evaluar la eficacia y seguridad de Intuvax administrado intratumoralmente pre-nefrectomía seguido de Sunitinib post-nefrectomía comparado con Sunitinib post-nefrectomía en pacientes con carcinoma renal metastásico (Estudio INTUVAX)" EUDRACT: 2014-004510-28. Immunicum AB.
- Palou, J. Impacto de la administración preoperatoria intravesical con mitomicina-C (MMC) mediante instilación electromotriz (EMDA) en pacientes con tumor vesical no músculo invasivo (TVNMI). Estudio prospectivo aleatorizado EUDRACT: 2015-003680-11. Presurgy S.L.
- Errando, C. Estudio en fase III, multicéntrico, aleatorizado, doble ciego, de grupos paralelos y controlado con placebo para evaluar la eficacia y la seguridad de uno o más tratamientos intradetrusor con 600 u 800 unidades de Dysport® para el tratamiento de la incontinencia urinaria en pacientes con hiperactividad neurógena del detrusor por lesión de la médula espinal o esclerosis múltiple (Estudio CONTENT (Ipsen 223)). EUDRACT: 2015-000507-44. Ipsen Innovation.
- Rodríguez-Faba, O. Estudio piloto para valorar el abordaje mediante citometría de flujo de la expresión de receptores inhibidores en células urinarias de pacientes con cáncer vesical músculo-invasivo. Fundació Puigvert / Servei d'Immunologia Hospital Sant Pau.
- Breda, A. Development of cold ischemia device and evaluation of functional results and inflammatory markers in open compared to robot-assisted kidney transplantation from living donors. Fundació Puigvert.
- Rodríguez-Faba, O. 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). EUDRACT: 2016-004351-75. Merck, Sharp & Dohme Corp.
- Palou, J. Estudio observacional internacional en pacientes con cáncer de vejiga para detectar recurrencias tempranas tras la resección transuretral de la vejiga (RTUV) con la prueba Xpert® (Monitor de cáncer de vejiga Xpert®) ANTICIPATE X. Cepheid Europe.
- Breda, A. En bloc bladder tumor resection: prospective randomized evaluation of monopolar, bipolar and thulium energy (Resección del tumor vesical en bloque: evaluación prospectiva aleatoria mediante la utilización de diferentes técnicas de energía: monopolar, bipolar y láser). Fundació Puigvert.
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- Rodríguez-Faba, O. Ensayo mundial fase III, aleatorizado, abierto, multicéntrico de Durvalumab y el Bacilo de Calmette-Guerin (BCG) administrados como terapia combinada en comparación con BCG en monoterapia, en pacientes con cáncer de vejiga no músculo invasivo de alto riesgo sin tratamiento previo con BCG (POTOMAC). EUDRACT: 2017-002979-26. AstraZeneca AB.
- Ponce de León, J. Proyecto Base de Datos de Uretroplastias del Grupo de Cirugía Recostructiva Urológica (CRU) en la Plataforma

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- Breda, A. Biomarkers in renal cancer. Biorek S.r.l.
- Palou, J. Quimioterapia neoadyuvante versus adyuvante en carcinoma urotelial del tracto urinario superior. Ensayo Clínico randomizado de viabilidad fase II (URANUS). EUDRACT: 2016-004017-27. European Uro-Oncology Group (EUOG).
- Palou, J. Evaluación prospectiva de UBC® Rapid y citología en orina en pacientes con cáncer de vejiga no invasivo muscular (NMIBC). IDL Biotech AB
- Ponce de León, J. Análisis prospectivo de la morbilidad oral derivada de la obtención de injertos de la cavidad bucal empleados en uretroplastias de ampliación y evaluación de sus factores predictores. Fundació Puigvert.
- Palou, J. Estudio de adecuación de la terapia hormonal intermitente en pacientes con cáncer de prostate. Institut Recerca HSCSP - IIB Sant Pau.
- Palou, J. Ensayo Clínico Multicéntrico con producto sanitario asociado a fármaco en uso terapéutico autorizado para el tratamiento de CVNMI evaluando la eficacia y tolerabilidad del tratamiento adyuvante con EMDA-MMC versus estándar BCG y la eficacia del bio-marcador urinario MCM5 ADXBLADDER® en la detección de recidiva tumoral en pacientes con CVNMI de Alto Grado (Estudio CUETO1801). Presurgy.
- Palou, J. Tratamiento de carcinoma urotelial no invasivo de alto grado de la vejiga mediante número y dosis estandar de instilaciones intravesicales con una dosis estándar de BCG (Estudio NIMBUS). EAU Research Foundation.
- Breda, A. Genetic testing in Upper tract urothelial carcinoma (UTUC): the Epicheck study. Nucleix LTD.
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- Breda, A. Prostate cancer Research International: Active Surveillance (PRIAS). Guideline and study for the expectant management of localized prostate cancer with curative intent (Cáncer de próstata: vigilancia activa con posibilidad de tratamiento diferido). ERASMUS MC.

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- Subiela Henríquez JD, Sabiote Rubio L, Bravo Balado A, Vanacore D, Martínez Osorio C, Fontana M, Turco M, Bevilacqua G, Gallioli A, Territo A, Boissier R, Palou Redorta J, Breda A. Utilización del Ephicheck (TM) en el tumor de tracto urinario superior: análisis premilinar de un estudio prospectivo. 3rd Prize "Joaquín Albarran" for the best oral communication by the Spanish Association of Urology.
- Gallioli A, Boissier R, Territo A, Campi R, Vignolini G, Musquera M, Alcaraz A, Decaestecker K, Tugcu V, Vanacore D, Serni S, Breda A. Innovations and technical variation in robot-assisted kidney transplantation: results from the ERUS working group. 1st Prize Best Video Abstract Award by the European Association of Urology during the EAU Congress 2020.

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- Álvaro Vives. Abordatge no invasiu dels condilomes uretrals. Universitat Autònoma de Barcelona. Director: J. Palou. Date of defense: 13 July 2020.

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Guidelines / International Position - Consensus Papers

- Cacciamani, G., Shakir, A., Tafuri, A., Gill, K., Han, J., Ahmadi, N., Hueber, PA., Gallucci, M., Simone, G., Campi, R., Vignolini, G., Huang, W.C., Van Der Poel, H., Velet, LP., Hemal, A., Breda, A., Autorino. R., Sotelo, R., Aron, M., Desai, MM., De Castro Abreu, Al. Best Practices In Near-Infrared Fluorescence Imaging With Indocyanine Green (Nirf/Icg) Guided Robotic Urologic Surgery: A Systematic Review-Based Expert Consensus. WORLD J UROL 2020, 38(4): 883-896. PMID: 31286194. IF: 3.217.
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Other Publications

- Sabiote L, Emiliani E, Kanashiro A, Balañà J, Mosquera L, Sánchez-Martín F, Millán F, Alonso Tarrés C, Palou J, Angerri O. Oral acidification with l-methionine as a non invasive treatment of encrusted uropathy. J ENDOUROL CASE REP 2020; 6(3): 143-146. PMID: 33102711

Books or Chapters with ISBN

- Decaestecker K, Territo A, Campi R, Van Parys B, Bevilacqua G, Desender L, Breda A. In: Medical Robotics - New Achievements. Robot-Assisted Kidney Transplantation. January 2020. DOI: 10.5772/intechopen.90276
- Angerri O. Single use ureteroscopes. In: Acidosis tubular renal distal. Enfoque multidisciplinar, pp. 82-87. 1 ed 2019. Ed. Minerva Medica.

Diffusion Activities

Diffusion to Society

- Radio Estel. 1 hour radio program addressed to the general society with general information regarding different diseases. Subjects:
- J. Palou. Urologia i COVID I
- J. Palou. Urologia i COVID II
- J. Palou. Urologia i telemedicina
- J. Palou. Cirurgia robòtica,15 anys

Scientific Diffusion

Diffusion Activities Organized by Fundació Puigvert

Activities addressed to GP

- A. Breda, JM. Gaya (directors). Todo lo que deberíamos saber en el 2020 del cáncer de próstata. Jornada para Médicos de Familia. Virtual, 5 November 2020.

Activities addressed to Physicians

- Breda, F. Sanguedolce. Conceptos básicos en resonancia magnética de próstata y biopsias prostáticas dirigidas. Virtual, 27 November 2020.

Activities addressed to Urologists

- J. Palou, O Angerri (directors). Explore modes of endoscopic treatment for stone disease. Virtual, 24 November 2020.
- J. Palou, A. Breda (directors). Explore modes of treatment for upper tract urothelial carcinoma (UTUC). Virtual, 10 November, 15 December 2020.
- J. Palou, A. Breda (directors). Virtual medical expert training. Practical aspects and surgical tips in NMIBC management. 12 November, 1 December 2020.

Participation of Group Members in National and International Events

In most of the events listed below, the members of this group participated with several communications or inputs (communications, posters, videos, moderator...). For information, we specify the total number of these participations for each event.

- A. Breda. Round table. Urothelial cancer. Evidence based discussion ESOU19: 17th Meeting of the EAU Section of Oncological Urology (ESOU20). Dublín (Ireland), 17-19 January 2020. Total number of participations: 3
- C. Errando. Lecture. Repercusión funcional de la cirugía del tracto urinario inferior en el varón. Curso Teórico-Práctico Abordaje del Tracto Urinario en STUI/VH Cáceres (Spain), 20-22 January 2020. Total number of participations: 2
- O. Angerri, E. Emiliani. Live surgery. Endoscopic combined intrarenal surgery with MIP. 7th Meeting of the EAU Section of Uro-Technology (ESUT20). Leipzig (Germany), 23-24 January 2020. Total number of participations: 5
- A. Bujons. Live surgeries. International Bladder Exstrophy Repair Workshop. Ahmedabad (India), 24 January -1 February 2020.
- J. Ponce de León. Moderator. Simposium - Uso de Rezum en el tratamiento mínimamente invasivo ambulatorio de la obstrucción infravesical por HBP ¿Es una alternativa al tratamiento farmacológico o al quirúrgico? XXX Reunión Nacional de los Grupos de Litiasis y Endourología, Laparoscopia y Robótica de la AEU. Barcelona, 30-31 January 2020. Total number of participations: 6
- Ponce de León Roca J, Martínez Barea V, Montlleó González M, Fontanet Soler S, Schwartzmann Jochamowitz I, Moncada Castro E, Salvador Bayarri J, Palou Redorta J.Video: Uretroplastia termino terminal posterior con Memocath y esfínter artificial concomitante. XXIII Reunión Nacional Grupo Uro-Andrológica y V Reunión Nacional del Grupo de Cirugía Reconstructiva Urológica. Vitoria (Spain), 6-7 February 2020. Total number of participations: 3
- J. Palou. Lecture. Risk stratification and indications according to the EAU guidelines based on case presentations. ESU-ESOU Masterclass on Non-Muscle-Invasive Bladder Cancer. Prague (Czech Republic), 20-21 February 2020. Total number of participations: 9
- C. Errando. Lecture. Evidence-based surgical management of female stress UI. Educational Course; Pathologies and Management of Female Pelvic Floor Dysfunctions. Hô Chi Minh (Vietnam), 20-21 February 2020. Total number of participations: 4
- Gontero P, Montanari E, Roupret M, Longo F, Stockley J, Kennedy A, Rodríguez O, Sieverink C, Vanié F, Allasia M, Witjes JA, Colombel M, Sylvester R, McCracken S, Dudderidge T, Palou J.Evaluation of ADX-BLADDER and cytology performance in the follow up of NMIBC: A blinded prospective multicentric study. 35th Annual EAU Congress (EAU20). Virtual, 17-26 July 2020. Total number of participations: 9
- A. Breda. Semi-live surgery. Robotic partial nephrectomy. Society of Robotic Surgery Simposium Virtual Meeting. Virtual, 31 July - 2 August 2020. Total number of participations: 4
- A. Bujons. Lecture. Extrofia vesical, técnicas quirúrgicas. I Curso Virtual Internacional de Urología Pediátrica. Virtual, 19 September 2020.
- J. Palou Lecture. Radical cystectomy: the urologist nightmare! Webinar-Radical Cystectomy: The Urologist Nightmare! Virtual, 29 September 2020.
- O. Angerri. Lecture. Cirugía retrógrada intrarenal: indicaciones y casos especiales. XXXIX Congreso Confederación Americana de Urología (CAU). XXXVII Congreso de la Sociedad Ecuatoriana de Urología (SEU), XXV Congreso de la Sociedad Iberoamericana de Urología Pediátrica (SIUP). Virtual, 22-25 October 2020. Total number of participations: 18
- J. Palou. Lecture. Diagnosis: cystoscopy, surrogate tools and imaging: what's new? can biomarkers substitute diagnostic and follow up cystoscopy? Technology and Training in Endourology 2020. Virtual, 4-5 November 2020. Total number of participations: 12
- Rodríguez Faba O, Suquilanda E, Calderón J, Fontanet S, Rouprêt M, Stockley J, Kennedy A, Sieverink C, Vanié F, Allasia M, Witjes A, Sylvester R, Longo F, Montarani E, Colombel M, Palou J.Oral presentation. Exactitud diangóstica de MCM5 para la detección de la recurrencia en el seguimiento del tumor de vejiga no-músculo invasivo (TVNMI): Resultados de un estudio europeo multicéntrico prospectivo. I Congreso Nacional Virtual de Urología (AEU). Virtual, 23-26 November, 30 November and 1-3 December 2020. Total number of participations: 27

Associated Groups

Radiation Oncology

Coordinator
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Members
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Craven-Bartle Lamote de Grignon, Jordi (FGS)
Farré Bernado, Núria (FGS)
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Pedro Olivé, Agustí (FGS)
Rojas Cordero, Jady V. (FGS)
Vila Capel, Antoni (FGS)

Main Lines of Research

- Radiation therapy based on PET/CT functional imaging of tumours.
- Implementation of planning techniques for radiotherapy treatment with PET/CT for chest locations, head and neck tumours and squamous cell tumours.
- Image-guided radiotherapy and respiratory movement control.
- Hypofractionated, intensity-modulated /arc therapy and IGRT for prostate cancer.

Scientific Challenges

- Stereotactic body radiotherapy techniques (SBRT) for patients with lung cancer and with oligometastases with the aim of increasing quality of life and avoiding surgery.
- SBRT in radical treatment for patients with early-stage non-surgical lung cancer and selected patients with non-surgical oligometastatic tumours.
- Vertebral SBRT for oligometastatic tumours.
- Stereotactic radiation therapy (SRT) for brain metastases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Josep Balart Serra. Collaborating researcher in the Radiation Oncology Area: Nanoterapia dirigida y Radioterapia SBRT combinada para la eliminación selectiva de células madre tumorales en cáncer de páncreas. Nº PI17/00150. IP: María Virtudes Céspedes Navarro.

External Collaborations

- Gemma Sancho. The TrueNTH Global Registry (2017-2019), an international strategy funded by the Movember Foundation. The project aims to compare prostate cancer outcomes, and reduce its variation worldwide. This project is led by Dr Motserrat Ferrer (Health Services Research Group IMIM (Hospital del Mar Medical Research Institute).
- Gemma Sancho. A Phase 3 Randomized, Placebo-controlled, Double-blind Study of Niraparib in Combination with Abiraterone Acetate and Prednisone Versus Abiraterone Acetate and Prednisone for Treatment of Subjects with Metastatic Prostate Cancer. Protocol 64091742PCR3001, Phase 3JNJ-64091742 (Niraparib). May 2019.
- Gemma Sancho. A Phase 1b-2 Study of Niraparib Combination Therapies for the Treatment of Metastatic Castration-Resistant Prostate Cancer. Protocol N. 64091742PCR2002.
- Gemma Sancho. Estudio multicéntrico de radioterapia postoperatoria hipofraccionada en pacientes diagnosticados de carcinoma de próstata. GICOR (Grupo de Investigación Clínica en Oncología Radioterápica). March 2019.
- Nuria Farré. Estudio fase III para valorar la preservación de la memoria tras la irradiación craneal profiláctica (ICP) con o sin protección de hipocampo en cáncer de pulmón de célula pequeña (CPCP). Estudio PREMER. GOECP 0114. Promotor: GOECP, SEOR, GICOR. Duration: 2015-2019.
- Nuria Farré. A Phase III, Randomized, Placebo-controlled, Double-blind, Multi-center, International Study of Durvalumab Following Stereotactic Body Radiation Therapy (SBRT) for the Treatment of Patients with unresected Stage I/II, lymph-node negative Non-small Cell Lung Cancer (PACIFIC-4/RTOG 3515). AstraZeneca AB / RTOG FOUNDATION. Duration: from 2019.
- Nuria Farré. A Multicenter, Double Blind, Randomized, Controlled Study of M7824 with Concurrent Chemoradiation Followed by M7824 versus Concurrent Chemoradiation Plus Placebo Followed by Durvalumab in Participants with Unresectable Stage III Non-small Cell Lung Cancer. Merck. Duration: from 2018.
- Nuria Farré. Randomized, double-blind phase 3 study evaluating neoadjuvant platinum-based chemotherapy with perioperative pembrolizumab or placebo in resectable stage IIB or IIIA NSCLC: KEYNOTE-671. Merck Sharp & Dohme Española S.A. Duration: from 2018.
- Nuria Farré. A multicentre single arm phase II trial assessing the efficacy of immunotherapy, chemotherapy and stereotactic radiotherapy to metastases followed by definitive surgery or radiotherapy to the primary tumour, in patients with synchronous oligo-metastatic nonsmall cell lung càncer. ETOP 14-18 CHESS. Astra Zeneca. Duration: from 2019.
- Nuria Farré. A Phase 3, Randomized, Open Label Study to Compare Nivolumab plus Concurrent Chemoradiotherapy (CCRT) followed by Nivolumab plus Ipilimumab or Nivolumab plus CCRT Followed by Nivolumab vs CCRT followed by Durvalumab in Previously Untreated, Locally Advanced Non-small Cell Lung Cancer (LA NSCLC)

(CheckMate 73L, CHECKpoint pathway and nivoluMAb clinical Trial Evaluation 73L). Clinical Protocol CA20973L. Bristol-Myers Squibb Research and Development. Duration: from 2019.

- Katarina Majercakova. Collaborator. Émbolos tumorales circulantes hcXCR4/Serpin E1 en el pronóstico de cáncer de cabeza y cuello. FIS. Hospital de la Santa Creu i Sant Pau.
- Katarina Majercakova. Identification of prognostic viral and genetic biomarkers using non-invasive methods in HPV-related oropharyngeal cancer patients (multicentric study). FIS. Duration: from 2019.
- Katarina Majercakova. Estudio en fase 3, aleatorizado, doble ciego sobre avelumab combinado con la quimiorradioterapia de referencia (cisplatino más radioterapia definitiva) en comparación con la quimiorradioterapia de referencia en el tratamiento de primera línea de pacientes con carcinoma epidermoide localmente avanzado de cabeza y cuello (JavelinHN100). JAN13004-30. Duration: from 2018.
- Katarina Majercakova. Ensayo clínico fase IB-II de gel de melatonina oral para la prevención y tratamiento de la mucositis oral en pacientes con cáncer de cabeza y cuello tratados con quimioradioterapia. Estudio MUCOMEL. Duration: from 2015.
- Katarina Majercakova. Phase I-II prospective trial, multicenter, open label, exploring the combination of Trabectedin plus RAdiotherapy in Soft Tissue Sarcoma patients. Duration: from 2014.
- Katarina Majercakova. International Randomised Controlled Trial for the Treatment of Newly Diagnosed Ewing's Sarcoma Family of Tumours.
- Katarina Majercakova. Sacral Chordoma: a Randomized & Observational study on surgery versus definitive radiation therapy in primary localized disease (SACRO). Duration: from 2016.
- Collaborating researcher in the health research Project of the Instituto de Salud Carlos III entitled "Nanoterapia dirigida y Radioterapia SBRT combinada para la eliminación selectiva de células madre tumorales en cáncer de Páncreas". PI17/00150. PI: María Virtudes Céspedes Navarro.
- MAGNITUDE / 64091742PCR3001. A Phase 3 Randomized, Placebo-controlled Double-blind Study of Nira- parib in Combination with Abiraterone Acetate and Prednisone Versus Abiraterone Acetate and Prednisone for First-Line Treatment of Subjects with Metastatic Castration-resistant Prostate Cancer (mCRPC) and DNA Re- pair Defects. (MAGNITUDE) No EudraCT: 2017-003364-12. Inici 02/04/2019. (IC)
- QUEST / 64091742PCR2002A Study of Niraparib Combination Therapies for theTreatment of Me- tastatic Castration-Resistant Prostate Cancer (QUEST) No EudraCT: 2017-003552-23. Inici: 07/06/2019 (IC)

Active Grants

- Gemma Sancho. A prospective randomised phase III study of androgen deprivation therapy with or without local radiotherapy with or without abiraterone acetate and prednisone in patients with metastatic hormone-naïve prostate cancer. GETUG-AFU 21. UC-0160/1105-EudraCT:2012-000142-35.
- Gemma Sancho. A Randomized, Double-blind, placebo-controlled Phase 3 study of JNJ-56021927 in subjects with high-risk localized prostate cancer receiving treatment with primary radiation therapy. EudraCT:2015-003007-38. ATLAS.
- Gemma Sancho. Enzalutamida y radioterapia hipofraccionada en cáncer de próstata localizado de riesgo intermedio. ENZART EudraCT Nº: 2015-004617-25. FUNCANIS.
- Clinical Protocol CA20973L. A Phase 3, Randomized, Open Label Study to Compare Nivolumab plus Concurrent Chemoradiotherapy (CCRT) followed by Nivolumab plus Ipilimumab or Nivolumab plus CCRT. Followed by Nivolumab vs CCRT followed by Durvalumab in Previously Untreated, Locally Advanced Non-small Cell Lung Cancer (LA NSCLC). (CheckMate 73L, CHECKpoint pathway and nivoluMAb clinical Trial Evaluation 73L). Bristol-Myers Squibb Research and Development. Start: April 2019.
- ETOP 14-18 CHESS. A multicentre single arm phase II trial assessing the efficacy of immunotherapy, chemotherapy and stereotactic radiotherapy to metastases followed by definitive surgery or radiotherapy to the primary tumour, in patients with synchronous oligo-metastatic nonsmall cell lung cancer. European Thoracic Oncology Platform (ETOP). Start: April 2019.
- A Phase III, Randomized, Placebo-controlled, Double-blind, Multi-center, International Study of Durvalumab Following Stereotactic Body Radiation Therapy (SBRT) for the Treatment of Patients with unresected Stage I/II, lymph-node negative Non-small Cell Lung Cancer (PACIFIC-4/RTOG 3515). Astra-Zeneca. RTOG Foundation. Start: December 2018.
- KEYNOTE-671: A phase III, randomized, double-blind trial of platinum doublet chemotherapy +/- pembrolizumab (MK-3475) as neoadjuvant/adjuvant therapy for participants with resectable stage IIB or IIIA non-small cell lung cancer (NSCLC). MSD. Start: April 2018.
- Estudio multicéntrico de radioterapia postoperatoria hipofraccionada en pacientes diagnosticados de carcinoma de próstata: HYPORT-ES. Promotor GICOR. Starti març 2019- (IP HSCSP).

Scientific Production

Total Impact Factor: 50.951 · Mean Impact Factor: 8.492

Bonet M, García V, Farré N, Algara M, Farrús B, Fernandez J, Reyes V, Eraso A, Álvarez A, Cambra MJ, Pedro A, Vayreda J, Lemansky C, Izar F, Arenas M; Grup Oncològic Català Occità (GOCO Group). Radiation therapy for bone-only metastases in breast cancer patients: A GOCO survey of current clinical practice. REP PRACT ONCOL RADIOTHER. 2020 Jan-Feb;25(1):113-116. doi: 10.1016/j.rpor.2019.12.019. Epub 2019 Dec 20. PMID: 31908604; PMCID: PMC6938868. **IF: 1.26**

Borras J.M., Font R., Sola J., Macia M., Tuset V., Arenas M., Eraso A., Verges R., Farre N., Pedro A., Molla M., Algara M., Sole J.M., Mira M., Espinas J.A., Impact of non-adherence to radiotherapy on 1-year survival in cancer patients in Catalonia, Spain (2020) RADIOTHER ONCOL, 151, 200-205. **IF: 4.8560**

Carrato C., Alameda F., Esteve-Codina A., Pineda E., Arpi O., Martinez-Garcia M., Mallo M., Gut M., Lopez-Martos R., Barco S.D., Ribalta T., Capellades J., Puig J., Gallego O., Mesia C., Munoz-Marmol A.Ma., Archilla I., Arumi M., Blanc J.M., Bellosillo B., Menendez S., Esteve A., Bague S., Hernandez A., Craven-Bartle J., Fuentes R., Vidal N., Aldecoa I., de la Iglesia N., Balana C., Glioblastoma TCGA mesenchymal and IGS 23 tumors are identifiable by ihc and have an immune-phenotype indicating a potential benefit from immunotherapy (2020) CLIN CANCER RES, 26 (24), 6600-6609. **IF: 10.1070**

Lopez-Campos F., Linares-Espinos E., Maldonado Pijoan X., Sancho Pardo G., Morgan T.M., Martinez-Ballesteros C., Martinez-Salamanca J., Counago F., Genetic testing for the clinician in prostate cancer (2020) EXPERT REV MOL DIAGN, 20 (9), 933-946. **IF: 4.0960**

Marta G.N., Coles C., Kaidar-Person O., Meattini I., Hijal T., Zissiadis Y., Pignol J.-P., Ramiah D., Ho A.Y., Cheng S.H.-C., Sancho G., Offersen B.V., Poortmans P., The use of moderately hypofractionated post-operative radiation therapy for breast cancer in clinical practice: A critical review (2020) CRIT REV ONCOL HEMAT, 156. **IF: 5.8330**

Martin-Broto J; Hindi, N; Lopez-Pousa A; Peinado-Serrano J; Alvarez R; Alvarez-Gonzalez A; Italiano A; Sargos P; Cruz-Jurado J; Isern-Verdum J, et al. Assessment of Safety and Efficacy of Combined Trabectedin and Low-Dose Radiotherapy for Patients With Metastatic Soft-Tissue SarcomasA Nonrandomized Phase 1/2 Clinical Trial. JAMA ONCOL. 2020;6(4):535-541. doi:10.1001/jamaoncol.2019.6584. **IF: 24.799**

Other Publications

- León X, García J, Farré N, Majercakova K, Avilés-Jurado FX, Quer M, Camacho M. Predictive capacity of IL-8 expression in head and neck squamous carcinoma patients treated with radiotherapy or chemoradiotherapy. Acta Otorrinolaringol Esp. 2020 Sep 21:S0001-6519(20)30146-1. English, Spanish. doi: 10.1016/j.otorri.2020.05.003. Epub ahead of print. PMID: 32972719.

Diffusion Activities

Congress communications

- Zapatero A, Álvarez González A, Guerrero A, Maldonado J, González San Segundo C, Cabeza MA, Martín de Vidales C, Solé J, Pedro Olive A, Boladeras A, Casas F, Calvo F. Prognostic value of testosterone levels following androgen deprivation and high dose radiotherapy in localized prostate cancer: results from Dart 01/05 phase III trial. 2020 ASTRO - Annual Meeting. Miami Beach (USA), 25-28 October 2020.
- Weighted lymph node ratio: a new tool in the assessment of postoperative staging of the neck dissection in HPV-negative head and neck squamous cell carcinoma patients, Poster Viewing Q&A Session. ASTRO Annual Meeting 2020. Oonline, 26 October 2020.
- Seppenwoolde Y, Majercakova K, Dörr E, Buschmann M, Sturdza A, Georg D. Correlation of early morbidity and external beam dose volume parameters in locally advanced cervix cancer ESTRO 2020. Online, 28 November.-1 December 2020. Poster higlights discussion.
- G. Sancho (Speaker):Estado actual del cáncer de próstata: PSMA versus otras pruebas. Organizer:ASTELLAS Virtual, Barcelona, 16 December 2020.
- G. Sancho (Speaker): IV Curs multidisciplinar en càncer de pròstata per a residents en formació de Catalunya. Radioteràpia adjuvant o de rescat? Organizer: JANSEN Virtual, Barcelona, 3 December 2020.
- Participation in the Strategic Area of the Agència de Qualitat i Avaluació Sanitàries de Catalunya (AQuAS), Departament de Salut. Working group "Decisions compartides: Ostomies".
- Lecturer in the subject Radiologia i Medicina Física, Oncologia Radioteràpica, UAB, Facultat de Medicina, Unitat Docent de Sant Pau.

Participation in Courses

- K. Majercakova. Tratamiento oncológico radioterápico en patología oncológica musculo esquelética. 28 Curso de Tumores Locomotor. Barcelona, Virtual, 26 November 2020.

Associated Groups

Locomotor System Research

Coordinator
Crusí Sererols, Xavier (FGS)
xcrusi@santpau.cat

Members
Aguilera Roig, Xavier (FGS)
Almenara Fernández, Marta (FGS)
Álvarez Gómez, Carlos (FGS)
Bascuñana Ambrós, Helena (FGS)
Carrera Fernández, Ion (FGS)
Cuartero Archs, Jordi (FGS)
De Caso Rodríguez, Julio (FGS)
Gelber Ghertner, Pablo Eduard (FGS)
González Rodríguez, José Carlos (FGS)
Gracia Alegria, Isidre (FGS)
Lamas Gómez, Claudia Maria (FGS)
Nadal Castells, Maria Josep (FGS)
Peiró Ibáñez, Ana (FGS)
Pérez Romera, Ana Belén (FGS)
Velázquez Fragoso, Juan José (FGS)

Main Lines of Research

Antiresorptives in orthopaedic and trauma surgery

- Effect of zoledronic acid (Aclasta) on periprosthetic bone mineral density in patients undergoing total knee arthroplasty. Study approved by the HSCSP ethics committee and authorized by the Spanish Medicines and Health Products Agency (AEMPS) for the off-label use of Aclasta.

Knee

Haemostasis

- Blood loss control using tranexamic acid in primary prosthetic and knee revision surgery.
- Retrospective study of revision knee arthroplasty to compare the effects of intravenous tranexamic acid and normal haemostasis.
- Clinical trial comparing outcomes for intravenous tranexamic acid with fibrin glue (Tissucol) and normal haemostasis in primary knee prosthetic surgery.
- Observational study of blood loss in redon drainage over time in pertrochanteric hip fractures.
- Randomized multicentre parallel clinical trial in antiaggregated patients with proximal femur fracture to evaluate a strategy to shorten time to surgery. AFFEcT study.

Cartilage

- Regeneration of cartilage defects using tissue engineering and a matrix seeded with characterized allogeneic chondrocytes.
- Prospective study on fresh osteochondral allograft transplantation. CT, MRI and clinical outcomes.

Patella

- Prospective comparative study on patellar fractures. Metallic wiring versus suture fixation.

Meniscus

- Effect of normal and growth-factor-enriched cell cultures on the meniscal collagen network and glycosaminoglycan expression.
- In vitro experimental study of the feasibility of a polyurethane replacement meniscus pre-seeded with stem cells.
- Evolution of allogeneic meniscal transplants and relationship with extrusion.

Hip

- Coxarthrosis in young adults: etiological study of biomechanical factors.
- Biomechanics of coxarthrosis in young adults: finite element study.
- Influence of hip anatomy on the early development of coxarthrosis: controlled, prospective radiographic study.
- Osteosynthesis with cannulated screws in non-displaced femoral neck fractures in elderly patients.
- Randomized clinical trial for capsular and rotator muscles suture in cemented bipolar hemiarthroplasties in patients with femoral fractures.

Foot and Ankle

- Prospective randomised clinical trial for the surgical treatment Achilles tendon rupture: repair with mini-invasive technique vs open tenorrhaphy.

Upper Limb

- Anatomical study of stabilizing ligaments in the trapeziometacarpal joint: the role played by dorsoradial and anterior oblique ligaments in Bennett and Rolando fractures.
- Surgical treatment of middle-third clavicle fractures in high-energy trauma in young patients.
- Retrospective study of the use of vascularized bone graft using the 1,2-ICSR artery in the revascularization of proximal pole necrosis in scaphoid pseudarthrosis.

Active Grants

- Pablo Eduard Gelber Ghertner. Preservación en fresco de aloinjertos osteocondrales a 37ºC. PI18/01771. Instituto de Salud Carlos III. Duration: 2019-2021. 57,000 €.

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

Scientific Production

Total Impact Factor: 29.272 · Mean Impact Factor: 3.659

Chahla J., Kunze K.N., LaPrade R.F., Getgood A., Cohen M., Gelber P., Barenius B., Pujol N., Leyes M., Akoto R., Fritsch B., Margheritini F., Rips L., Kautzner J., Duthon V., Togninalli D., Giacamo Z., Graveleau N., Zaffagnini S., Engbretsen L., Lind M., Maestu R., Von Bormann R., Brown C., Villascusa S., Monllau J.C., Ferrer G., Menetrey J., Hantes M., Parker D., Lording T., Samuelsson K., Weiler A., Uchida S., Frosch K.H., Robinson J., The posteromedial corner of the knee: an international expert consensus statement on diagnosis, classification, treatment, and rehabilitation (2020) KNEE SURG SPORT TR A. **IF: 3.1660**

Gamba C., Serrano-Chinchilla P., Ares-Vidal J., Solano-Lopez A., Gonzalez-Lucena G., Gines-Cespedosa A., Proximal Medial Gastrocnemius Release Versus Open Plantar Fasciotomy for the Surgical Treatment in Recalcitrant Plantar Fasciitis (2020) FOOT ANKLE INT, 41 (3), 267-274. **IF: 2.2920**

Gelber P.E., Barenius B., Perelli S., Role of Alignment and Osteotomy in Meniscal Injuries (2020) CLIN SPORT MED, 39 (1), 211-221. **IF: 2.2270**

Gelber P.E., Drager J., Maheshwer B., Leyes M., Barenius B., Robinson J., Pujol N., Tischer T., Margheritini F., Fritsch B., Frosh K.-H., Chahla J., Large variability exists in the management of posterolateral corner injuries in the global surgical community (2020) KNEE SURG SPORT TR A, 28 (7), 2116-2123. **IF: 3.1660**

Martel-Duguech L., Alonso-Jimenez A., Bascunana H., Diaz-Manera J., Llauger J., Nunez-Peralta C., Biagetti B., Montesinos P., Webb S.M., Valassi E., Thigh muscle fat infiltration is associated with impaired physical performance despite remission in Cushing's syndrome (2020) J CLIN ENDOCR METAB, 105 (5). **IF: 5.3990**

Masferrer-Pino A., Saenz-Navarro I., Rojas G., Perelli S., Erquicia J., Gelber P.E., Monllau J.C., The Menisco-Tibio-Popliteus-Fibular Complex: Anatomic Description of the Structures That Could Avoid Lateral Meniscal Extrusion (2020) ARTHROSCOPY, 36 (7), 1917-1925. **IF: 4.3250**

Perelli S., Erquicia J.I., Ibanez M., Daesino G., Gelber P.E., Pelfort X., Monllau J.C., Evaluating for Tunnel Convergence in Anterior Cruciate Ligament Reconstruction With Modified Lemaire Tenodesis: What Is the Best Tunnel Angle to Decrease Risk? (2020) ARTHROSCOPY, 36 (3), 776-784. **IF: 4.3250**

Ramirez-Bermejo E., Gelber P.E., Pujol N., Management of acute knee dislocation with vascular injury: the use of the external fixator. A systematic review (2020) ARCH ORTHOP TRAUM SU. **IF: 2.0210**

Thomas S., Borges F., Bhandari M., De Beer J., Urrutia Cuchi G., Adili A., Winemaker M., Avram V., Chan M.T.V., Lamas C., Cruz P., Aguilera X., Garutti I., Alonso-Coello P., Villar J.C., Jacka M., Wang C.Y., Berwanger O., et al. Association between myocardial injury and cardiovascular outcomes of orthopaedic surgery: A vascular events in noncardiac surgery patients cohort evaluation (VISION) substudy (2020) J BONE JOINT SURG AM, 102 (10), 880-888. **IF: 4.5780**

Diffusion Activities

Online Courses

- SARCOSTAGE Actualización en sarcomas July 2020. Módulo: Aproximación quirúrgica al tratamiento de los sarcomas óseos. Tumores óseos, Dr. Isidre Gracia.
- Eduardo Ortiz, Luis Ramos (Coordinators). Chapter: Osteosarcoma convencional (PI: I Gracia). Curso Online de Tumores Óseos (Benignos-Malignos) 2ª Edicion 2019. SECOT. On-line, May 2019-April 2020.

National Congresses

- The members of the group have contributed with more than 20 conferences and papers at national congresses in the scientific area of the research group.

Associated Groups

Pain and Neurosciences

Coordinator
Català Puigbó, Elena (FGS)
ecatala@santpau.cat

Members
Díaz Jover, Rubén (FGS)
Ferrándiz Mach, Marta (FGS)
Genové Cortada, Maria Mercè (FGS)
Melo Cruz, Martha Cristina (FGS)
Parera Ruiz, Ana (FGS)
Revuelta Rizo, Miren Eli (FGS)
Rius Llorens, María Carmen (FGS)
Santeulària Vergès, Maria Teresa (FGS)

Main Lines of Research

- Involvement of brain areas and release of substances in acute and chronic neuropathic pain.
- Sleep disturbance on initiating systemic opioid treatment in patients with severe chronic pain and altered sleep patterns.
- Influence of epidural corticosteroids treatments by different approach on the effectiveness of radicular pain due to herniated lumbar disc.
- Profile in terms of demographics, comorbidities, kind of pain, physical and mental status and disability of patient.
- Search for a local and non-pharmacological treatment for elderly patients with pain.
- Influence of radiofrequency lesions on different procedures in patients with chronic pain.

Scientific Challenges

- Establish the possible differences in brain area involvement between acute and chronic pain.
- Determine the extent of chronic pain according to the involvement of different brain areas and whether these alterations can improve with pain relief.
- Determine whether the intensity of chronic neuropathic pain as evaluated by the patient correlates with the patient's psychopathology, essentially anxiety, depression, and catastrophizing.
- Determine the profile of patients who would benefit from treatment with major systemic opioids in relation to night rest and establish the recommendable opioid.
- Establish the recommended opioid dose to start a treatment and how to withdraw them.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Psyquiatry: Maria Portella (Psycologist)
- Anesthesiology: Mireia Rodríguez and Marc Bausili (Acute Pain in Traumatology Area)
- Neurosurgery: Rodrigo Rodríguez (Neuromodulation)
- Neurology: Robert Belvis (Facial Neuralgias Pain)
- Neuroradiology: Beatriz Gómez-Ansón (Neuromodulation)

External Collaborations

- Miren Eli Revuelta. Asociación entre el uso de fármacos en dolor crónico y la incidencia y gravedad de la infección COVID-19: un estudio caso población. Multicéntrico nacional. Promotor: Víctor Mayoral, Hospital de Bellvitge. Collaborators: E. Català, M. Genové, M. Ferrandiz, M.T. Santeularia, M. Melo and R. Diaz. March 2020 - March 2021.

Active Grants

- Rubén Diaz Jover. Eficacia del abordaje del nervio supraescapular mediante la administración de corticoides versus radiofrecuencia polsada en el dolor crónico de hombro. Ensayo clínico aleatorizado doble ciego. IIBSP-COR-2017- 98.

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

Awards

- Spanish ISO certification and European IQNet (AENOR) Quality Control for the Unitat del Dolor, Hospital de Sant Pau. Director: Elena Català i Puigbò.
- R. Diaz, M. Melo, A. Parera, M Revuelta, E. Català. Ús de la tromoelastometria (ROTEM®) en el postoperatori de cirurgia abdominal major per a guiar el maneig de catèters epidurals en pacients amb test de coagulació rutinaris allargats. Fernando Vidal Award of the Societat Catalana del Dolor (ACMCB) 2020.

Scientific Production

Total Impact Factor: 5.483 · Mean Impact Factor: 5.483

Montes A, Roca G, Cantillo J, Sabate S, GENDOLCAT Study Group. Martín C, Troy J, Masó A, Pérez M, Rodríguez G, Muñoz H, de Zárate JG, Montes A, Fort B, Rodríguez C, Amorós D, Bande D, Escolano F, Santiveri X, et al. Presurgical risk model for chronic postsurgical pain based on six clinical predictors: a prospective external validation. PAIN. 2020 Jun 5 PMID: 32541391 doi:10.1097/j.pain.0000000000000194. **IF: 5.483**

Books or Chapters with ISBN

- Genové M., Heredia C. Mecanismos y vías de trasmisión del dolor. Manual del tratamiento del Dolor, 4ª Edición, pp. 3-26. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Català E., Melo M. Las Clínicas del Dolor. Manual del tratamiento del Dolor, 4ª Edición, pp. 27-39. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Santeularia M.T., Ferrandiz M. Tratamiento oral II: Opioides. Manual del tratamiento del Dolor, 4ª Edición, pp. 91-118. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Bainac L.A., Català E. Tratamiento oral III: fármacos coadyuvantes en el tratamiento del dolor. Manual del tratamiento del Dolor, 4ª Edición, pp. 121-144. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Ferrandiz M., Santeularia M.T. Tratamiento tópico. Manual del tratamiento del Dolor, 4ª Edición, pp. 145-160. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Revuelta M., Melo M. Bloqueos del sistema nervioso simpático. Manual del tratamiento del Dolor, 4ª Edición, pp. 187-199. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Díaz R., Català E. Técnicas de radiofrecuencia en el dolor crónico. Manual del tratamiento del Dolor, 4ª Edición, pp. 201-211. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Revuelta M., Rodriguez R., Ferrandiz M. Técnicas de Neuromodulación. Manual del tratamiento del Dolor, 4ª Edición, pp. 213-236. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Rodríguez R., Revuelta M. Técnicas ablativas neuroquirúrgicas y algias faciales. Manual del tratamiento del Dolor 4ª Edición, pp. 239-252. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Santeularia M.T., Genové M. Dolor Postoperatorio Manual del tratamiento del Dolor, 4ª Edición, pp. 255-305. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Gómez A., Melo M.. Cefaleas y Algias Faciales. Manual del tratamiento del Dolor, 4ª Edición, pp. 331-347. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Català E., Ferrandiz M. Dolor Neuropático I. Generalidades Manual del tratamiento del Dolor, 4ª Edición, pp. 349-365. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Català E., Melo M. Dolor Neuropático II. Herpes zóster, neuralgia post herpética, miembro fantasma. Polineuropatía diabética. Manual del tratamiento del Dolor, 4ª Edición, pp. 367-394. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Revuelta M., Rull M., Català E. Dolor Lumbar. Manual del tratamiento del Dolor, 4ª Edición, pp. 415-446 Permanyer, 2020. ISBN 978-84-18150-66-1.
- Parera A., Melo M., Díaz R. Dolor miofascial. Manual del tratamiento del Dolor, 4ª Edición, pp. 447-468 Permanyer, 2020. ISBN 978-84-18150-66-1.
- Ferrándiz M., Díaz R. Dolor osteoarticular: omalgia, coxalgia y gonalgia. Manual del tratamiento del Dolor, 4ª Edición, pp. 469-484. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Muñoz I., Roses L., Piñeiro A. Funciones de la enfermera en el manejo del paciente con dolor. Manual del tratamiento del Dolor, 4ª Edición, pp. 569-593. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Gil de Bernabé M., Santeularia M.T. Dosis equivalentes orientativas de opioides por diferentes vías de administración. Manual del tratamiento del Dolor, 4ª Edición, pp. 595. Permanyer, 2020. ISBN 978-84-18150-66-1.
- Ferrándiz M., Català E.. Introducción: Dolor Neuropático y Pregabalina. Experiencia de Pregabalina en Unidades de Dolor, pp 6-21. Inyecomedia SL. February 2020. ISBN 978-84-09-11546-4.
- Genové M., Sánchez E.. Pregabalina en el dolor neuropático de origen infeccioso: neuralgia post-herpética y síndrome de inmunodeficiencia adquirida. Experiencia de Pregabalina en Unidades de Dolor, pp 22-42. Inyecomedia SL. February 2020. ISBN 978-84-09-11546-4
- Revuelta M., Hinojal I. Neuropatía periférica asociada a tratamiento postquimioterapia y diabetes mellitus. Experiencia de Pregabalina en Unidades de Dolor, pp 44-57. Inyecomedia SL. February 2020. ISBN 978-84-09-11546-4.
- Parera A., Díaz R. Pregabalina en el dolor neuropático por neuropatías traumáticas, postIQ, compresivas. Experiencia de Pregabalina en Unidades de Dolor, pp 92-107. Inyecomedia SL. February 2020. ISBN 978-84-09-11546-4.
- Santeulària M.T., Vallhonrat P. Pregabalina en el paciente fràgil (con comorbilidades asociadas). Experiencia de Pregabalina en Unidades de Dolor, pp 108-121. Inyecomedia SL. February 2020. ISBN 978-84-09-11546-4.
- Ferrándiz M. Guías y Recomendaciones del Uso de Opioides en el Tratamiento del Dolor. Fármacos Opioides en el Tratamiento del Dolor: Entre la Opiofobia y la Opioifilia. ¿Qué sabemos hoy en día de ello? Las Recomendaciones de la Academia. Real Academia de Farmacia de Catalunya. Ed. Barcelona, 255-313, 2020. B 23074-2020.

Diffusion Activities

Conferences and Courses

- M. Revuelta. Speaker. Interventional Pain in Complex Regional Pain Syndrome. Virtual International Pain Meeting- VIP Meeting. Brazil, Virtual, 3-5 December 2020.
- E. Català. Clinical treatment of CRPS: how can we improve our therapy? Virtual International Pain Meeting- VIP Meeting. Brazil, Virtual, 3-5 December 2020.
- R. Díaz. Neurofisiología del dolor orofacial. Curso de Experto Universitario de ATM y Dolor Orofacial. 11 February 2020.
- R. Díaz. Monitorització Bàsica. Course of the subject Anestesiologia. Grau en Medicina i Cirurgia. Universitat Autònoma de Barcelona. 27 October 2020.
- M. Ferrándiz. Bases anatómicas y neurofisiológicas de la transmisión del dolor. Clases teóricas para residentes. Sociedad Catalana de Anestesiología, Reanimación y Terapia del Dolor (SCARTD). 21 September 2020.
- M. Ferrandiz. Moderator. Round table. Consecuencias de la Pandemia en la Población General y en las personas con dolor crónico. Carlos Suso, Juan Vicente Luciano. Impacte de la pandèmia SARS-COV2 en les Unitats de Dolor Sociedad Catalana de Dolor. Virtual, 27 Noviembre 2020.

Associated Groups

Nursing Care Research

Coordinator
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Members
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López Ortega, Laura (FGS)
Marine Méndez, Albert (FGS)
Márquez López, Adrián (FGS)
Ricart Basagaña, Maria Teresa (FGS)
Roca Sarsanedas, Jaume (FGS)
Romero Pastor, Mónica (FGS)
Sillero Sillero, Amalia (FGS)
Sist Viaplana, Xènia (FGS)
Valverde Bernal, Jonatan (FGS)
Vicente Pérez, Sílvia (FGS)
Villalobos Abelló, Alba (FGS)

Main Lines of Research

- Fall prevention and analysis of fall-related factors.
- Translation and validation of care evaluation questionnaires.
- Constipation and ageing.
- Quality of life related to nursing care.
- Development and application of health science methods: quantitative and qualitative methods, text analysis and discourse analysis.
- Patient satisfaction with nursing care.
- Attention to the family.
- Pain management.

Scientific Challenges

- Strengthen implemented research lines and disseminate the results of active projects.
- Explore the impact of nursing care on patients, strategies for care improvement and the application of results to care models.
- Improve the development and understanding of qualitative research within the context of the health sciences and disseminate qualitative methods and text and discourse analyses as tools in health science research.
- Create the synergies necessary to consolidate the group's activities.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Gemma Mas Dalmau. Optimisation of antibiotic prescription in acute non-complicated respiratory tract infections in children: a multicenter factorial randomised controlled trial targeting health professionals and parents. La Marató de TV3 Grant.

External Collaborations

- Gemma Mas. Impact of the implementation of Good Practices Guides on beliefs-attitudes and behavior in relation to Practice Based on Evidence and the perception of the nursing work environment (PR-259/18). COIB Grant. In collaboration with Hospital del Mar Medical Research Institute Foundation.
- M. Queralt Cebrià. Improving the therapeutic relationship in nursing care through the evidence multicentric study in Catalonia psychiatric units. In collaboration with Hospital del Mar Medical Research Institute Foundation.
- Gemma Berga Congost. Creación y estudio de las propiedades psicométricas de un nuevo instrumento (cuestionario) para medir el grado de adherencia a las conductas de autocuidado recomendadas y el cambio en el estilo de vida en pacientes que han padecido un síndrome coronario agudo. IIBSP-INT-2019-74. In collaboration with Sant Pau Nursing University and Hospital Clínic (IDIBAPS).
- Miriam Armora Verdú. Risc detection and prevention of lymphedema secondary to breast cancer: desing of a multidisciplinary approach. (PR-378-2019) COIB Grant.

Active Grants

- Adrián Márquez López. Desenvolupament i avaluació de l'impacte d'un llistat de verificació de seguretat adaptat a la cardiologia intervencionista. PR-235/17. Fundació Infermeria i Societat. Duration: 2018-2021. 4,000 €.
- Gemma Berga Congost. Atención precoz en el diagnóstico de infarto agudo de miocardio: impacto de una intervención educativa y organizativa. SLT008/18/00052. Departament de Salut. Duration: 2019-2021. 73,343.84 €.
- Carme Jover Sancho. Effect of a music therapy intervention on the mood state of the critical patient in a Level III Hospital. IIB-SP-MUS-2018-83. Private financing. Duration: 2018-2021.
- Jaume Roca. Evaluación de la efectividad del calor seco en las extravasaciones del contraste yodado. Estudio Multicéntrico. ClinicalTrials.gov ID: NCT03426735. Duration: 2016-2021.
- Adrià Márquez. Doctoral Thesis Study: Impacto en la Calidad Asistencial de la "STructural heARt NURSE" como Nuevo Rol Avanzado

de Enfermera en Cardiología Intervencionista en España. Proyecto STAR Nurse. IIBSP-STA-2019-123. Clinical Trials: https://www.clinicaltrials.gov/ct2/show/NCT04301648. Duration: 2019-2023.

- Adrià Márquez. Desarrollo y Evaluación del Impacto de un Listado de Verificación de Seguridad Adaptado a la Cardiología Intervencionista. IIBSP-LVS-2017-49. Fundació Infermeria i Societat. PR 235/17. Clinical Trials: https://clinicaltrials.gov/ct2/show/NCT04205825. Duration: 2017-2021.

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

Grants Awarded in 2020

- Silvia Vicente Pérez. Swaddy. FIPSE 3751-20. Fundación para la Innovación y la Prospectiva en Salud en España, 2020-2021. 30,000 €.

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

Scientific Production

Total Impact Factor: 20.955 · Mean Impact Factor: 2.994

Berga-Congost G, Brugaletta G, Valverde-Bernal J, Márquez-López A, Ruiz-Gabalda J, Garcia Picart J, Puig-Campmany M, Martinez Momblan MA. The importance of organization variables in treatment time for patients with ST-elevation acute myocardial infarction improve delays in stemi. AUSTRALASIAN EMERGENCY CARE, 2020. In press. https://doi.org/10.1016/j.auec.2020.10.001. **IF: 0.542**

Berga Congost G, Brugaletta S, Valverde Bernal J, Marquez Lopez A, Ruiz Gabalda J, Garcia-Picart J, Puig Campmany M, Martinez-Momblan MA. The Importance of Organizational Variables in Treatment Time for Patiens with ST-Elevation Acute Myocardial Infarction. AUSTRALAS EMERG CARE. 2020 Nov 13:S2588-994X(20)30106-8. **IF: 0.548**

Sillero-Sillero A., Zabalegui A., Analysis of the work environment and intention of perioperative nurses to quit work (2020) REV LAT-AM ENFERM, 28, 1-10. **IF: 1.2970**

SEC Working Group for the 2020 ESC guidelines on adult congenital heart disease, Expert Reviewers for the 2020 ESC guidelines on adult congenital heart disease, SEC Guidelines Committee. Comments on the 2020 ESC guidelines for the management of adult congenital heart disease. REV ESP CARDIOL. 2020; DOI: 10.1016/j.recesp.2020.11.022. **IF: 4.642**

SEC Working Group for the 2020 ESC guidelines on atrial fibrillation, Expert Reviewers for the 2020 ESC guidelines on atrial fibrillation, SEC Guidelines Committee. Comments on the 2020 ESC guidelines for the management of atrial fibrillation. REV ESP CARDIOL. 2020; DOI: 10.1016/j.recesp.2020.11.017. **IF: 4.642**

SEC Working Group for the 2020 ESC guidelines on sports cardiology and exercise in patients with cardiovascular disease, Expert Reviewers for the 2020 ESC guidelines on sports cardiology and exercise in patients with cardiovascular disease, SEC Guidelines Committee. Comments on the 2020 ESC guidelines on sports cardiology and exercise in patients with cardiovascular disease. REV ESP CARDIOL. 2020; DOI: 10.1016/j.recesp.2020.12.010. **IF: 4.642**

SEC Working Group for the 2020 ESC guidelines on acute coronary syndromes in patients presenting without persistent ST–segment elevation, Expert Reviewers for the 2020 ESC guidelines on acute coronary syndromes in patients presenting without persistent ST–segment elevation, SEC Guidelines Committee. Comments on the 2020 ESC guidelines for the management of acute coronary syndromes in patients presenting without persistent ST–segment elevation. REV ESP CARDIOL. 2020; DOI: 10.1016/j.recesp.2020.12. **IF: 4.642**

Other Publications

- Fradejas Sastre V, Fernández Redondo C, García Hernández P, de la Vieja Alarcón JJ, Naya Leira C, Marquez Lopez A, Monteiro Teixeira CA, Rubio Alcañiz V, Muñiz García J. Hemodinámica. Estudio MAREC, diagnóstico de la situación de Enfermería en España. Enferm Cardiol. 2020; 27 (81): 21-31
- Villalobos Abello A, Valverde Bernal J, Marquez Lopez A, Galvez Tugas E. Satisfacción sobre un Programa de Educación al Paciente Trasplantado de Corazón: un Estudio Observacional Transversal. Enferm Cardiol. 2020; 27(80):34-44
- Perez-Ortega S, Mesa-Rico R, Fernández-Redondo C, Valverde-Bernal J. Situación de la enfermera en cardiología durante la pandemia COVID-19. ENFERM CARDIOL. 2020;27(79): 82-89.

Diffusion Activities

- Valverde Bernal, Jonatan; Ruiz Gabaldà, Judit; Delgado Sánchez, Francisco J; Berga Congost, Gemma; Márquez López, Adrián. Impacto en la calidad de vida tras implantación de clip mitral. Poster. ECardio 2020, IV Congreso de la Sociedad Española de Cardiología. 2020.
- Valverde J. Futuro. Paper on round table Pasado, presente y futuro de procedimientos estructurales en Hemodinámica. Curso CSC Estructural de la A a la Z. Barcelona 2020.
- Valverde Bernal, Jonatan; Berga Congost, Gemma. Influencia del género y de la edad en los indicadores de resultado del implante de clip mitral. Oral communication. 41º Congreso de la Asocicación Española de Enfermería en Cardiología – eCongreso SEC 2020.
- Valverde Bernal, Jonatan; Martínez Pérez, José; Castelló Fosch, Núria; Ruiz Gabaldà, Judit. ¿Debemos realizar un seguimiento a los pacientes con elevadas dosis de radiación tras angioplastias de oclusiones crónicas totales? Oral communication. 31º Congreso de Asociación de Cardiología Intervencionista. Congreso Virtual 2020.
- Martínez Pérez, José; Valverde Bernal, Jonatan; Castelló Fosch, Núria; Ruiz Gabaldà, Judit. ¿Se cumplen los criterios de seguridad en la administración máxima de contraste en angioplastias de oclusiones oclusivas crónicas? Oral communication. 31º Congreso de Asociación de Cardiología Intervencionista. Congreso Virtual 2020.
- El futur de la Infermeria d'Hemodinàmica. Paper. Webinar Jornada d'Infermeria. Barcelona, 2020.
- Valverde Bernal, Jonatan, Ruiz Gabaldà, Judit; Delgado Sánchez, Francisco J; Berga Congost, Gemma; Márquez López, Adrián. Impacto en la calidad de vida tras implantación de clip mitral. Congress e-Cardio 2020.
- Gemma Berga Congost. Speaker. Cardioactualidad: Lo más relevante en la Cardiología mundial y europea. Cardioactualidad en enfermería cardiovascular. eCongreso SEC 2020, Congreso de la Salud Cardiovascular, Sociedad Española de Cardiología y Asociación Española de Enfermería en Cardiología. October 2020.
- Berga Congost G, Valverde Bernal J, Castelló Fosch N, Peregrina E, Millán Álvarez X. Do all patients treated with mitraclip need to be admitted to ICU? Poster. Association of Cardiovascular Nursing and Allied Professions of European Society of Cardiology. EuroHeartCare 2020 virtual. July 2020.
- Miriam Armora. PreparatB: una aplicació per a smartphone per a la preparació prequirúrgica. Nit Europea de la Recerca. Associació Catalana de Comunicació Científica. 27 November 2020.
- Miriam Armora. PreparatB: una aplicació per a smartphone per a la preparació prequirúrgica. Escola el Sol i la Lluna de Castellar del Vallés. 27 November 2020.
- Miriam Armora. Talk on the day of the Women and Science. Escola Enric Grau Fontserè de Flix (Tarragona). 27 November 2020.

Associated Groups

Reproductive Health

Coordinator
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Members
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Espinós Gómez, Juan José (FGS)
Estadella Tarriel, Josep Ramon (FGS)
Guinot Gasull, Misericordia (FGS)
Perelló Capo, Josep (FGS)
Rams Llop, Noèlia (FGS)

Main Lines of Research

- The medical approach to hormonally induced or controlled gynaecological diseases: endometriosis, fibroids, menstrual disorders.
- Explore non-contraceptive benefits of hormonal contraception.
- Develop tools for early diagnosis and management of heavy menstrual bleeding.
- Polycystic ovary syndrome, premature and normal menopause, amenorrhea.

Scientific Challenges

- To develop and test in clinical settings easy tools to identify heavy menstrual bleeding.
- To evaluate the impact of different contraceptive methods on the characteristics of menstruation.
- To evaluate the cost/benefit ratio of using non-surgical approaches for hormone-mediated organic gynaecological diseases.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Genetic Diseases

Scientific Production

Total Impact Factor: : 5.768 · Mean Impact Factor: 1.923

Ballester MR, Puntes M, Coimbra J, Perelló J, Gich I, et al. (2020) Pharmacokinetics, safety, and tolerability of Pentoxifylline intravaginal gel for subfertile/ infertile couples with low sperm quality: phase I randomized controlled clinical trial in healthy women. TRENDS MED 21: DOI: 10.15761/TiM.1000263. **IF: 2.2**

Calaf J., Palacios S., Cristobal I., Canete M.L., Monleon J., Fernandez J., Hernandez A., Vazquez F., Validation of the Spanish version of the Uterine Fibroid Symptom and Quality of Life (UFS-QoL) questionnaire in women with uterine myomatosis Validación de la versión española del cuestionario Síntomas y Calidad de Vida en los Miomas Uterinos en mujeres con miomatosis uterina (2020) MED CLIN-BARCELONA, 154 (6), 207-213. **IF: 1.6350**

Calaf J., Cancelo M.J., Andeyro M., Jimenez J.M., Perello J., Correa M., Parera N., Lete L.I., Calvo A., Doval J.L., Duarte R., Garcia J.L., Colome C., Development and Psychometric Validation of a Screening Questionnaire to Detect Excessive Menstrual Blood Loss That Interferes in Quality of Life: The SAMANTA Questionnaire (2020) J WOMENS HEALTH, 29 (7), 1021-1031. **IF: 1.9330**

Diffusion Activities

Dissemination to Society

- Participation in the updating of the website heavymenstrualbleeding.com, which contains information aimed at both patients and health professionals involved in the field of reproductive health (midwives, nursing, etc.) on heavy menstrual bleeding, such as identify it and treat it.

Scientific Diffusion

- J. Calaf. Co-Moderation Round table:The pandemic as catalyst of the paradigm shift in Gynaecological therapy. and Speaker "Sagnat menstrual abundant en el context de la pandemia" november 2020, 6th -Virtual Congres THE SOCIETY OF ENDOMETRIOSIS AND UTERINE DISORDERS - SEUD
- Camil Castelo Branco, Misericordia Guinot Gasull. Coordinators. Creation of the Grupo de Insuficiencia Ovárica Prematura. Spain.
- Estudio epidemiológico observacional en pacientes con insuficiencia ovárica prematura. IIBSP Health-IOP- 2012-109. (Clinical Trials.gov ID: NCT02068976). Integration at the West London Premature Ovarian Failure Database. Research Database Management Protocol. POF-DB. Promoter Mr. Nick Panay. Working group leader at IR-Sant Pau: M.Guinot.

Associated Groups

Cardiac Surgery

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Members
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Ginel Iglesias, Antonino (FGS)
Roselló Díez, Elena (FGS)
Tauron Ferrer, Manel (FGS)

Main Lines of Research

- Off-pump coronary artery by-pass grafting surgery.
- Mitral repair surgery.
- Aorta pathology: aortic root surgery, aortic arch surgery (hybrid techniques).
- Follow-up of sutureless aortic valve prosthesis: Perceval S.
- Follow-up of surgical check-list implementation.
- Risk scores.
- Cardiac protection: Del Nido cardioplegia.
- Mini-invasive techniques: mini-sternotomy, mini-thoracotomy, MID-CABG surgery.
- Total arterial graft revascularization.
- New valvular transcatheter prosthesis: TAVI transaxillary approach (Portico), TAVI transapical approach (Accurate).

Scientific Challenges

- Consolidation as a research group in different cardiac surgery-related fields, specifically sutureless valve prosthesis, radial artery in myocardial revascularization, different TAVI approaches, etc.
- Participation in the assessment and validation of new products employed in cardiac surgery: haemostatics, sutures, etc.
- Collaboration with different national and international research teams involved in our lines of study: epicardial fat study (endocrinology), calcium channels in auricular myocytes (ICCV).

Collaborations

Collaborations with other IIB Sant Pau Groups

- Regulation of Cardiac Rhythm and Contraction (Leif Hove-Madsen).
- Clinical and Translational Cardiology (José María Guerra Ramos).
- Regulatory Mechanisms of Cardiovascular Remodelling (Cristina Rodíguez / José Martínez González).
- Oncology/Haematology and Transplantation (Jordi Sierra).

External Collaborations

- José Montiel Serrano and Elena Roselló Díez. Professors of Medicine at the Faculty of Medicine, Universitat Autònoma de Barcelona (UAB).
- Mercè Cladellas Capdevila. Collaboration with Department of Cardiology. Hospital del Mar, Barcelona.
- Sandra Casellas Casanovas. Estudio SURE-AVR "Sorin Universal Registry on Aortic Valve Replacement" Collaboration. Site Code 724001. Liva Nova España, SL.
- Collaboration with Hewlett-Packard: 3D printing models. HP División Médica, Spain.

Active Grants

- Cardiac valvular prosthesis study, Abbott (Saint Jude).
- Sandra Casellas Casanovas. Sorin Universal Registry on Aortic Valve Replacement. Study SURE-AVR. Site Code 724001. Liva Nova España, SL. Duration: indefinite.
- Manel Tauron Ferrer. Study Braun. PREMIVALVE. Duration: indefinite.
- Manel Tauron Ferrer. Ensayo clínico aleatorizado, abierto y multicéntrico para comparar la eficacia y seguridad de la cardioplegia Buckberg vs del nido en sustitución valvular aórtica aislada. IIB Sant Pau-CAR-2018-71.
- Elena Rosselló Díez. Cardiac surgery outcomes in blood-transfusion acceptors and non-acceptors: a retrospective cohort study. IIB-SP-TRA-2020-36
- Elena Rosselló Díez. Levosimendán preoperatorio en cirugía coronaria con disfunción ventricular severa: ¿tiene sentido? Institut de Recerca de l'HSP-IIB Sant Pau. IIBSP-LEV-2020-153.

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

Doctoral Theses

- Antonino José Ginel Iglesias. Predictores preoperatorios de mortalidad alejada tras cirugía valvular cardiaca. Análisis por partición recursiva. Directors: Xavier Rius Cornadó, Xavier Borrás Pérez, José María Padró Fernández. Date of defense: 20/02/2020

Scientific Production

Total Impact Factor: 11.663 · Mean Impact Factor: 2.916

Amoros-Figueras G, Roselló-Díez E, Sánchez-Quintana D, Casabella-Ramón S, Jorge E, Nevado-Medina J, Arzamendi D, Millan X, Alonso-Martin C, Guerra JM and Cinca J. Changes in local atrial electrograms and surface ECG induced by acute atrial myocardial infarction. FRONT PHYSIOL. 2020;11:264. Online Access. doi: https://doi.org/10.3389/fphys.2020.00264. **IF: 3.367**

Irabien-Ortiz A., Carreras-Mora J., Sionis A., Pamies J., Montiel J., Tauron M., Fulminant myocarditis due to COVID-19 Miocarditis fulminante por COVID-19 (2020) REV ESP CARDIOL, 73 (6), 503-504. **IF: 4.6420**

Permanyer E., Munoz-Guijosa C., Padro J.-M., Ginel A., Montiel J., Sanchez-Quesada J.L., Vila L., Camacho M., Mini-extracorporeal circulation surgery produces less inflammation than off-pump coronary surgery (2020) EUR J CARDIO-THORAC, 57 (3), 496-503. **IF: 3.4860**

Roselló-Díez E, Astrosa E, Casellas S, Tauron M, Galán J, Ginel A, Montiel J. Levosimendán preoperatorio en cirugía coronaria con disfunción ventricular severa: ¿tiene sentido? CIRUGÍA CARDIOVASCULAR [Internet]. 15 de diciembre de 2020. http://www.sciencedirect.com/science/article/pii/S1134009620302473. **IF: 0.168**

Diffusion Activities

- XXV Congreso de la SECCE. Santander-Virtual. 14-17 October 2020. Communications:
  - E. Roselló, E. Astrosa, S. Casellas, M. Tauron, V. Mescola, L. Corominas, A. Irabién, A. Ginel, J. Montiel. Rendimiento del preacondicionamiento con levosimendán en cirugía coronaria con disfunción ventricular severa. Oral communication.
  - C. Pradas, C Muñoz-Guijosa, D Padrol, E Berastegui, E. Roselló, F Estévez-Cid, G Cuerpo. Uso de válvulas sin sutura en endocarditis valvular aórtica nativa y protésica activa. Oral communication.
  - A. Irabién, M. Tauron, V. Mescola, L. Corominas, A. Ginel, E. Roselló, S. Casellas, E. Astrosa, J. Montiel. Alternativa quirúrgica en la discordancia del tamaño anular y el velo anterior mitral. Oral communication.
  - A. Irabién, E. Roselló, V. Mescola, L. Corominas, M. Tauron, S. Casellas, E. Astrosa, A. Ginel, J. Montiel. Fibroelastoma papilar aórtico. Poster.
  - A. Irabién, A. Ginel, V. Mescola, L. Corominas, M. Tauron, E. Roselló, S. Casellas, E. Astrosa, J. Montiel. Técnica de doble parche modificada para cierre de comunicación interventricular. Poster.
  - V. Mescola, L. Corominas, A. Ginel, M. Tauron, E. Roselló, S. Casellas, E. Astrosa, J. Montiel. Tratamiento quirúrgico de disfagia lusoria por Divertículo de Kommerell y arteria subclavia derecha aberrante. Poster.
  - V. Mescola, L. Corominas, A. Ginel, M. Tauron, E. Roselló, S. Casellas, E. Astrosa, J. Montiel. Quiste pericárdico calcificado: la impresión 3D como aliado. Poster.
  - L. Corominas, V. Mescola, S. Casellas, A. Ginel, M. Tauron, E. Roselló, E. Astrosa, J. Montiel. Disección aórtica crónica en paciente que rechaza hemoderivados. Poster.
  - L. Corominas, V. Mescola, M. Tauron, A. Ginel, E. Roselló, S. Casellas, E. Astrosa, J. Montiel. Presentación tardía de rotura cardíaca contenida postinfarto tratada con cirugía de remodelado ventricular. Poster.

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Sant Pau Biomedical Research Institute Image bank