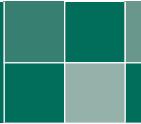


Annual Scientific Report 2015



Instituto de Investigación Sanitaria Gregorio Marañón



Annual Scientific Report 2015



Hospital General Universitario
Gregorio Marañón



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FUNDACIÓN INVESTIGACIÓN BIOMÉDICA
HOSPITAL GREGORIO MARAÑÓN

Report prepared by the Biomedical Research Foundation of Hospital Gregorio Marañón and the Health Research Institute of Hospital Gregorio Marañón.

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Presentation



PRESENTATION

Once again, we are pleased to present the Annual Scientific Report of Instituto de Investigación Sanitaria Gregorio Marañón (IISGM [*Gregorio Marañón Health Research Institute*]). The presentation of the Report is particularly relevant given the evident consolidation of our structure and our scientific activity, as set out herein. In this sense, the 2015 Report provides not only a detailed analysis of activity in the various research areas and groups of the IISGM, but also a unique opportunity for a strategic and in-depth analysis of the Institute's progress.

The publication of the Annual Scientific Report is a wonderful opportunity to increase the visibility of our research activity, and, from an external viewpoint, enables us to showcase our capacity for research and innovation to other institutions and social agents.

At the same time, the Report allows us to openly acknowledge the enormous effort made by all the research groups under particularly complex economic and social conditions. Therefore, the scientific development associated with the Institute's structure in terms of priority research areas with their corresponding groups has led to the greatest growth in scientific output in our short history. In the year 2015, we reached an impact factor of 2588.5 through the publication of 631 documents. We feel it is important to stress the rigor with which publications allocated to IISGM are analyzed and thus highlight the robustness of the indicator. In addition, for the first time, scientific output in the form of Letters was considered in the calculation for 2015, thus increasing the number of publications to 695 and the impact factor to 2952.9. In this context, it is also important to highlight the number of publications in which researchers from the Institute played a leading role, the degree of international cooperation in the different publications, and the high number of original articles in first-decile and first-quartile journals, all of which are indicators of a major increase in the quality of our publications.

Similarly, we must highlight the commitment of IISGM groups to the training of researchers. The fruits of this commitment are seen in the considerable number of doctoral theses prepared and defended in 2015. In this context, we were

able to develop an ambitious Researcher Training Plan thanks to the invaluable work of the recently created IISGM Training Committee.

Special mention must be made of the key role played by innovation in the IISGM. The year 2015 was one of continued progress for the IISGM Innovation Unit and Innovation Committee, which place the Institute in an excellent position to address the growing relevance of innovation in research activity. The rewards can be seen in our innovation portfolio, which, while well adapted to today's world, has enormous potential for growth and remains highly attractive for the industrial and productive sectors.

The Institute's research activity would not be possible without the ability of our researchers to compete successfully in competitive calls for funding. In 2015, researchers from the IISGM fared very well in many calls, and our Institute was the most successful health research institute in the Community of Madrid in the ISCIII Strategic Health Action. Particularly noteworthy was the Institute's ability to obtain human resources for the different programs, thus laying the foundations for the transfer of knowledge to the next generation of researchers.

Through the Biomedical Research Foundation of Hospital Gregorio Marañón, IISGM is making every effort to improve its internal management and quality assurance processes. Although this improvement is being made in a particularly complex economic and administrative environment, it provides an added advantage for the activity of our researchers. Therefore, we believe that the experience gained from the intense work carried out to improve the management of research at our Institute could be of interest for other institutions in Spain, to the extent that we have published our findings in national specialist journals.

The Annual Scientific Report provides us with yet another excellent opportunity to express our heartfelt thanks to all the Area Coordinators, Group Directors, research groups and clinical services that have made such an important contribution to the progress of the IISGM and to its standing in the field of research, which is the fruit of dedicated commitment over the years. Only

through the combined effort of our professionals in line with a strategy that aims to improve patients' health are we able to provide the favorable results set out in this Report. We would like to make special mention of the many young researchers, who, again, under considerably difficult conditions, place their talent and determination at the service of research in the liSGM.

As is our custom, we would like to finish on an optimistic note. We firmly believe that our Institution is moving forward decisively on the road to consolidated future growth. Thus, we consider ourselves a privileged Institute that is able to harmoniously combine the basic concepts underlying biomedical

research, namely, the issues that arise daily in clinical practice and our common vocation to address them.

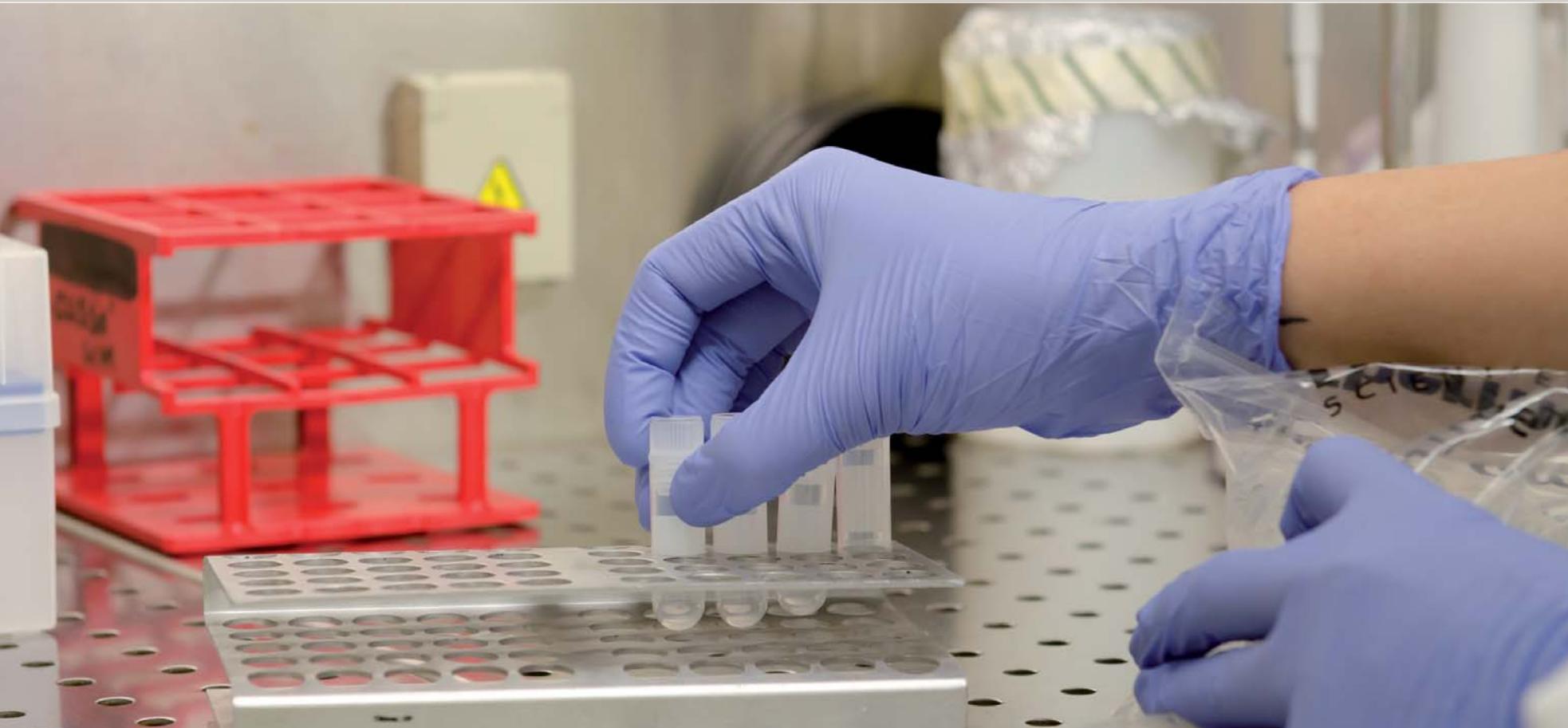
Thank you very much.

Dr. Ismael Buño Borde
Scientific Director of liSGM

María Codesido López
Managing Director of Hospital General Universitario Gregorio Marañón

2

Executive summary



Global Analysis

Analysis of the scientific production of liSGM and its bibliometric impact is an essential element in the evaluation of the Institute's research activity, given that both factors reflect the competitiveness of its researchers.

In order to prepare the research report, we analyzed journals indexed in the *Web of Science™ Core Collection*.

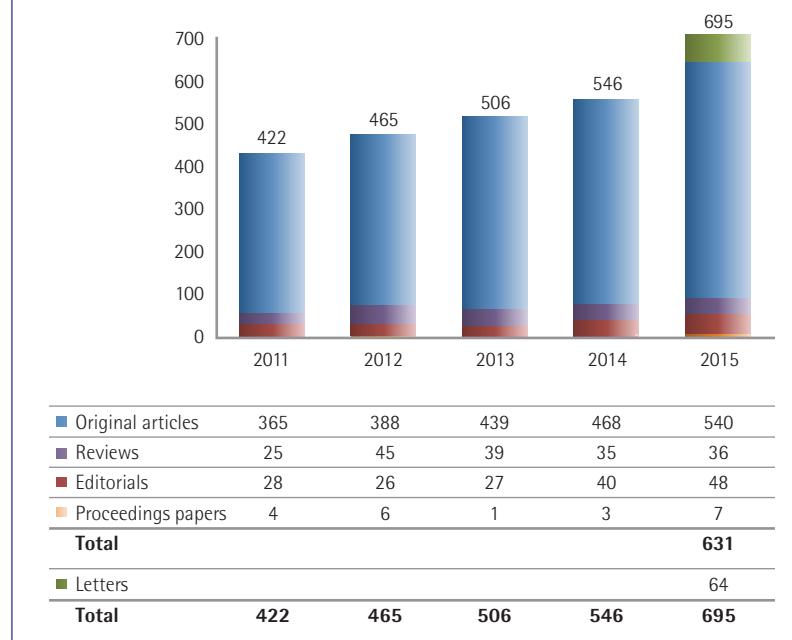
Publications were assigned to the various areas and groups by considering only those in which the liSGM, Hospital General Universitario Gregorio Marañón, or both were included in the institutional affiliations in the *Web of Knowledge*. Nevertheless, we also performed an exhaustive search of possible inaccurate denominations. Therefore, we have not included publications by researchers in which their affiliation to the Institute/Hospital does not appear clearly.

The total sum for the impact factor only takes into account information from indexed publications (eg, original articles, reviews, editorials, and proceedings papers) and excludes other types of publication (case reports, etc...). In addition, for the first time, scientific output in the form of Letters was considered in the calculation for 2015 impact factor. The impact factor presented in the figures corresponds to the year of publication.

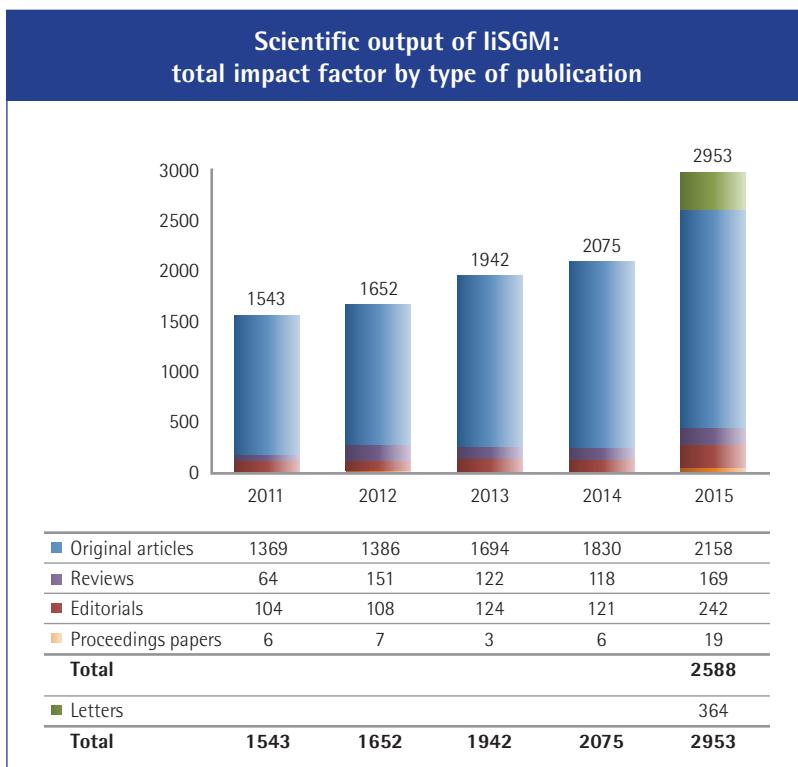
Publications involving different groups or areas of the Institute are counted individually in each group and area, although only once for the calculation of the total impact factor of the Institute.

The objective of the methodology used is none other than to apply internationally validated bibliometric tools for the analysis of scientific output, thus ensuring the robustness of the data contained in the Research Report.

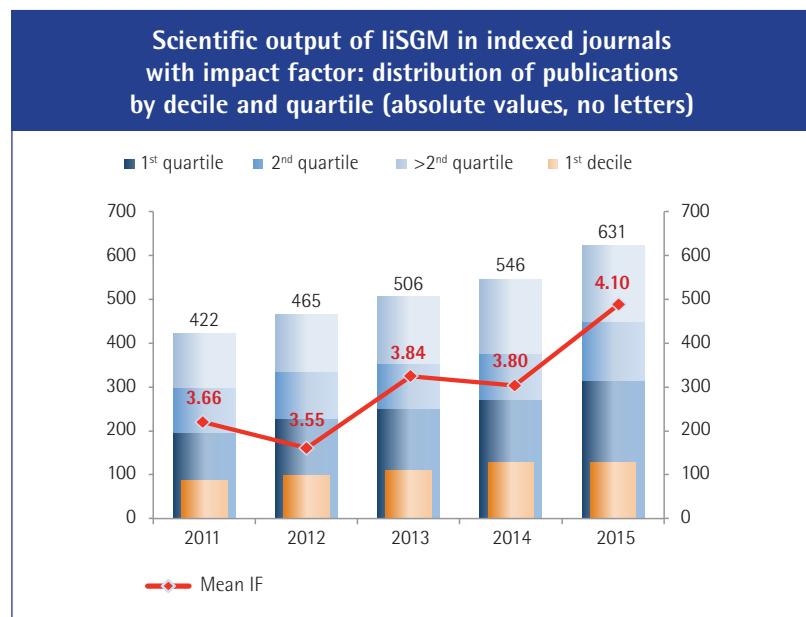
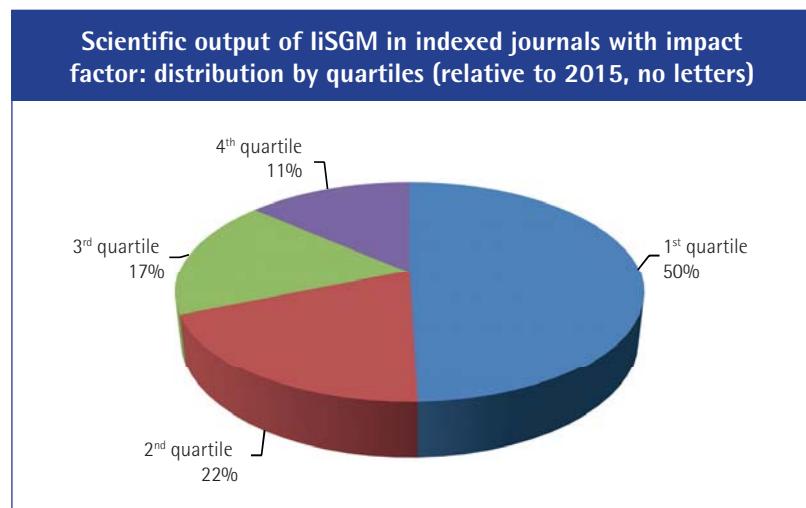
Scientific output of liSGM in indexed journals with impact factor: number of publications by type of publication



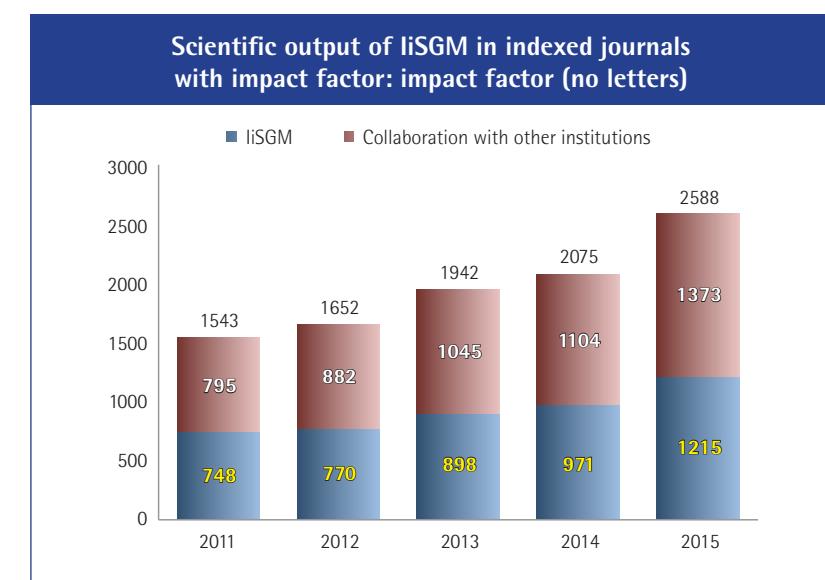
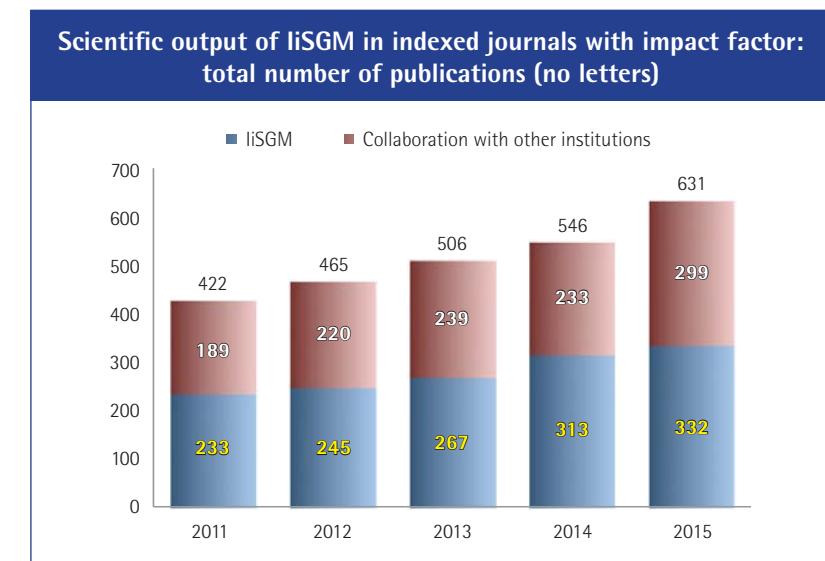
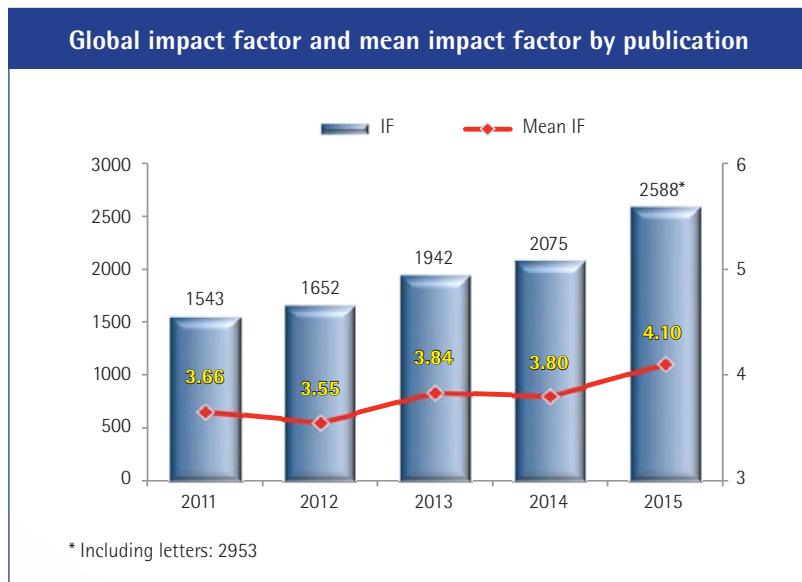
In quantitative terms, the scientific output of liSGM during 2015 consolidates the growing trend observed in recent years, with a total of 631 indexed publications (695 including letters), representing a global impact factor of 2588 points (2953 including letters), ie, 24.7% higher than in 2014 and 67.7% higher than in 2011.



The figure shown above summarizes the total impact factor corresponding to the scientific output of the liSGM for each of the last 5 years and its distribution according to the different types of publication. The impact factor for the year 2015 was 2588 (2953 including letters). As can be observed, the bulk of the impact factor corresponds to original articles, which account for more than 83.4% of the total impact factor. It is important to note that, once again, the largest increase in the global impact factor was in original articles. The number of editorials and reviews in recent years must be emphasized, since these probably represent the increasing value of the scientific opinion of researchers from the liSGM.



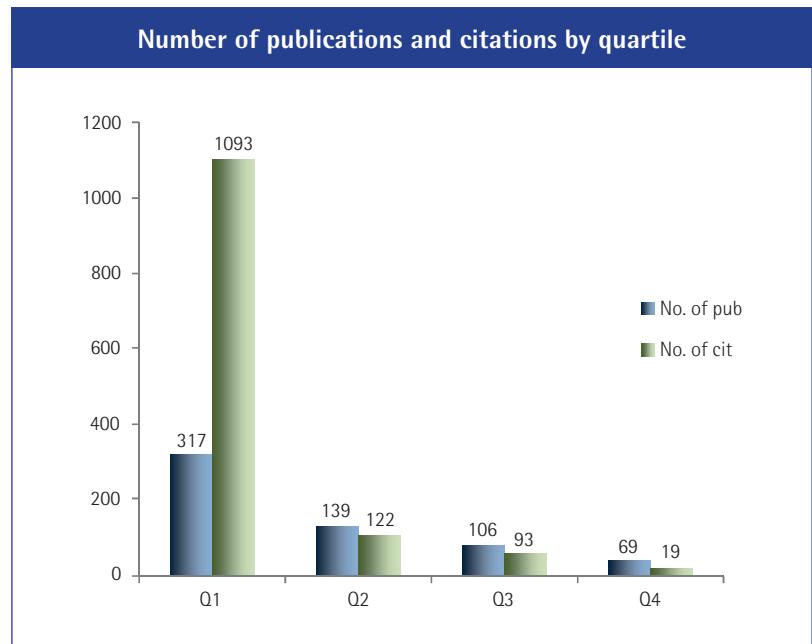
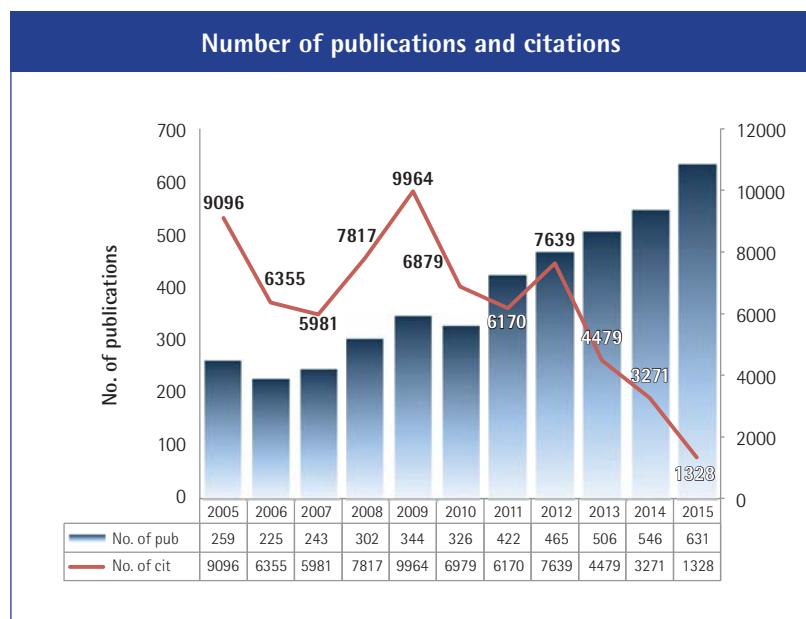
The 2 previous graphs show the distribution of liSGM publications according to quartile and decile. The absolute number of first-quartile publications continues to be greater than that of the previous year, whereas the mean impact factor has increased by 0.30 points with respect to 2014.



The analysis of activity is based specifically on those publications whose lead authors (first, last, or corresponding author) are LiSGM researchers.

As for collaborative scientific output, 47.4% of publications and 53% of the impact factor are accounted for by articles generated in cooperation with other institutions. Furthermore, approximately 53% of the scientific output of LiSGM is accounted for by articles whose main authors belong to the Institute.

The number of citations for LiSGM publications over time is logically greater in older publications, although the number of citations in relatively recent publications (2008-2012) is noteworthy, as is the number of first-quartile publications.

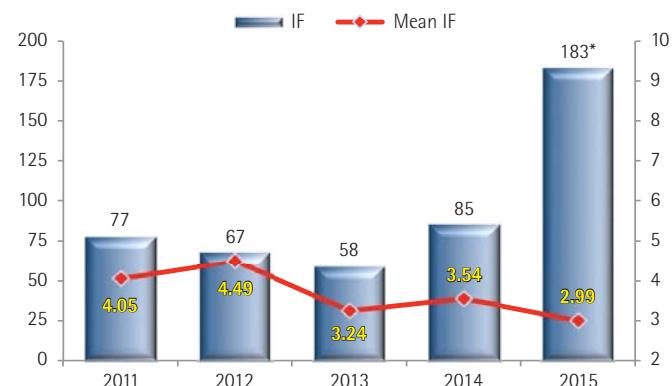


Finally, one of the most relevant elements within the scientific structure of health care research institutes is the grouping of research activity in **priority areas**, which are characterized by their scientific and social relevance and by their capacity for transferring knowledge to society.

LiSGM has 7 priority research areas, whose scientific activity is set out in detail below in 2 graphs: the first summarizes the total impact factor together with the mean impact factor by publication; the second summarizes the scientific output of the research area distributed by first decile and quartiles. Both figures show the scientific output for the last 5 years.

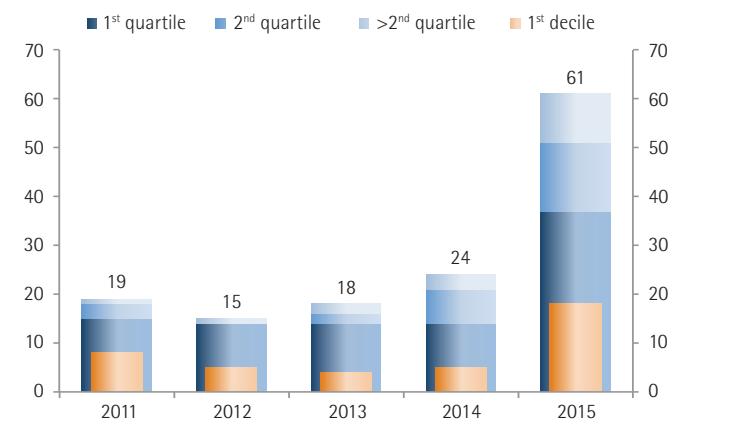
AREA 1: BIOMEDICAL ENGINEERING

Scientific output of Area 1 in indexed journals with impact factor: total and mean impact factor



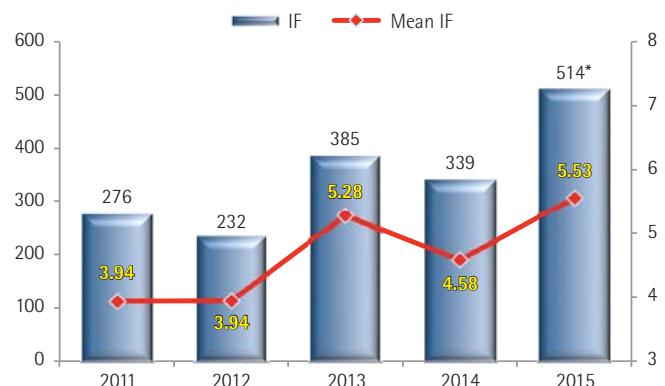
* Including letters: 183

Scientific output of Area 1 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



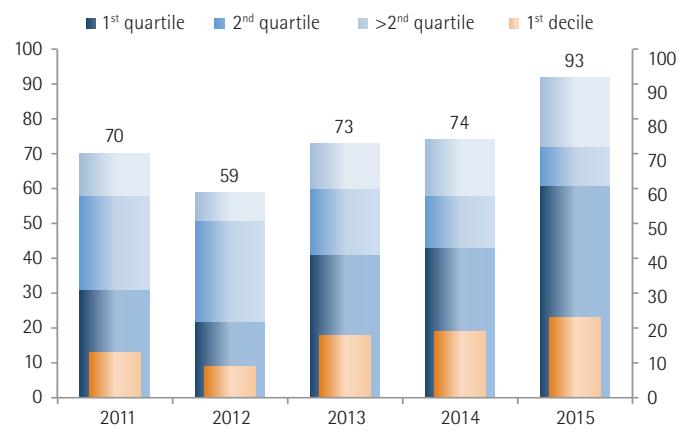
AREA 2: CARDIOVASCULAR DISEASE

Scientific output of Area 2 in indexed journals with impact factor: total and mean impact factor



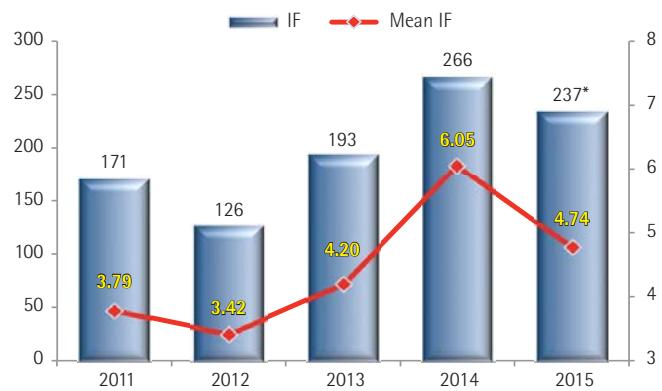
* Including letters: 709

Scientific output of Area 2 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



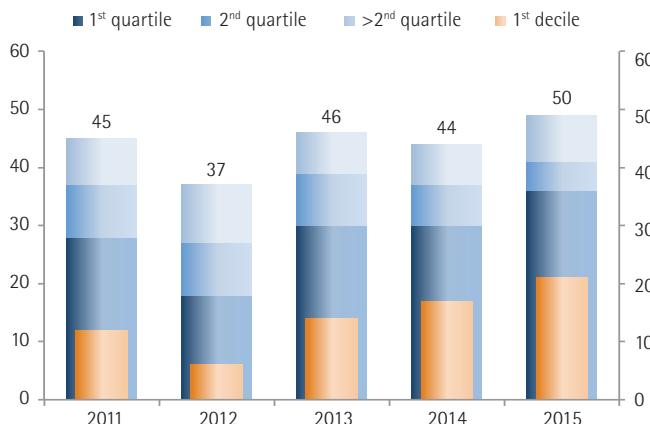
AREA 3: NEUROSCIENCE AND MENTAL HEALTH

Scientific output of Area 3 in indexed journals with impact factor: total and mean impact factor



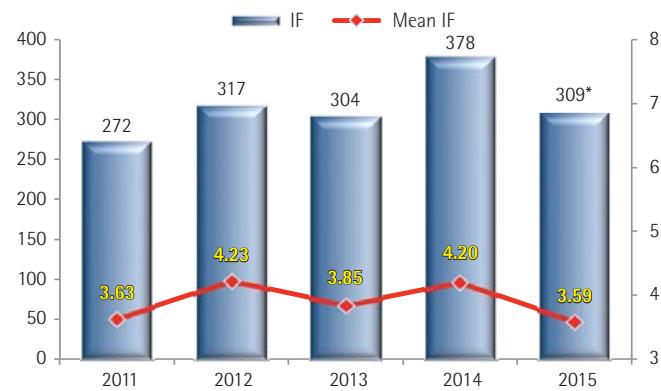
* Including letters: 258

Scientific output of Area 3 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



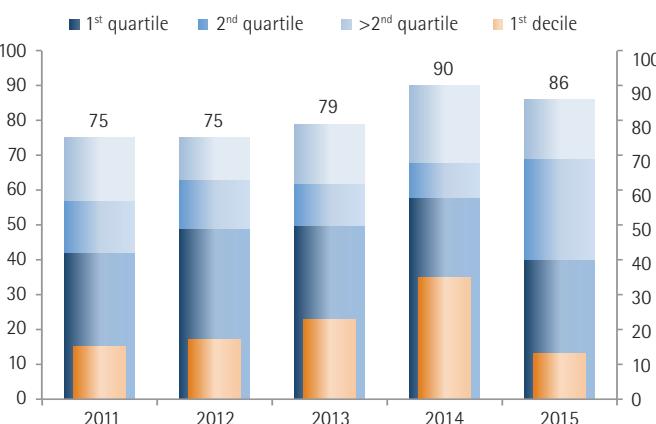
AREA 4: INFECTIOUS DISEASES AND AIDS

Scientific output of Area 4 in indexed journals with impact factor: total and mean impact factor



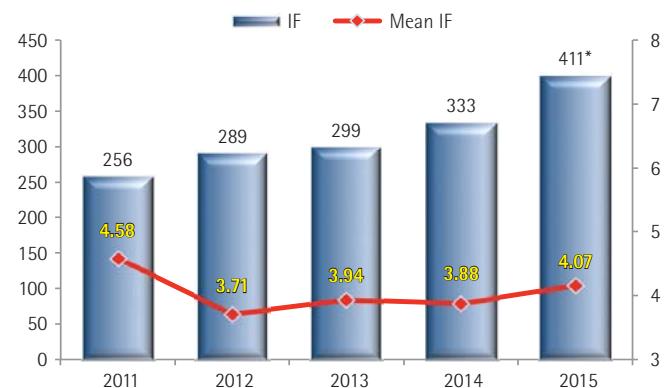
* Including letters: 331

Scientific output of Area 4 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



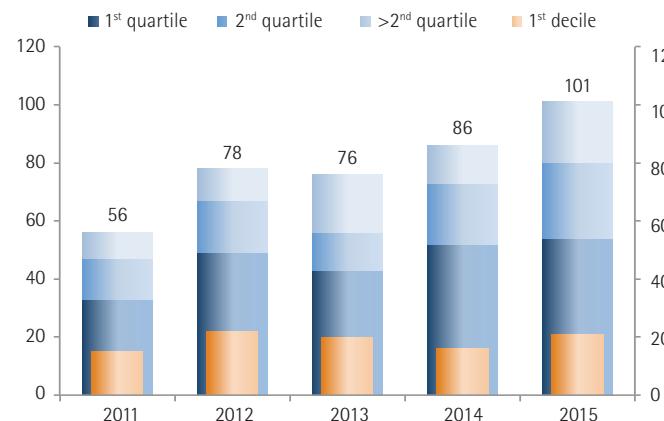
AREA 5: DISEASES OF THE IMMUNE SYSTEM

Scientific output of Area 5 in indexed journals with impact factor: total and mean impact factor



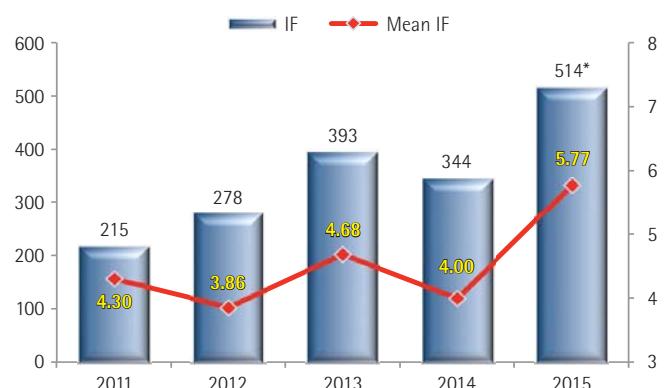
* Including letters: 482

Scientific output of Area 5 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



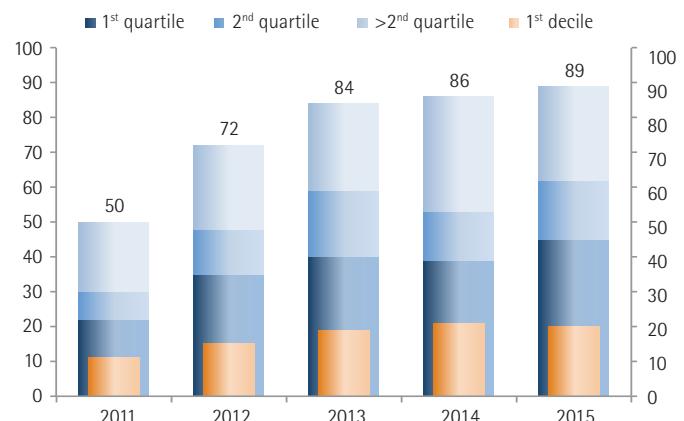
AREA 6: TRANSLATIONAL ONCOLOGY

Scientific output of Area 6 in indexed journals with impact factor: total and mean impact factor



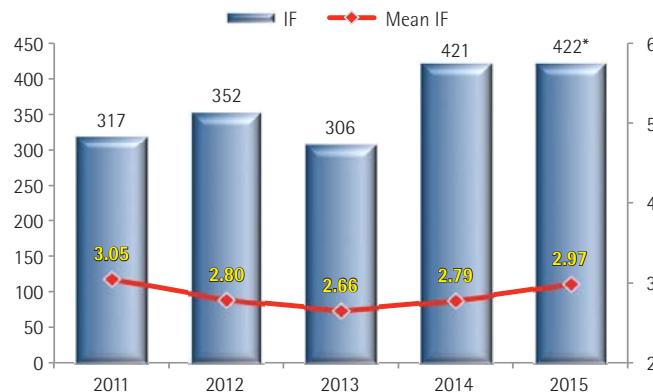
* Including letters: 536

Scientific output of Area 6 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



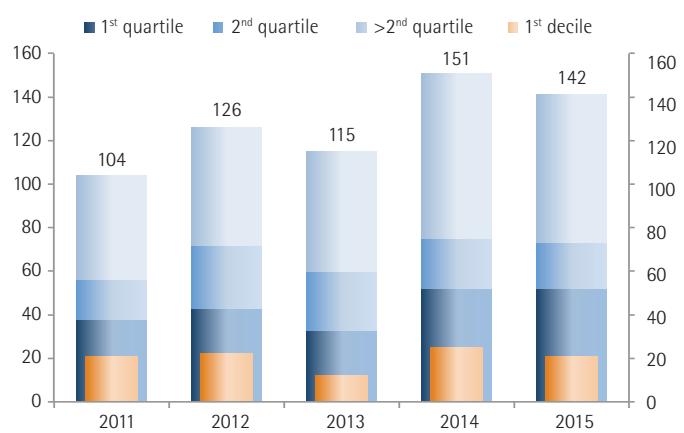
AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION

Scientific output of Area 7 in indexed journals with impact factor: total and mean impact factor



* Including letters: 443

Scientific output of Area 7 in indexed journals with impact factor: distribution of publications by decile and quartile (absolute values)



Organizational Structure of liSGM

GOVERNING COUNCIL

- **Chair:** Manuel Molina Muñoz, Vice-Councilor of Health Care.
- **First Deputy Chair:**
 - Francisco Tirado Fernández, Vice-Chancellor of Research, Universidad Complutense de Madrid (until 15/06/2015) and Ignacio Lizasoain Hernández, Vice-Chancellor of Scientific Policy and Research, Doctor of Universidad Complutense de Madrid (since 16/06/2015).
- **Second Deputy Chair:** Juan Romo Urroz, Vice-Chancellor of Teaching Staff and Departments, Universidad Carlos III de Madrid.
- **Members-at-large:**
 - Ricardo Herranz Quintana, Manager of Hospital General Universitario Gregorio Marañón (until 24/11/2015) and María Codesido López (since 25/11/2015).
 - Manuel Sánchez Luna, President of the Clinical Research Ethics Committee (until 22/12/2014) and Felipe Atienza Fernández (since 26/01/2015).
 - Rafael Bañares Cañizares, Science Director of liSGM (until 15/12/2015) and Ismael Buño Borde (since 15/12/2015).
- **Members:**
 - Paloma Martín Martín, General Management of Research, Training, and Infrastructure (until 08/07/2015). Emilia Sánchez Chamorro (since 15/12/2015), General Management of Planning, Research, and Training.
 - Emilio Bouza Santiago, Trustee of FIBHGM.
 - Rafael Bañares Cañizares, Trustee of FIBHGM (member since 15/12/2015).
 - Manuel Desco Menéndez, Trustee of FIBHGM.
 - Celso Arango López. Trustee of FIBHGM.
 - Carlos Pérez de Oteyza, Trustee of FIBHGM, Vice-Deacon of Universidad Complutense de Madrid.
 - María Sanjurjo Sáez, Trustee of FIBHGM.
 - Francisco Fernández-Avilés Díaz, Trustee of FIBHGM.
 - Miguel Ángel Pozo García. Universidad Complutense de Madrid.
 - Carlos Balaguer Bernaldo de Quirós. Trustee of FIBHGM. Universidad Carlos III de Madrid (until 06/05/2015); Francisco Javier Prieto Fernández (since 06/05/2015).
- **Secretary:** Thierry Bardinet. Director of FIBHGM.

EXECUTIVE COMMITTEE

- Ricardo Herranz Quintana. Manager of Hospital General Universitario Gregorio Marañón (until 24/11/2015) María Codesido López, Manager of Hospital General Universitario Gregorio Marañón (since 25/11/2015).
- Celso Arango López, Trustee of FIBHGM.
- Emilio Bouza Santiago, Trustee of FIBHGM.
- Carlos Pérez de Oteyza, Trustee of FIBHGM, Vice-Deacon of Universidad Complutense de Madrid.
- Miguel Ángel Pozo García, Trustee of FIBHGM, Universidad Complutense de Madrid.
- Rafael Bañares Cañizares, Science Director, liSGM (until 15/12/2015), remains as member.
- Ismael Buño Borde, Science Director, liSGM (since 15/12/2015).
- Francisco Fernández-Avilés Díaz, Trustee of FIBHGM.
- Carlos Balaguer Bernaldo de Quirós, Trustee of FIBHGM. Universidad Carlos III de Madrid (until 06/05/2015); Francisco Javier Prieto Fernández (since 06/05/2015).

EXTERNAL SCIENTIFIC COMMITTEE

The external scientific committee is composed of at least 5 highly qualified professionals with recognized experience in the field of research. Their main functions are to issue decisions at the request of the governing bodies, evaluate new applications, and provide scientific advice to the liSGM. During 2015, the External Scientific Committee met once.

- Joan Rodés Teixidor, Institut d'Investigacions Biomèdiques August Pi i Sunyer, Barcelona.
- Óscar Marín Parra, Universidad Miguel Hernández-Consejo Superior de Investigaciones Científicas, Alicante.
- Rafael Enríquez de Salamanca, Universidad Complutense de Madrid.
- David García Dorado, Instituto de Investigación Vall d'Hebrón, Barcelona.
- Diego Gracia Guillén, Universidad Complutense de Madrid.
- Ángel Carracedo Álvarez, Universidad de Santiago de Compostela.
- Luis Valenciano Clavel, Fundación Salud 2000 Madrid.

ORGANIZATIONAL STRUCTURE OF IiSGM

RESEARCH COMMITTEE

- **Chair:** Rafael Bañares Cañizares (until 15/12/2015) and Ismael Buño (since 15/12/2015).
- **Vice-Chair:** Javier de Miguel Díez.
- **Secretary:** Luis Alberto Menchén Viso.
- **Members:** Manuel Desco Menéndez, Francisco Fernández-Avilés Díaz, Celso Arango López, Emilio Bouza Santiago, Eduardo Fernández-Cruz, Miguel Martín Jiménez, Felipe Atienza Fernández, Jesús Ruiz Cabello, Antonio Artés Rodríguez, Dario García de Viedma del Álamo, Pascual Balsalobre López, Fernando Asensio Rubio, Ismael Buño Borde, Ana M^a García Pozo, Juana Gil Herrera, Constancio Medrano, Laura Moreno Márquez, Enrique Lledó García, José Luis Muñoz Blanco, Juan Antonio León Luis, María Luisa Baeza Ochoa de Ocariz, Luis Álvarez-Sala Walther, María del Carmen de la Cruz Arguedas and Carlos Pérez de Oteyza.

CLINICAL RESEARCH ETHICS COMMITTEE

- **Chair:** Felipe Atienza Fernández.
- **Vice-Chair:** Andrés Jesús Muñoz Martín.
- **Secretary:** Fernando Díaz Otero.
- **Members:** Carlos Manuel González Fernández, M^a Luisa Baeza Ochoa de Ocariz, M^a Ángeles Muñoz Fernández, Rafael Carrión Galindo, Vicente de las Peñas Gil, Eduardo Fernández-Cruz Pérez, José Miguel Rivas Bueno, Leonor María Laredo Velasco, Carmen Mateo Ruiz, Ignacio Marín Jiménez, Ana Mur Mur, María del Carmen de la Cruz Arguedas, Juan Antonio Andueza Lillo, M^a Begoña Quintana Villamandos, Dorotea Blanco Bravo and M^a del Carmen Herás Escobar.
- **Technical Secretaries:** Santos Puerta Cruz, María José Martín Muñoz.

ANIMAL EXPERIMENTATION ETHICS COMMITTEE

- **Chair:** Fernando Asensio Rubio.
- **Secretary:** Javier Vaquero Martín.
- **Members:** Carlos Simón Adiego, Laura Moreno Márquez, Alberto Tejedor Jorge, Begoña Quintana Villamandos, Javier Vaquero Martín, M^a Luisa Baeza Ocariz, Antonio Martínez Escandell, Jesús López Herce Cid, Javier Urbano Villaescusa, Batiste Andreu Martínez Climent, M^a Victoria Gómez Gaviro, Lorena Cussó Mula and Ana M^a Hernández Gamo.

INNOVATION COMMITTEE

- **Chair:** Rafael Bañares Cañizares. *Director (until 15/12/2015); Ismael Buño Borde, from that date onward.*
- **Vice-Chair:** Manuel Desco Menéndez.
- **Members:** Thierry Bardinet, Francisco Fernández-Avilés Díaz, Emilio Bouza Santiago, Pascual Balsalobre López and Paloma Domingo García.
- **Secretary:** Anna Riera Guerra.

TRAINING COMMITTEE

- **Training Manager:** Alberto Tejedor Jorge. *Lecturer, Universidad Complutense de Madrid.*
- **Training Committee:** Alberto Tejedor Jorge, Rafael Bañares Cañizares, Ismael Buño Borde, José María Bellón Cano, Carmen Olmedo Lucerón, Irene Lomba Iriarte, Constancio Medrano López, Thierry Bardinet, Rafael Correa Rocha and Fernando Asensio Rubio.

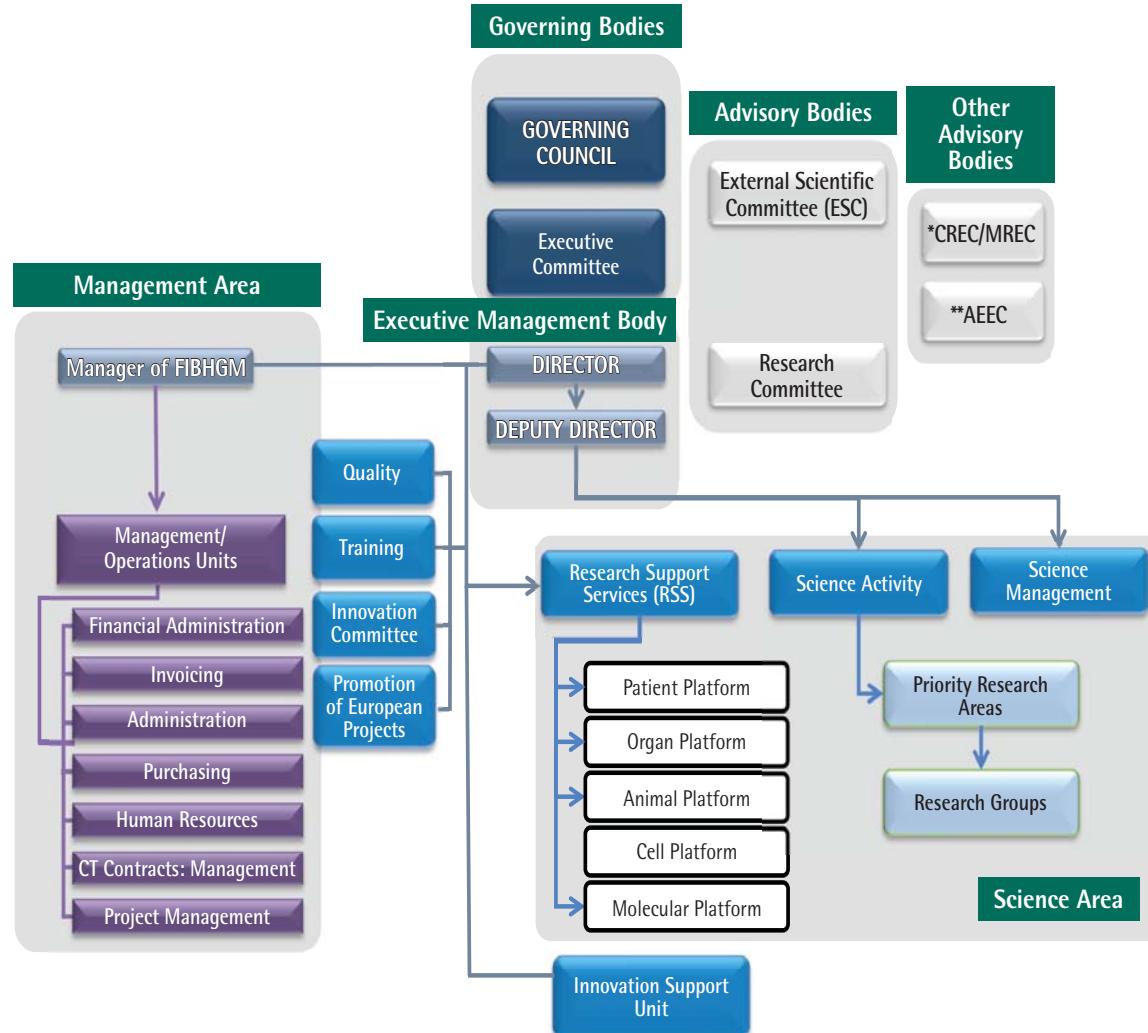
RESEARCH SUPPORT SERVICES

- **Research Support Services Manager:** Milagros González Rivera, *Sequencing Unit, HGUGM.*

HOSPITAL GREGORIO MARAÑÓN BIOMEDICAL RESEARCH FOUNDATION

- **Director:** Thierry Bardinet.
- **Scientific Management and Quality Assurance:** María del Carmen Olmedo Lucerón and Irene Lomba Iriarte.
- **Project Management:** Laura Moreno Márquez, Carlos Arias López, Luis Fernández Vera and Isabel Ballesteros López.
- **Clinical Trials:** María del Carmen de la Cruz Arguedas.
- **Human Resources:** Alberto Gómez Moreno.
- **Accounting:** Estefanía Lavilla Guevara and M^a Isabel Olmedo Andueza.
- **Invoicing:** Marta Martín-Arriscado Arroba.
- **Legal Affairs/Purchasing:** Miguel Ángel Conejo Martín.
- **Secretary:** Charo Calle Benito.
- **Administrative Support Unit:** María González Rodríguez.

ORGANIZATION CHART



CREC: Clinical Research Ethics Committee; MREC: Medication Research Ethics Committee; AEEC: Animal Experimentation Ethics Committee; CT: Clinical trials.

STRUCTURE OF THE AREAS AND RESEARCH GROUPS

AREA 1: Biomedical Engineering

Coordinator: *Manuel Desco Menéndez*

| Group | Group Director | Type of Group | Organization |
|--|-------------------------|-----------------------------|--------------|
| Advanced technological applications and human health | Manuel Desco Menéndez | Consolidated | HGUGM-UCIII |
| Signal processing | Antonio Artés Rodríguez | In process of consolidation | UCIII |
| Computer architecture, communications, and systems: ARCOS | Jesús Carretero Pérez | In process of consolidation | UCIII |
| Nonparametric statistical techniques and intensive computing | Juan Romo Urráz | In process of consolidation | UCIII |

AREA 2: Cardiovascular Diseases

Coordinator: *Francisco Fernández-Avilés Díaz*

| Group | Group Director | Type of Group | Organization |
|---|-----------------------------------|---------------------|--------------|
| Natural history of heart disease | Francisco Fernández-Avilés Diaz | Consolidated | HGUGM-UCM |
| Cardiovascular pathophysiology | Victoria Cachofeiro Ramos | Consolidated | UCM |
| Cardiac cellular electrophysiology | Eva Delpón Mosquera | Consolidated | UCM |
| Cardiology and heart transplantation in infants | Constancio Medrano López | Emerging | HGUGM |
| Blood lipids and cardiovascular risk | Luis Antonio Álvarez-Sala Walther | Emerging | HGUGM-UCM |
| Acute cerebral ischemia. Stroke | Antonio Gil Núñez | Associated clinical | HGUGM |

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UCIII: Universidad Carlos III.

AREA 3: Neuroscience and Mental Health

Coordinator: *Celso Arango López*

| Group | Group Director | Type of Group | Organization |
|--|------------------------------------|---------------|--------------|
| Neurobiological and psychological bases of mental disorders. Disorders of neurodevelopment | Celso Arango López | Consolidated | HGUGM-UCM |
| Diseases of the nervous system | Francisco Javier Grandas Pérez | Emerging | HGUGM |
| Biology of inflammation | Maria Concepción Guisasola Zulueta | Associated | HGUGM |

AREA 4: Infectious Diseases and AIDS

Coordinator: *Emilio Bouza Santiago*

| Group | Group Director | Type of Group | Organization |
|---|----------------------------------|---------------------|--------------|
| Infectious diseases | Emilio Bouza Santiago | Consolidated | HGUGM-UCM |
| Clinical and epidemiological aspects of HIV infection and associated conditions | Juan Berenguer Berenguer | Consolidated | HGUGM |
| Biological insult after heart surgery | Francisco Javier Hortal Iglesias | Associated clinical | HGUGM |

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UCIII: Universidad Carlos III.

AREA 5: Diseases of the Immune System**Coordinator:** Eduardo Fernández-Cruz Pérez

| Group | Group Director | Type of Group | Organization |
|--|--|-----------------------------|--------------|
| Pathophysiology and clinical research into chronic inflammatory and immunological diseases | Eduardo Fernández-Cruz Pérez | Consolidated | HGUGM |
| Molecular biology of HIV | M. Ángeles Muñoz Fernández | Consolidated | HGUGM |
| Systemic autoimmune diseases | Luis Carreño Pérez (until 05/11/2015) Indalecio Monteagudo (since 05/11/2015) | Consolidated | HGUGM |
| Immuno-oncology | Paloma Sánchez-Rubio Mateos | Consolidated | HGUGM |
| Pathogenesis of the immunoallergic response | José Manuel Zubeldia Ortuño | In process of consolidation | HGUGM |
| Immune regulation and homeostasis in diseases of the immune system | Rafael Correa Rocha | Emerging | HGUGM |
| Infections in pediatric patients | Maria Luisa Navarro Gómez | Consolidated | HGUGM |
| Allergic diseases in pediatric patients | Elena Alonso Lebrero | Associated clinical | HGUGM |

AREA 6: Translational Oncology**Coordinator:** Miguel Martín Jiménez

| Group | Group Director | Type of Group | Organization |
|--|---|---------------|--------------|
| Interdisciplinary oncology and biotechnology | Felipe Ángel Calvo Manuel | Consolidated | HGUGM-UCM |
| Translational medical oncology and personalized cancer therapy | Miguel Martín Jiménez | Consolidated | HGUGM-UCM |
| Genetic and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation | José Luis Díez Martín/ Ismael Buño Borde | Consolidated | HGUGM |

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UCM: Universidad Carlos III.

AREA 6: Translational Oncology (cont.)**Coordinator:** Miguel Martín Jiménez

| Group | Group Director | Type of Group | Organization |
|---|------------------------------|---------------------|--------------|
| Surgical oncology | Luis González Bayón | Emerging | HGUGM |
| Hematology-oncology in pediatric patients | Elena Cela de Julián | Associated clinical | HGUGM |
| Angiogenesis of brain tumors | Juan Carlos Martínez Montero | Associated clinical | HGUGM |

AREA 7: Systemic Diseases and Organ Transplantation**Coordinator:** Rafael Bañares Cañizares

| Group | Group Director | Type of Group | Organization |
|---|---------------------------------|-----------------------------|--------------|
| Vascular damage and inflammation in chronic kidney disease, dialysis, and kidney transplantation. Pathophysiology of the kidney | José Luño Fernández | Consolidated | HGUGM |
| Pathophysiology and natural history of liver and digestive diseases | Rafael Bañares Cañizares | Consolidated | HGUGM-UCM |
| Disease in the critically ill child | Jesús López-Herce Cid | Consolidated | HGUGM |
| Pathophysiology and clinical aspects of COPD | Luis Puente Maestu | In process of consolidation | HGUGM |
| Regenerative medicine in plastic surgery | Rosa Pérez Cano | Emerging | HGUGM |
| Experimental kidney transplantation | Enrique Lledó García | Emerging | HGUGM |
| Pediatric endocrinology | María Dolores Rodríguez Arnao | Associated clinical | HGUGM |
| Regeneration and biomaterials in skeletal muscle damage | Francisco Javier Vaquero Martín | Associated clinical | HGUGM-UCM |
| Iron metabolism disorders | Alejandro del Castillo Rueda | Associated clinical | HGUGM |
| Emergency medicine | Javier Muñoz González | Associated clinical | HGUGM |

UCM: Universidad Complutense de Madrid. HGUGM: Hospital General Universitario Gregorio Marañón. UCM: Universidad Carlos III.

(Continued on next page)

AREA 7: Systemic Diseases and Organ Transplantation (cont.)**Coordinator:** Rafael Bañares Cañizares

| Group | Group Director | Type of Group | Organization |
|--|---------------------------------|-----------------------------|--------------|
| Pathophysiology, outcome, and therapeutic strategies in chronic respiratory insufficiency and respiratory disorders of sleep | Pilar de Lucas Ramos | Associated clinical | HGUGM |
| Anesthesia in chest surgery | Ignacio Garutti Martínez | Emerging | HGUGM |
| Regenerative medicine and development of systems: cardiovascular and osteochondral | Mª Begoña Quintana Villamandos | Emerging | HGUGM |
| Peritransplant evaluation (liver) | José María Pérez Peña | Associated clinical | HGUGM |
| Perianesthetic evaluation | Carmen Fernández Riveira | Associated clinical | HGUGM |
| Anesthesia, toxins, and arrhythmias | Matilde Zaballos García | Associated clinical | HGUGM |
| Biopathology of aging | José Antonio Serra Rexach | Consolidated | HGUGM |
| Pathophysiology of the neonate and developing child | Manuel Sánchez Luna | In process of consolidation | HGUGM |
| Hereditary diseases and pediatric endocrinology | Begoña Ezquieta Zubicaray | Emerging | HGUGM |
| Artificial circulation laboratory | Juan Francisco del Cañizo López | Emerging | HGUGM-UCM |
| Evaluation of health services and clinical epidemiology | Rosa Plá Mestre | Emerging | HGUGM |
| Hospital pharmacy and pharmacogenomics | Maria Sanjurjo Sáez | In process of consolidation | HGUGM |
| Clinical nutrition | Pilar García Peris | Emerging | HGUGM |
| Vascular pathophysiology and pharmacology | Francisco Pérez Vizcaíno | Consolidated | UCM |

NURSING RESEARCH GROUP**Coordinator:** Ana García Pozo

| Group | Group Director | Organization |
|---------------------|-----------------|--------------|
| Research in nursing | Ana García Pozo | HGUGM |

HGUGM: Hospital General Universitario Gregorio Marañón.

Publicly funded research staff contracts

FIXED-CONTRACT RESEARCHERS AND TECHNICAL STAFF

| | Area | Group |
|---------------------------|---|--------------------------|
| José Luis Jiménez Fuentes | Infectious diseases and AIDS | Molecular biology of HIV |
| Mª Jesús Serramía Lobera | Infectious diseases and AIDS | Molecular biology of HIV |
| José María Bellón Cano | Research Support Service (methodological support) | IISGM |
| Rafael Samaniego García | Research Support Service (confocal microscopy) | IISGM |
| Amaya Rocío Puig Kröger | Diseases of the immune system | Immuno-oncology |
| Marjorie Pion | Diseases of the immune system | Molecular biology of HIV |

INSTITUTO DE SALUD CARLOS III Miguel Servet Contracts

| | Area | Group |
|-----------------------------|---|--|
| Rafael Correa Rocha | Diseases of the immune system | Immunology of HIV infection in the pediatric patient |
| Jesús Vicente Guinea Ortega | Infectious diseases and AIDS | Infectious diseases |
| Luis Andrés López Fernández | Systemic diseases and organ transplantation | Hospital pharmacy and pharmacogenomics |
| Miguel Reloso Cereceda | Diseases of the immune system | Molecular biology of HIV |
| María Luisa Soto Montenegro | Biomedical engineering | Advanced technological applications and human health |
| María Guembe Ramírez | Infectious diseases and AIDS | Infectious diseases |
| Belen Rodríguez Sánchez | Infectious diseases and AIDS | Infectious diseases |

Sara Borrell Contracts

| | Area | Group |
|------------------------------|-------------------------------|--------------------------|
| Manuel González-Serna Martín | Diseases of the immune system | Molecular biology of HIV |

Río Hortega Contracts

| | Area | Group |
|---------------------------|---|---|
| Begoña Santiago García | Diseases of the immune system | Molecular biology of HIV |
| Jorge López González | Diseases of the immune system | Diseases of the critically ill child |
| Elena Serrano Drozdowskyj | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Alberto Rodríguez Quiroga | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Luis Ibáñez Samaniego | Systemic diseases and organ transplantation | Pathophysiology and natural history of diseases of the liver and digestive system |
| Rafael González Cortés | Diseases of the immune system | Diseases of the critically ill child |

Predoctoral Contracts

| | Area | Group |
|------------------------------|--------------------------------|---|
| Laura Judith Marcos Zambrano | Infectious diseases and AIDS | Infectious diseases |
| Elisa Rodríguez Toscano | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |

Research management contracts

| | Area | Group |
|---------------------|---|--------------|
| Irene Lomba Iriarte | Instituto de Investigación Sanitaria Gregorio Marañón | |

I-PFIS Contracts

| | Area | Group |
|----------------|------------------------|--|
| Ana Ortega Gil | Biomedical engineering | Advanced technological applications and human health |

**MINISTRY OF ECONOMY AND COMPETITIVENESS
Ramón y Cajal Contracts**

| | Area | Group |
|-----------------------|---|---|
| Joost Janssen | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Javier Vaquero Martín | Systemic diseases and organ transplantation | Pathophysiology and natural history of diseases of the liver and digestive system |

Support Contracts

| | Area | Group |
|----------------------------|---|--|
| María Isabel García García | Systemic diseases and organ transplantation | Hospital pharmacy and pharmacogenomics |



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Public funding for the national program "Promotion of Talent and its Application", and "Strategic Action in Health Care" is complemented by funding from the European Social Fund (ESF).

Research support services

LiSGM has organized research support services into various technology platforms according to the object of research. Thus, LiSGM aims to promote the human and technological interrelationships necessary when investigating the object of biomedical research from different technological perspectives.

Five platforms have been developed, as follows:

1. Patient platform
2. Organ platform
3. Animal model platform
4. Cell platform
5. Molecular platform

| RESEARCH SUPPORT UNITS | | | | |
|------------------------|---|---------------------------------|-----------------------------|-----------------------------------|
| Patient platform |  | Methodology and biostatistics | UCAICEC/SCREN | |
| Organ platform |  | Cell production unit | Artificial organ laboratory | Biological sample storage–Biobank |
| Animal model platform |  | Experimental operating room | Animal facility | Small animal imaging |
| Cell platform |  | Flow cytometry and cell sorting | Cell culture | Confocal microscopy |
| Molecular platform |  | Proteomics | Sequencing and genotyping | |



PATIENT PLATFORM

1. UCAICEC (UNIDAD CENTRAL DE APOYO A LA INVESTIGACIÓN CLÍNICA Y ENSAYOS CLÍNICOS [Clinical Research Central Support Unit])

The mission of the UCAICEC is to promote and assist in clinical research and clinical trials by providing comprehensive support to researchers. The service was granted ISO 9001:2008 certification in 2012 for assessment on the design, planning, performance, and supervision of clinical trials and observational studies.

The UCAICEC also manages the Plataforma de Unidades de Investigación Clínica y Ensayos Clínicos (SCREN [*Platform for Clinical Research and Clinical Trial Units*]). SCREN is funded by the Instituto de Salud Carlos III (ISCIII), and more than 20 hospitals from throughout Spain are represented. This platform was set up as a stable structure for network-based collaborative research in specific knowledge areas. It is a cross-sectional platform that aims to carry out collaborative clinical research studies in areas of general interest.

Services provided

Assessment on the preparation and performance of research projects

- Support in the management of documentation for evaluation by the Clinical Research Ethics Committee and regulatory bodies (Spanish Medication Agency [AEMPS] and regional government bodies).
- Advice, management, and support in the preparation and follow-up of administrative documentation necessary for projects.
- Coordination and follow-up of approvals and implementation of the study (logistics and operations).
- Advice on management of medication and on performance of the trial (selection of CRO).
- Advice on the management of supplier contracts.

Monitoring (only clinical trials managed by SCREN)

Contact

María del Carmen de la Cruz Arguedas, Head of Unit

E-mail: ucaicec@fibhgm.org

Tel.: (+34) 91 426 92 32

2. METHODOLOGY AND BIOSTATISTICS

Methodology and Biostatistics is a research support service that provides statistical and methodological advice for all those researchers who require help in any aspect of their research project, eg, type and design of the study, sample size, database design, statistical techniques. It provides the assistance necessary for researchers to reach their objectives.

The unit also carries out statistical analyses and manages the databases of those projects in which analysis proves problematic.

Services provided

Methodological consultancy

- Most appropriate study type and design.
- Calculation of sample size.
- Statistical techniques best suited to each type of study.
- Methodological design for research projects.
- Interpretation of statistical results.

Support and follow-up of ongoing projects

- Scientific articles.
- Communications to scientific meetings, talks.
- Doctoral theses and research proficiency projects.

Application and statistical analysis of databases

- Design and creation of databases: Excel, Access, SPSS.
- Statistical analysis and application of databases.

Contact

José María Bellón Cano, Head of Unit

E-mail: josemaria.bellon@salud.madrid.org

Tel.: (+34) 91 586 64 54



ORGAN PLATFORM

1. CELL PRODUCTION UNIT

The Cell Production Unit provides support for researchers who wish to perform preclinical and clinical studies in the field of cell therapy and regenerative medicine. The Unit comprises the following:

- Cell Therapy Laboratory: A laboratory whose environment is controlled according to the Good Clinical Practice and Good Laboratory Practice for clinical production of cells without expansion that does not necessarily have to be based on Good Manufacturing Practice. The laboratory is also used for in vitro preclinical trials.
- Cell Production Unit: Infrastructure that provides support to clinical research in regenerative medicine and cell therapy. The Unit was certified by the Spanish Medications Agency (AEMPS) in February 2009 for the production of 5 cell types: bone marrow mononuclear cells, bone marrow mesenchymal cells, stromal vascular fraction, fatty tissue mesenchymal cells, and periodontal ligament cells.

Services provided

- Preclinical studies in cell therapy and regenerative medicine.
- Production of various cell types used in clinical trials under an infrastructure certified according to Good Manufacturing Practice, and investigational products approved by the AEMPS for the production of various types of cell:
 - Mononuclear bone marrow cells (IP Nos. 05-042 and 13-037).
 - Stromal vascular fraction (fresh fat cells) (IP No. 11-027).
 - Autologous bone marrow mesenchymal cells (IP No. 09-065).
 - Allogenic bone marrow mesenchymal cells (IP No.12-088).
 - Fatty tissue mesenchymal cells (IP No. 09-019 and 11-164).
 - Periodontal ligament cells (IP No. 13-143).
- Preparation of Investigational Medicinal Product Dossiers, standardized operating procedures. Validation of and reporting on cell products for which no IP number is available for approval by the AEMPS.
- Histology, immunohistochemistry, and immunofluorescence of organs and tissues.
- All work is carried out within the framework of Good Laboratory Practice, Good Clinical Practice, and AEMPS certification, ie, a rigid quality assurance system ensures robust results that can be easily transferred to clinical practice.

Contact

M^a Eugenia Fernández Santos, Head of Unit
 E-mail: mariuge@fibhgm.org
 Tel.: (+34) 91 5290521

2. BIOARTIFICIAL MATRIX AND ORGAN LABORATORY

The function of the Bioartificial Matrix and Organ Laboratory is to achieve decellularized matrices and organs from animal and human organs, with the aim of subsequently recellularizing them with different cell types, thus producing viable matrices that can be used as constructs for replacing damaged organs and that are not rejected when transplanted. Management of the laboratory is based on a Good Laboratory Practice quality system that makes it possible to develop projects in a reproducible manner, with contrasted traceability, so that findings can quickly be transferred to clinical practice. The laboratory forms part of the Bioartificial Organ and Regenerative Medicine Platform and is included in the framework of the SABIO project, which started in 2010 under an agreement with the Spanish National Transplant Organization (ONT), the University of Minnesota, and Hospital General Universitario Gregorio Marañón (HGUM).

Services provided

- Decellularization of organs.
- Study of ventricular mechanics in the intact heart and decellularized matrices.
- Histology of the samples obtained from the different matrices.
- Tissue and cell electrophysiology program.
- Recellularization of decellularized matrices by co-culture.
- Recellularization program using bioreactors (Harvard Apparatus).
- Human cell culture:
 - Vascular fat fraction or "fresh cells" from liposuction.
 - Bone marrow mononuclear cells.
 - Bone marrow mesenchymal cells.
 - Fatty tissue mesenchymal cells.
 - Obtaining iPS cells.
 - Differentiation of iPS cells into cardiomyocytes.
- Culture of cells from animal tissue, eg, mesenchymal cells, iPS cells, cardiomyocytes, and resident cardiac cells.

- Maintenance of cell cultures:
 - a) Human keratinocytes.
 - b) Keratinocyte-derived iPS cells.
 - c) Mesenchymal cells derived from keratinocyte-derived iPS cells.
- Academic and training platform.

Contact

Francisco Fernández-Avilés, Scientific Manager
 E-mail: faviles@secardiologia.es
 Tel.: 91 4265882

Mª Eugenia Fernández Santos, Technical Manager
 E-mail: mariuge@fihgm.org
 Tel.: 91 5290521; Mobile: 657 65 0527

3. BIOLOGICAL SAMPLE STORAGE

3.1. Biobank

The liSGM Biobank forms part of the National Biobank Registry funded by the Instituto de Salud Carlos III (ISCIII). In addition, the liSGM runs the HIV Biobank of the RIS (AIDS Research Network).

The mission of the Biobank is to add to advances in scientific knowledge of various diseases and to provide patient biological samples for purposes of research. The samples are received, registered, processed, coded, and cryopreserved at the Biobank of Hospital Gregorio Marañón. Samples can subsequently be provided for research projects that have been approved by an ethics committee and scientific committee.

Services provided

The objectives of the Biobank are met thanks to support from organisms and persons who collaborate with it, namely,

- Cohorts with well-defined characteristics comprising patients with various diseases. The coordinators of the cohorts collect and store clinical information associated with the samples. The Biobank currently holds samples from 6 cohorts: respiratory diseases, endocrinology, neonatology, oncology, rare diseases, and infectious diseases.

- The various services of Hospital General Universitario Gregorio Marañón, which deposit samples in the Biobank, after signature of an agreement on the conditions of the deposit. The services that currently deposit material are pediatrics, neonatology, oncology, and anesthesia.
- Biobank staff in charge of management, reception, processing, cryopreservation, and lending of samples.
- Other collaborating bodies include the Ethics Committee and Scientific Committee of the Biobank, which participate in decision making and evaluate the projects for which biological material is requested from the Biobank.
- Lastly, researchers who are loaned samples for projects of excellence after previous approval by a scientific committee and an ethics committee.

All the processes carried out in the Biobank are subject to a strict quality control system based on standard UNE-EN ISO 9001, for which the Biobank is certified and which guarantees the quality of the samples and the fulfillment of ethical and legal rules.

Contact

María Ángeles Muñoz-Fernández
 Scientific Manager and Head of Implementation of New Techniques
 E-mail: mmunoz.hgugm@salud.madrid.org
 mmunoz.hgugm@gmail.com
 Tel.: 91 529 05 09

Isabel Mª García Merino
 Coordinator, Head of Quality Management, Records Manager
 E-mail: BioBancoVIH.hgugm@gmail.com
 Tel.: 91 529 05 09

3.2. Tumor bank

The tumor bank forms part of the National Tumor Bank Network, a virtual and cooperative network promoted and coordinated by the Cell Pathology Program of the National Cancer Research Center. The tumor bank is a key element in translational research owing to the growing demand for appropriately treated tumor samples for the performance of molecular analyses, thus minimizing the bias typical of multicenter studies.



ANIMAL MODEL PLATFORM

1. ANIMAL FACILITY

The priority objective of the animal facility is to provide investigators with the animals that are best suited to their research and to maintain the appropriate environmental and clinical conditions for research to be carried out while ensuring animal health and well-being.

This service is aimed at all investigators from the IISGM and from other centers. All users must have appropriate certification for the handling of experimental animals (Royal Decree 53/2013 and Order ECC/566/2015).

Services provided

- Breeding, housing, and supply of different races and strains of rats, mice, and pigs under different housing conditions.
- Various options are available for experimental procedures in the animal facility with(out) participation of in-house personnel.
- Ancillary services such as administration of treatment, performance of procedures, and animal transport.
- Other experimental techniques can be requested (embryo transfer, freezing/thawing of embryos).

The Animal Facility is housed in a 170-m² area divided into communal areas and animal housing areas.

The facility comprises 2 clearly differentiated areas: one for work with animals under standard conditions and another barrier area for work with animals under specific-pathogen-free conditions. In the first area, animals can be housed in quarantine. The area is used for animals in transit or animals that, given the particular characteristics of a study, must leave the barrier area.

This area also has a special containment room for biological risk 2 animals, as well as rooms to house pigs and for postoperative care. Rodents are bred, housed, and undergo experimental procedures in the barrier area.

Hospital General Universitario Gregorio Marañón (HGUGM) is on the Registry of Facilities for the Breeding and Suppliers and Users of Animals Used for Experimentation and Other Scientific Purposes (Registro de Establecimientos de Cría, Suministradores y Usuarios de Animales para la Experimentación u otros fines científicos) of the Autonomous Community of Madrid as a User Center (code: ES280790000087).

Contact

Fernando Asensio Rubio, Head of the Animal Facility
E-mail: fernando.asensio@iisgm.com

Ángelica Horrillo Ledesma
E-mail: angelica.horrillo@iisgm.com

Francisco Sánchez Cobos, Animal Experimentation Technician
E-mail: francisco.sanchez@iisgm.com

Experimental Medicine and Surgery Unit (UMCE), Lower Floor
Hospital General Universitario Gregorio Marañón
Tel.: 91 586 6452

2. EXPERIMENTAL OPERATING ROOM

The operating room has the necessary instruments and material for standard surgical procedures in animal experiments.

The main operating room (A) has 2 tables that are custom-designed for animals. One table is radiotransparent to enable x-ray techniques to be performed. A third table can be installed when necessary.

Equipment is also available for more specific procedures such as laparoscopic surgery and extracorporeal circulation. There are also 3 rooms equipped for microsurgery in small-animal procedures. Two are within the clean area of the animal facility (B and C) and 1 is outside the area (outer room D). The rooms are used for microsurgery training courses and for experiments with small animals.

Services provided

The basic unit for providing services in the Surgical Area is the so-called Surgical Session, which implies the use of 1 operating table or microsurgery station for at least 1 morning or 1 afternoon. In addition, animals, support staff, and other equipment may be necessary.

Research

- Procedures associated with a funded research project.
- Procedures associated with a research project authorized by IISGM but which is pending funding.
- Procedures associated with research projects from bodies outside the hospital.

Training

- Practical sessions for undergraduate students from Universidad Complutense.
- Practical sessions for undergraduate students from Universidad Carlos III.
- Practical sessions enabling hospital staff to perfect surgical techniques.
- Practical sessions enabling staff from other centers to perfect surgical techniques.
- Training courses organized by Hospital services.
- Training courses organized by other bodies.

Communications

- Demonstrations or presentations of equipment or procedures organized by companies.

Contact

Juan F. Del Cañizo López, Head of Surgical Area
 E-mail: canizo@mce.hggm.es
 Tel.: (+34) 91 4265015 / 91 5868103

3. EXPERIMENTAL SMALL-ANIMAL IMAGING TECHNOLOGY

The Medical Imaging Laboratory is an instrumental platform for molecular imaging of small animals. The molecular imaging equipment available for small animal experiments is one of the most complete in Spain. The wide range of techniques available includes CT, PET, CT-PET, magnetic resonance imaging, optical imaging, and fluorescence molecular tomography (FMT).

Services provided

The unit has the capacity for the complete range of magnetic resonance imaging procedures: conventional high-resolution anatomic imaging, spectroscopy (1-H, 31-P, 13-C), angiography (MRA), tissue perfusion and diffusion (DWI, DTI), magnetic transfer imaging, functional MRI (fMRI), dynamic heart studies, and cell tracking.

The magnetic resonance area has the necessary equipment for animal handling and control (inhaled anesthesia, temperature control, monitoring instruments [heart, respiratory, and temperature]), remote perfusion pumps, and systems for sensory stimulation by magnetic field.

The area also has the necessary software for combining magnetic resonance imaging with the other imaging modalities available in the laboratory, which is particularly interesting in the case of PET and optical imaging.

The Medical Imaging Laboratory also offers assessment on the optimal technique for a specific problem and data postprocessing (including quantification, coregistration of different modalities, and statistical parametric mapping).

Contact

Manuel Desco Menéndez, Head of Unit
 E-mail: desco@mce.hggm.es
 Tel.: +34 91 5866678



CELL PLATFORM

1. CELL CULTURE

Cell culture is a basic tool in biomedical research, since it enables cells from human tissue (healthy and diseased), experimental animals (eg, mice, rats, and pigs), and cell lines in culture (immortalized cells and tumor cell lines) to be maintained *in vitro*. The objective is to conserve as much as possible the genetic, physiological, and biochemical properties of the cells.

The Cell Culture Unit is a research support service that provides researchers with the appropriate facilities and services necessary to ensure biosafety level 2 conditions and to guarantee the quality of the results obtained. Similarly, the Cell Culture Unit offers the possibility of cryopreserving biological samples (level 2 or lower), since it has a cryogenics facility consisting of a liquid nitrogen tank with the capacity for 4800 × 2-mL vials and a 50-L bottle of liquid nitrogen.

Services provided

- Management of the use of the platform's facilities. Updating and maintenance of infrastructure to ensure the best possible use thereof.
- Regular monitoring of facilities and equipment both for maintenance and to ensure the supply of generic fungible materials and the most commonly used reagents.
- Preparation and adaptation of working protocols and cleaning/disinfection programs in the cell culture room.

- Basic cell culture procedures, maintenance of cell cultures, *Mycoplasma* test.
- Thawing of cells.
- Technical advice and supervision of users who need cell cultures for the development of their research projects.

Contact

Maribel Clemente Mayoral, Head of Unit
 E-mail: maribel.clemente@iisgm.com
 Tel.: (+34) 91 426 92 06

2. FLOW CYTOMETRY AND CELL SORTER

This service provides support to research projects aimed at knowledge of the cellular mechanisms underlying human diseases by studying various markers. It can be applied in the discovery, identification, and monitoring of cell markers, thus facilitating separation of the cell populations identified.

The service is available to all IISGM research groups, as well as to research centers, companies, and other institutions that request it. Furthermore, tailored assessment is provided for sample treatment depending on the application of interest (flow cytometry [analyzer or separator]).

Flow cytometry makes it possible to simultaneously discriminate between up to 10 different parameters in a cell suspension thanks to the optical characteristics of the fluorescent markers used. Flow cytometry provides detailed information on the structural and functional characteristics of the cells or particles under study.

The cell sorter can separate up to 6 cell populations, based on the characteristics analyzed using flow cytometry. The most frequent applications are cell counting, immunophenotyping, cytokine studies, cell viability analysis, and other intracellular characteristics that can be monitored using fluorescent labels. It is important to highlight that this technique performs its measurements cell by cell, thus going beyond descriptive measures of cell populations.

The identification of cellular markers can be applied in research on various diseases, as well as their diagnosis, follow-up, and treatment; therefore, flow cytometry and cell sorting play a key role in translational research.

Services provided

Flow cytometry

- Assessment on and optimization of study protocols and design of experiments.

- Analysis of cell viability using labels: propidium iodide, annexin V, and 7-AAD.
- Analysis of the cell cycle using propidium iodide.
- Analysis of the efficiency of transfection.
- Phenotyping: various intracellular or surface lymphocyte markers.
- Quantification of soluble cytokines in plasma, serum, or culture supernatant using a multiplex assay (up to 11 cytokines in 25 µL of sample).
- Analysis of intracellular cytokines.
- Analysis of intracellular calcium movement by marking with Fluo-4.
- Analysis of the activation of apoptosis via the caspase-3 pathway.

Investigator support

- Training on demand and researcher needs analysis.
- Personalized assessment on experimental approaches, fluorochromes, and labels.
- Standardized operating procedures for enhanced sample processing.
- Analysis based on various software packages.

Cell separation by flow cytometry

- Cloning.
- Separation of subpopulations.
- Separation of live cells for culture.
- Separation of fixed cells for subsequent genetic analysis.

Researcher support

- Training on demand and study of researchers' needs.
- Personalized assessment on experimental approaches, fluorochromes, available markers.
- Standardized procedures for optimal sample processing.
- Analysis using various software packages.

Contact

Laura Díaz Muñoz, Head of Unit
 E-mail: lauradiaz@gmail.com
 Tel.: (+34) 91 426 92 58

3. CONFOCAL MICROSCOPY

The Confocal Microscopy Unit provides support to researchers who require confocal fluorescence microscopy or video microscopy.

The service has 2 confocal microscopes that make it possible to acquire fluorescence images of fixed or live samples. The confocal microscope takes non-invasive optical sections of a fluorescence-labeled sample, thus providing information on the expression and location of molecules both in 3D (xyz) and in 4D (3D+time).

The most commonly used applications are as follows:

- 3D reconstruction of subcellular structures, cells, or tissues.
- Marker colocalization studies.
- Quantification of parameters of interest (eg, intensity of fluorescence, area, morphology, and cell density).
- Phenotyping of cells from tissue sections *in vivo*.

The Confocal Microscopy Unit has its own lines of research focusing on the design and development of experimental approaches, image processing, and data analysis.

Services provided

- Spectral confocal microscopy of fixed samples: cells, tissues, and organs (depth <1 mm).
- Video microscopy (time-lapse) of live samples in a CO₂-and temperature-controlled environment using a digital camera or in confocal mode (including bleaching applications such as FRAP and FLIP).

Contact

Rafael Samaniego García
E-mail: confocal@hggm.es
Tel.: (+34) 91 586 87 39



MOLECULAR PLATFORM

1. SEQUENCING AND GENOTYPING

The sequencing and genotyping service provides support to research studies aimed at the diagnosis, prevention, and treatment of human disease. Its molecular basis lies in the genome and/or the products of its expression.

Services provided

Analysis of DNA by capillary electrophoresis

- Sanger sequencing of DNA from purified PCR products and DNA cloned in vectors. Resolution of up to 600 bp. Chemistry: Big Dye Terminator v3.1.
- Analysis of DNA fragments:
 - In-house PCR (fluorescent labeling; single reaction or multiplex); PCR (fluorescent labeling) using commercially available reagents (SGM, MSI, MLPA, PPW). Sizes up to 500 bp, 600 bp, 1200 bp. Fluorochromes: 6-FAM™, HEX™, VIC®, NED™, PET®, ROX™, LIZ®, 5-FAM™, JOE®, NED™, ROX™; FL™, JOE®, TMR™, and CXR.
 - Analysis of single-nucleotide polymorphisms (SNPs): ddNTP primer extension. Fluorochromes: dR6G, dTAMRA, dR110, and dROX.
 - Response time is 24-48 hours. Priorities can be set with the researcher.

Genome studies and high-throughput genotyping

- Analysis of researcher needs not previously envisaged: other types of DNA, DNA of specific complexity, sequence sizes greater than 600 bp, and fragment sizes greater than 1200. Similarly, development of genomic applications: de novo sequencing, resequencing, transcriptomics, epigenomics, metagenomics, and study of copy number variations.
- Massive parallel sequencing:
 - Study design.
 - Sample preparation.
 - Agreements on externalization of next-generation sequencing using commercially available approaches: Illumina, Roche, Life Technologies (SOLID, Ion Torrent).

- Large-scale genotyping:
 - Study design.
 - Sample preparation.
- Agreements on externalization for genotyping: SNP Arrays, Sequenom Mass Array.

Contact

Milagros González Rivera, Head of Unit
E-mail: milagros.gonzalez@iisgm.com

2. PROTEOMICS UNIT OF THE UCM – MADRID SCIENCE PARK

The mission of the Proteomics Unit is to promote scientific research and technological development in the field of proteomics by offering research groups, hospitals, and companies a range of proteomics services, advice on projects, and training courses and seminars.

Services provided

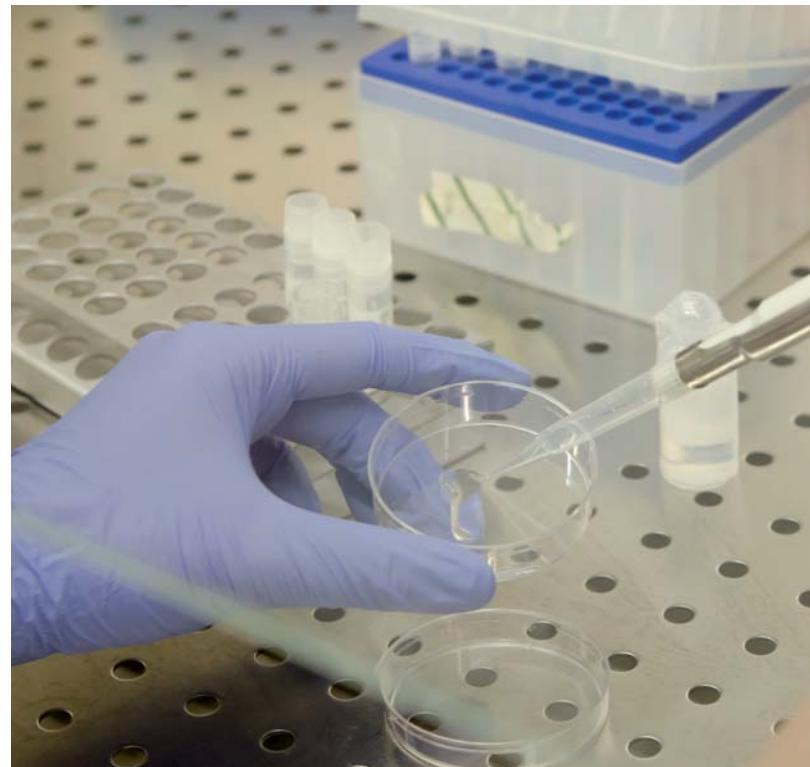
- Mass spectrometry.
- Determination of protein molecular mass.
- Peptide sequencing.
- Identification of proteins using peptide fingerprinting (MS).
- Identification of proteins using peptide fragmentation (MS/MS).
- Liquid chromatography-mass spectrometry.
- Analysis of highly complex samples.
- Subproteome analysis.
- Analysis of cell surface proteins.
- Differential expression studies.
- DIGE fluorochrome labeling.
- iTRAQ isotope labeling.
- SILAC metabolic labeling.
- Protein separation.
- SDS-PAGE.
- 2D-PAGE.
- Liquid phase isoelectric focusing.
- Blue native PAGE.
- Peptide separation.

- Reverse phase chromatography.
- Ion interchange chromatography.
- Liquid phase isoelectrofocusing.
- Post-translational modification studies. Phosphoproteomics.
- Cell isolation by laser microdissection.

Contact

Milagros González Rivera, Operations Manager
E-mail: milagros.gonzalez@iisgm.com

More information on these services can be obtained at the following link:
<http://www.iisgm.com/infraestructuras/servicios-de-apoyo-a-la-investigacion/>



Innovation, knowledge transfer, and translation to practice

1. INNOVATION SUPPORT UNIT

Innovation is a key element in the development of the research community, especially in the health care sector. liSGM's commitment to this activity is unwavering and has led to the creation of a structure aimed at providing researchers with a smooth path from the innovative idea to the development of the end product.

The objectives of the liSGM include encouraging and developing innovation within the organization by promoting the transfer of the scientific results obtained by its professionals to society, the health system, the scientific community, and the financial system.

The Innovation Support Unit came into being from a powerful research and technological design group in the area of biomedical instrumentation and engineering at Hospital General Universitario Gregorio Marañón, with a solid record in transferring technology to the industrial sector.

The Unit is structured in such a way that it provides channels for the ideas and proposals of professionals working at the hospital. Thus, the Unit can support and advise researchers during the different stages of the innovation and transfer process, with the aim of converting their proposals into products and services that add value to the health system and to society.

The objectives of the Innovation Support Unit include the following:

- Providing the necessary support in innovation to professionals working at the hospital to help them develop their ideas.
- Bringing the culture of innovation and entrepreneurship closer to health/research professionals.
- Establishing channels to enable appropriate training and information for professionals working in innovation.
- Promoting and strengthening alliances between the Innovation Support Unit and the various agents of innovation, both with other management structures, and with companies and R&D organizations.
- Acting as a bridge between agents of innovation from outside the liSGM by offering ad hoc support services, both as interlocutors and as managers of innovation projects.

In 2015, its structure was as follows:

- Head of Unit: Manuel Desco Menéndez.
- Innovation managers:
 - Anna Riera Guerra.
 - Eva Carravilla Expósito.
 - Marco A. Rivas Fernández.
 - Tatiana García Díez.
 - Cristina Garcerán Ortega.
 - Lucía Novoa Vázquez.
- Head of information and communications technology: Javier Pascau González-Garzón.
- Head of electronics: Juan José Vaquero López.
- Head of animal experimentation: Lorena Cussó Mula.
- Head of surgery: Juan Francisco del Cañizo López.

Development and promotion of innovation is a specific area of the Strategic Plan of the liSGM.

In 2012, the Innovation Committee was set up to provide assistance in all areas associated with innovation. It provides regular analyses, studies, and follow-up of liSGM innovation projects and provides criteria and support to ensure appropriate implementation and development.

The members of the Innovation Committee cover the different professional profiles associated with the liSGM: researchers, physicians, managers, and personnel from other areas such as nursing, management/administration, and technical staff. The members are as follows:

- Steering Committee:
 - Chair Rafael Bañares Cañizares (until 15/12/2015); Ismael Buño Borda (since 15/12/2015).
 - Vice-Chair: Manuel Desco Menéndez (Director of the Innovation Support Unit).
 - Thierry Bardinet (Manager of FIBHGM).
- Members at large:
 - Francisco Fernández-Avilés Díaz (Head of Cardiology).

- Emilio Bouza Santiago (Head of Microbiology and Infectious Diseases).
- Pascual Balsalobre López (Hematology Service).
- Paloma Domingo García (Director of the Science Park of Universidad Carlos III).
- Secretary: Anna Riera Guerra (Project Manager).

The identification and registration of the results of research for purposes of industrial protection is key element in promoting their transfer and application and for the development of technology-based commercial projects.

The most noteworthy aspects of innovation in liSGM –which in 2015 accounted for €1.17 million in income– are best seen in the following 3 areas:

1. Intellectual and industrial property:

- a) Patents applied for: 2 new national patents, 1 utility model, 4 international patents, and 6 intellectual property registries.
- b) Patents awarded: a family of 7 international patents, 5 patents (1 of which is international), 1 utility model, and 7 intellectual property registers.
- c) Transfer of patents: a family of 22 international patents, 1 national patent, and 1 intellectual property registry.
- d) The patents transferred from liSGM in 2015 have generated more than €160,000.

2. Innovation projects portfolio:

- a) A total of 37 new projects have been generated, with 144 active projects from a total of 190 at the end of 2015. The distribution of the 144 active projects in the innovation funnel is shown below.
- b) With respect to calls for innovation projects (Retos, FIPSE, and FIS-DTS), liSGM has earned more than €930,000.

3. Contracts: A total of 37 contracts have been closed; 25 are with external bodies. Of these, 4 are for licencing in-house technology to companies, and 8 are for development of collaborative R+D+I projects, most of which generate direct income. In particular contracts for the development of innovation projects alone generated more than €75,000 in 2015.

Furthermore, the main initiatives of the Innovation Support Unit in 2015 were as follows:

1. Organization of 16 training and knowledge sessions in liSGM and at third-party events.
2. Creation of the Research Support Unit in the Innovation Support Unit (<http://www.iisgm.com/infraestructuras/servicios-de-apoyo-a-la-investigacion/>) to

provide services to external partners, thus complementing the service the Innovation Support Unit itself provides to staff of the liSGM.

3. Publication of the Innovation Guidelines (<http://www.iisgm.com/innovacion/unidad-de-apoyo-a-la-innovacion/normativa-de-invenciones-del-iisgm/>).
4. Creation of a monthly innovation report in September 2015.
5. Launch of the Innovation Support Unit in social networks. A twitter account was created in June 2015 and at the end of the year had 128 followers.

Lastly, the website of the liSGM includes a section on innovation to present innovative projects or ideas: <http://www.iisgm.com/innovacion/unidad-de-apoyo-a-la-innovacion/comunica-tu-idea-2/>.

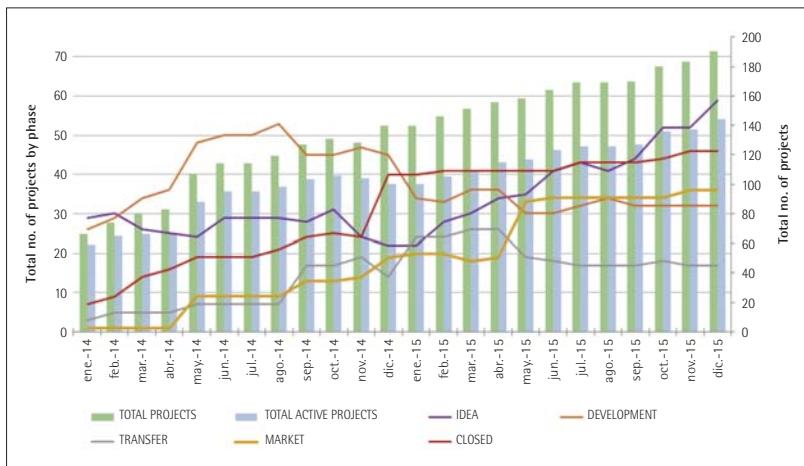
2. INNOVATION PORTFOLIO

Below, we show the project portfolio, or “innovation funnel”, generated by liSGM and active as at December 2015. We also show how the portfolio has developed over the last 2 years.

| | ICT Health | Material and devices | Medicines and pharmaceutical products | Biotechnology and molecular diagnosis | Imaging | Care organization |
|--------------------------------|------------|----------------------|---------------------------------------|---------------------------------------|---------|-------------------|
| Ideas proposed (not developed) | 9 | 12 | 2 | 7 | 8 | 7 |
| Ideas under assessment | 1 | 6 | 0 | 5 | 2 | 0 |
| Ideas under development | 6 | 8 | 1 | 4 | 6 | 7 |
| Ideas under transfer | 3 | 6 | 1 | 3 | 2 | 2 |
| Ideas on the market | 10 | 5 | 5 | 0 | 10 | 6 |

ICT: information and communications technology.

INNOVATION, KNOWLEDGE TRANSFER, AND TRANSLATION TO PRACTICE



The intellectual and industrial property of the liSGM included in the technology portfolio is set out below. This information is constantly updated and can be seen at: <http://www.iisgm.com/innovacion/propiedad-intelectual-e-industrial/propiedad-intelectual-e-industrial/>.

Industrial property

| Name | Reference no. | Owner | Inventor(s) | liSGM Group |
|--|---|--|---------------------------------|---|
| Matriz artificial de gel de fibrina endotelizada superproductora de factores proangiogénicos | P200501182 (Family with 5 patents) | FIBHGM | José María Lasso, Paola Nava | Regenerative medicine in plastic surgery |
| Aparato de tomografía multimodalidad | P200502612 (Family with 10 patents) | FIBHGM - SOCIEDAD ESPAÑOLA DE ELECTRO-MEDICINA Y CALIDAD, S.A. | Juan José Vaquero, Manuel Desco | Advanced technology applications and human health |
| Método y aparato de hemodiafiltración | PCT/ES2007/070081 (Family with 3 patents) | FIBHGM | Juan Francisco del Cañizo | Artificial circulation laboratory |

| Name | Reference no. | Owner | Inventor(s) | liSGM Group |
|--|--|--|---|---|
| Incubadora para imagen con radiación no ionizante | PCT/ES2007/070214 (Family with 3 patents) | FIBHGM | Juan José Vaquero, Manuel Desco, Manuel Sánchez | Advanced technology applications and human health. Neonatal and developmental pathophysiology |
| Uso de la Cilastatina para reducir la nefrotoxicidad en distintos compuestos | PCT/ES2008/070137 (Family with 22 patents) | FIBHGM | Alberto Tejedor, Alberto Lázaro, Sonia Camaña, Ana María Torres, José Antonio Lázaro, Manuela Castilla, María del Carmen de Lucas | Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology |
| Procedimiento mejorado para evaluar el riesgo cardiovascular | P200901923 (Family with 2 patents) | FIBHGM | Maria Concepción Guisasola, Elena Dulín | Biology of inflammation |
| Aparato de adquisición de datos para tomografía computerizada por emisión de radiación gamma y su funcionamiento | P200702836 | FIBHGM – Universidad Politécnica de Madrid | Juan José Vaquero, Manuel Desco, Pedro Guerra, Andrés de Santos, Giancarlo Sportelli | Advanced technology applications and human health |
| Procedimiento y dispositivo para la detección y discriminación de eventos válidos en detectores de radiación gamma | PCT/ES2009/070456 (Family with 2 patents) | FIBHGM | Eduardo Lage, Gustavo Tapias, José Antonio Sánchez, Javier del Pino, Juan José Vaquero, Manuel Desco | Advanced technology applications and human health |
| Método para visualizar la información contenida en imágenes tridimensionales del corazón | P201000363 (Family with 4 patents) | FIBHGM – Universidad Politécnica de Madrid | Esther Pérez, Ángel Arenal, Javier Bermejo, Francisco Fernández-Avilés, Manuel Desco, Mª Jesús Ledesma, Andrés de Santos, José Luis Rubio | Natural history of heart disease. Advanced technology applications and human health. Neonatal and developmental pathophysiology |

(Continued on next page)

| Name | Reference no. | Owner | Inventor(s) | LiSGM Group | Name | Reference no. | Owner | Inventor(s) | LiSGM Group |
|---|------------------------------------|---|---|--|---|------------------------------------|---|--|--------------------------------------|
| Dendrimeros carbosilanos catiónicos obtenidos mediante "click chemistry", su preparación y sus usos | P201130804 | FIBHGM - Universidad de Alcalá de Henares -Universidad de Navarra | Francisco Javier de la Mata, Rafael Gómez, Eduardo Arnaiz, Sandra García, José Luis Copo, Juan Soliveri, José Manuel Hernández, Mª Ángeles Muñoz-Fernández, Verónica Briz, Mª Jesús Serramia, Conchita Tros | Molecular biology of HIV | Compuestos dendríticos carbosilanos homo y hetero-funcionalizados | P201231187 (Family with 2 patents) | Universidad de Alcalá de Henares - FIBHGM | Francisco Javier de la Mata, Rafael Gómez, Mª Ángeles Muñoz-Fernández, Javier Fernández, José Luis Jiménez, Silvia Fernández, Marta Galán, Raquel Lorente, Elena Fuentes, Javier Sánchez, Cornelia Peña, Mª Jesús Serramia, Rosa Reguera | Molecular biology of HIV |
| Método de diagnóstico de insuficiencia renal | P201131506 | FIBHGM - Universidad de Alcalá de Henares - Fundació PUIGVERT | Ricardo Bosch, Arancha Ortega, Jordi Bover, Alberto Lázaro, Alberto Tejedor | Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology | Dispositivo, sistema y procedimiento simulador para entrenamiento de profesionales sanitarios en el manejo de pacientes críticamente enfermos que precisen procedimientos de depuración extrarrenal venenosa continua | P201330340 | FIBHGM - SERGAS - Universidad de Santiago de Compostela | Jesús López-Herce, Santiago Mencia, Antonio Rodríguez | Diseases of the critically ill child |
| Use of esmolol for early regression of left ventricular hypertrophy | EP10382141 (Family with 2 patents) | FIBHGM | Emilio Delgado, Begoña Quintana | Regenerative medicine and development of systems: cardiovascular and osteochondral | Simulador de sutura uterina | U201230998 | FIBHGM | Óscar Martínez, Ignacio Cueto, Blanca González | Obstetrics and gynecology |
| Dendrimeros carbosilanos con un núcleo polifenólico y su uso como antivirales | P201030450 | Universidad de Alcalá de Henares - HGUGM | Francisco Javier de la Mata, Rafael Gómez, Javier Sánchez-Nieves, Paula Ortega, Mª Ángeles Muñoz-Fernández, Louis Chonco, Mª Jesús Serramia | Molecular biology of HIV | Simulador de útero para emergencias obstétricas | P201330161 | FIBHGM | Óscar Martínez, Ignacio Cueto, Blanca González, Mª del Mar García, Ana Isabel Casas | Obstetrics and gynecology |
| Dendrimeros carbosilanos y su uso como antivirales | P201030233 (Family with 8 patents) | Universidad de Alcalá de Henares - HGUGM | Francisco Javier de la Mata, Rafael Gómez, Mª Ángeles Muñoz-Fernández, Javier Sánchez-Nieves, Beatriz Rasines, Louis Chonco, Eduardo Arnaiz, Mª Jesús Serramia | Molecular biology of HIV | Dispositivo de sutura (doble aguja) | U201330693 | FIBHGM | Óscar Martínez, Luis Ortiz, Ignacio Cueto, Blanca González | Obstetrics and gynecology |

(Continued on next page)

INNOVATION, KNOWLEDGE TRANSFER, AND TRANSLATION TO PRACTICE

EXECUTIVE SUMMARY

| Name | Reference no. | Owner | Inventor(s) | LiSGM Group |
|---|------------------------------------|--|---|--|
| Dispositivo de asistencia ventricular | P201331422 | FIBHGM | Juan Francisco del Cañizo, Manuel Ruiz | Artificial circulation laboratory |
| Dispositivo para bombeo de sangre de forma tubular, con válvulas activas gobernado por vacío y aplicación del mismo | P9501070 (Family with 14 patents) | SERMAS - HGUGM | Juan Francisco del Cañizo | Artificial circulation laboratory |
| Mango ergonómico de cubierto | U201430605 | FIBHGM | Irene de los Rios, M ^a Victoria Sevilla | General surgery 1 |
| Dispositivo para prevenir la neumonía asociada a ventilación mecánica | U201430814 | FIBHGM | Juan Francisco del Cañizo, Emilio Bouza, M ^a Jesús Pérez | Artificial circulation laboratory. Infectious diseases |
| Dispositivo aplicador de antifúngico coloreado | P201430751 | FIBHGM | Pablo Martín-Rabadán | Infectious diseases |
| Portaobjetos | U201430943 | FIBHGM | Pablo Martín-Rabadán | Infectious diseases |
| Catéter y método para la detección de actividad eléctrica en un órgano | P201431315 (Family with 2 patents) | FIBHGM - Universidad Politécnica de Valencia - Universidad de Michigan | Andreu Martínez, Felipe Atienza, Miguel Rodrigo, M ^a Salud Guillén, Omer Berenfeld | Natural history of heart disease |
| Apósito | U201431166 | FIBHGM | José M ^a Isla | Reanimation |
| Composición para liberación controlada de compuestos | P201431583 | FIBHGM - Dr. Enrique Alía | Enrique Alía Fernández, Elena Conde | Dermatology |
| Dispositivo de localización de arritmias cardíacas | P201431597 (Family with 2 patents) | FIBHGM - Universidad Politécnica de Valencia | Andreu Martínez, Felipe Atienza, Ángel Arenal, Francisco Fernández-Aviles, M ^a Salud Guillén | Natural history of heart disease |

| Name | Reference no. | Owner | Inventor(s) | LiSGM Group |
|---|---------------|---|--|--|
| Maqueta didáctica armable | U201530218 | FIBHGM | Juan Antonio León | Obstetrics and gynecology |
| Nanopartículas metálicas estabilizadas con dendrones carbosilano y sus usos | P201500669 | Universidad de Alcalá de Henares - FIBHGM | Francisco Javier de la Mata, Rafael González, Javier Sánchez-Nieva, Cornelia Peña, José Luis Copa, Juan Soliveri, Jorge Pérez, M ^a Ángeles Muñoz, José Luis Jiménez, Pilar García | Molecular biology of HIV |
| Dispositivo protector bucal con depresor lingual | P 201531508 | FIBHGM | Guillermo Juan Rodríguez, Javier Casanova | Regenerative medicine and development of systems: cardiovascular and osteochondral |
| Mapping and quantifying blood stasis and thrombus risk in the heart | US 62259494 | FIBHGM - University of California | Juan Carlos del Álamo, Andrew Kahn, Lorenzo Rossini, Javier Bermejo, Pablo Martínez-Legazpi, Raquel Yotti | Natural history of heart disease |

Intellectual property

| Name | Reference no. | Owner | Inventor(s) | LiSGM Group |
|--------------------------------|--------------------------------|--------------|---|---|
| MANGOSE | Registration No.: 02/2010/4412 | FIBHGM | Javier Pascau, Manuel Desco, Mónica Abellá, Alejandro Sisniega, Juan José Vaquero | Advanced technology applications and human health |
| CUSQ: CARDIO US/Quantification | Registration No.: 16/2010/303 | FIBHGM - UPM | Manuel Desco, María Jesús Ledesma, Andrés de Santos | Advanced technology applications and human health |

(Continued on next page)

| Name | Reference no. | Owner | Inventor(s) | liSGM Group | Name | Reference no. | Owner | Inventor(s) | liSGM Group |
|--|--------------------------------|--------|--|--|---|--------------------------------|--------|---|------------------------------|
| FIRST (Fast Iterative Reconstruction Software for Tomography) | Notary registration no.: 3806 | FIBHGM | José Manuel Udiá, Joaquín López, Samuel España, Manuel Desco, Juan José Vaquero | Advanced technology applications and human health | Manual para la creación de una unidad funcional de terapias biológicas en pacientes con artritis crónicas | Registration No.: 16/2013/5179 | FIBHGM | Luis Carreño, Inmaculada de la Torre, Larissa Valor, Tamara del Río, Vicente Escudero, Diana Hernández, Carmen Rodríguez | Systemic autoimmune diseases |
| QuTIS (Quantification Tool for in vivo Spectroscopy) | Notary registration no.: 5095 | FIBHGM | Manuel Desco, Juan José Vaquero | Advanced technology applications and human health | GESTEO | Registration No.: 16/2014/3806 | FIBHGM | Rafal Bañares, Mª Carmen Olmedo, José Mª Bellón, Miriam Arriaga, Luis Fernández, Mª Isabel Ballesteros, Maite Fontans, Xoan Barreiro, Alejandro López | Technical Unit of the liSGM |
| Herramienta informática para la Gestión Electrónica de la Agenda de Transplante Hematopoyético "gesTHrónica" | Registration No.: 16/2008/7735 | FIBHGM | Pascual Balsalobre, Ismael Buño, José Luis Diez | Genetics and clinical aspects of hematologic neoplasms and hematopoietic cell transplant | Recomendaciones sobre el manejo de Infecciones Fúngicas Invasoras (IFIs) | Registration No.: 16/2014/5265 | FIBHGM | Patricia Muñoz, Emilio Bouza, María Sanjurjo, Carmen Rodríguez, Maricela Valerio | Infectious diseases |
| MMWKS | Not registered | FIBHGM | Manuel Desco, Juan José Vaquero | Advanced technology applications and human health | Taller práctico de Técnicas de Laboratorio de Inmunología e interpretación clínica para médicos | Registration No.: 16/2014/6111 | FIBHGM | Larissa Valor, Luis Carreño, Diana Hernández | Systemic autoimmune diseases |
| MRSITool - software para la cuantificación de estudios de imagen estreptoscópica | Not registered | FIBHGM | Manuel Desco | Advanced technology applications and human health | Taller práctico de Técnicas de Laboratorio de Inmunofluorescencia indirecta (IFI "Live") para médicos | Registration No.: 16/2014/6112 | FIBHGM | Larissa Valor, Fco. Javier López, Diana Hernández | Systemic autoimmune diseases |
| Biblioteca de fármacos para bombas de infusión inteligentes en las unidades de cuidados intensivos pediátricos | Registration No.: 16/2011/7360 | FIBHGM | Amelia Caridad Sánchez y Silvia Manrique Rodríguez | Hospital pharmacy and pharmacogenomics | Material docente para la infección relacionada con el catéter | Registration No.: 16/2014/6113 | FIBHGM | María Guembe, Emilio Bouza, María Jesús Pérez | Infectious diseases |
| Estudio de impacto clínico de un plan docente de formación continuada sobre las infecciones asociadas a dispositivos intravasculares | Registration No.: 16/2013/4798 | FIBHGM | Emilio Bouza, María Guembe, Patricia Muñoz, Mª Jesús Pérez, Mª del Mar San Segundo | Infectious diseases | | | | | |

(Continued on next page)

INNOVATION, KNOWLEDGE TRANSFER, AND TRANSLATION TO PRACTICE

EXECUTIVE SUMMARY

| Name | Reference no. | Owner | Inventor(s) | liSGM Group | Name | Reference no. | Owner | Inventor(s) | liSGM Group |
|--|--------------------------------|--------------------|--|--|---|--------------------------------|--------|--|--|
| Panel alloGENOMICS v1.13 – Panel de genes y regiones de interés para su aplicación en el estudio de la influencia de los polimorfismos genéticos en el desarrollo de complicaciones post-trasplante alogénico de progenitores hematopoyéticos (allo-TPH) | Registration No.: 16/2014/7306 | FIBHGM | Ismael Buño, Milagros González, José Luis Díez, Jorge Gayoso, Carolina Martínez, Elena Buces, David Serrano, Pascual Balsalobre, Mi Kwon | Genetics and clinical aspects of hematologic neoplasms and hematopoietic cell transplant | Tolerancia cero a la bacteriemia relacionada con el catéter: optimización de la prevención con nuevos sistemas de vigilancia de las vías endovasculares | Registration No.: 16/2015/2983 | FIBHGM | María Guembe, Emilio Bouza Mª Jesús Pérez Granda | Infectious diseases |
| SMART, application for cancer genetic counseling | Registration No.: 16/2015/5724 | FIBHGM, UNED, URJC | Iván Márquez, Juan Martínez Romo, Cristina Rodríguez, Susana Borromeo | Translational medical oncology and personalized cancer therapy | Documento de registro para vigilancia durante la inserción y el mantenimiento de los catéteres intravasculares | Registration No.: 16/2015/2984 | FIBHGM | María Guembe, Emilio Bouza Mª Jesús Pérez | Infectious diseases |
| Herramienta de Gestión y Cuadro de Mando de Innovación | Registration No.: 16/2015/3255 | FIBHGM | Anna Riera, Manuel Desco, Eva Carravilla, Eva Talve, Marco Rivas, Isabel Ballesteros, Thierry Bardinet, Rafael Bañares, Carmen Olmedo | Innovation Support Area. Technical Unit of the liSGM | Sistema de triaje del paciente pediátrico en Urgencias-Gregorio Marañón (TRIPED-GM) | Registration No.: 16/2015/5530 | FIBHGM | María Concepción Minguez Gloria Margarita Guerra, María del Carmen Ignacio Cerro | Pediatric emergencies |
| Curso sobre el manejo seguro de los sistemas automatizados de dispensación por el personal sanitaria de enfermería de planta y evaluación de su competencia | Registration No.: 16/2015/503 | FIBHGM | Elena Lobato, María Sanjurjo, Ana Herranz, Carmen Rodríguez | Hospital pharmacy and pharmacogenomics | E-OncoSalud: Programa de Telemedicina aplicado al tratamiento ambulatorio del paciente onco-hematológico | Application no.: M-008404/2015 | FIBHGM | María Sanjurjo, Ana Mª Herranz, Vicente Escudero, Almudena Ribed, Roberto Collado, Sara Ibáñez. | Hospital pharmacy and pharmacogenomics |
| Optimización en el Diagnóstico Microbiológico de los Reservorios Totalmente Implantes | Registration No.: 16/2015/2094 | FIBHGM | María Guembe, Pablo Martín-Rabadán, Emilio Bouza, Mª Luisa Rivera, Teresa Vicente | Infectious diseases | NefroRules: Reglas clínicas para aumentar la seguridad del tratamiento en pacientes con insuficiencia renal | Application no.: M-008407/2015 | FIBHGM | Sara Ibáñez, María Sanjurjo, Ana Herranz, Carmen Rodríguez, Mª Luisa Martín, Mª Ángeles Goicoechea, Eduardo Verde, José Luño | Hospital pharmacy and pharmacogenomics |

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Technology Companies

AMBIOX BIOTECH, S.L.

Ambiox Biotech is characterized by its entrepreneurial spirit, capacity for innovation, and social commitment. Its mission is to apply innovative developments in nanotechnology to the field of biomedicine, thus bringing added value to society that can be appreciated at international level. The creativity and innovation of Ambiox Biotech are developed for application in human health care, thus forging a link between science and the market.

The company was created as a spin-off at Universidad de Alcalá de Henares. Its team includes M^a Ángeles Muñoz, Director of the HIV Molecular Biology Group of the IISGM.

SIMCOSMETIC BIOTECH, S.L.

SimCosmetic Biotech develops new dermocosmetics using natural ingredients. Its biotechnology platforms are designed to combine natural ingredients in order to generate new high-quality protected dermocosmetics with synergistic activity.

The company is the fruit of a joint venture between Hospital Gregorio Marañón, Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), and the University of Freiburg (Germany), as well as with leading companies in the field of natural ingredients and development of cosmetics. SimCosmetic's key advantage in developing new dermocosmetic and skin care products is its ability to cooperate with various public and private organizations.

NATURE 4D

Nature 4D designs, develops, and sets up advanced imaging devices tailored to the needs of the client. These devices have multiple applications in the field of biomedicine and basic research.

Nature 4D was created as a spin-off at Universidad Carlos III de Madrid based on technology developed within the framework of the IISGM. Its activity focuses on advanced optical imaging techniques, specifically advanced microscopy and preclinical optical imaging techniques. Thanks to a software application developed and registered by the sponsor and the company's highly specialized experience, Nature 4D offers tailored solutions involving optical imaging devices with user-friendly software for the acquisition and representation of data in 2D and 3D.

Projects obtained in 2015

PROJECTS IN 2015

During 2015, liSGM increased its research capacity. One year later, we can highlight the Institute's ability to apply for both public and private competitive calls (below).

| | Convening Body | Number | | |
|---|---|--------|------|------|
| | | 2013 | 2014 | 2015 |
| National and international public competitive projects | Instituto de Salud Carlos III | 20 | 20 | 23 |
| | Ministerio de Salud y Política Social y MINECO | 2 | 4 | 3 |
| | Programa Ibero-American de Ciencia, Tecnología y Desarrollo | 1 | 0 | 0 |
| | European Commission | 3 | 1 | 0 |
| | Comunidad de Madrid | - | 1 | 0 |
| National and international private competitive projects | Fundación Mutua Madrileña | 4 | 6 | 1 |
| | Other private organizations | 3 | 5 | 6 |

| ACTIVE PROJECTS | | |
|-----------------|--|---|
| | Active research projects funded through public competitive calls | Active research projects funded through private competitive calls |
| 2012 | 186 | 46 |
| 2013 | 212 | 40 |
| 2014 | 227 | 67 |
| 2015 | 255 | 63 |

CLINICAL AND OBSERVATIONAL STUDIES IN 2015

During the year 2015, a total of 751 clinical studies (clinical trials and observational studies) were active in our hospital, and 223 new studies were started. More than 94% of the trials started in the year 2015 were phase I, II, and III studies. By research area, almost 45% of the clinical studies were led by the Translational Oncology area.

ACTIVE CLINICAL STUDIES

| | |
|------|-----|
| 2013 | 644 |
| 2014 | 715 |
| 2015 | 945 |

NEW CLINICAL STUDIES

| | |
|------|-----|
| 2013 | 199 |
| 2014 | 189 |
| 2015 | 223 |

NEW CLINICAL STUDIES

| | Clinical trials | Observational studies |
|------|-----------------|-----------------------|
| 2013 | 132 | 67 |
| 2014 | 127 | 62 |
| 2015 | 150 | 73 |

DISTRIBUTION OF CLINICAL TRIALS SIGNED BY PHASE

| | 2013 (%) | 2014 (%) | 2015 (%) |
|--|----------|----------|----------|
| Phase I | 3.8 | 3.9 | 5.33 |
| Phase II | 27.2 | 32.2 | 31.34 |
| Phase III | 60.6 | 54.3 | 58 |
| Phase IV | 5.3 | 8.6 | 1.33 |
| Other (health care products, vaccines) | 3 | 0.8 | 4 |

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2015**National/International**

| | No. | % |
|---------------|-----|-------|
| National | 74 | 33.22 |
| International | 149 | 66.88 |

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2015**BY AREA OF iISGM**

| | No. | % |
|--------------|-----|-------|
| Area 1 | 0 | 0 |
| Area 2 | 25 | 11.22 |
| Area 3 | 8 | 3.59 |
| Area 4 | 11 | 4.93 |
| Area 5 | 32 | 14.36 |
| Area 6 | 100 | 44.9 |
| Area 7 | 28 | 12.57 |
| Nursing area | 0 | 0 |
| Other | 19 | 8.53 |



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Public funding for the national program "Promotion of Excellence in Scientific Research", and "Strategic Action in Health Care" is complemented by funding from the European Union through the European Regional Development Fund (ERDF).

Funding of the LiSGM in 2015

The global analysis of Institute funding was performed by collecting all income obtained by research groups both from competitive/noncompetitive projects and from clinical trials, agreements between various bodies, and donations.

The objective of this methodology is to be able to provide information on the capacity of LiSGM groups to generate income.

The income generated by LiSGM researchers in 2015 came to €13,224,518, that is, 4.1% more than in 2014.

| | 2013 | 2014 | 2015 |
|---------------------------------------|-------------|-------------|-------------|
| Total income generated by researchers | €12,495,983 | €12,700,764 | €13,224,518 |

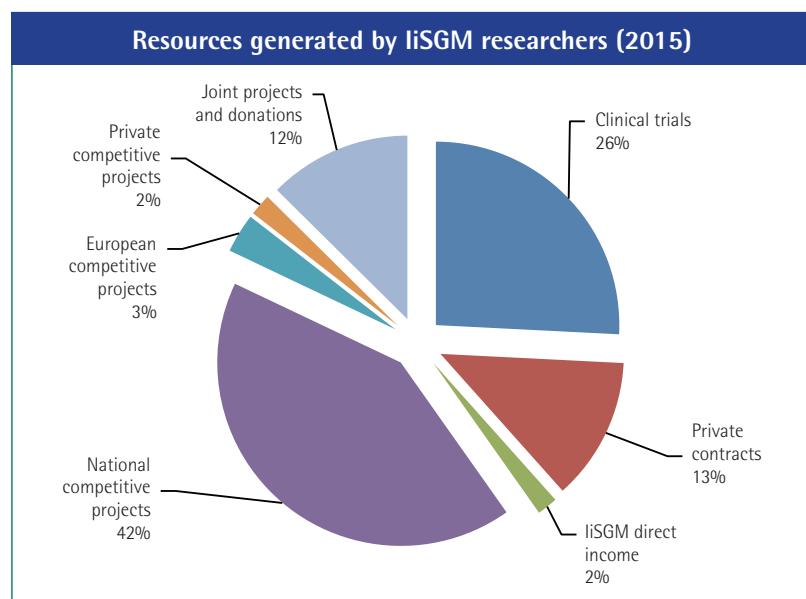
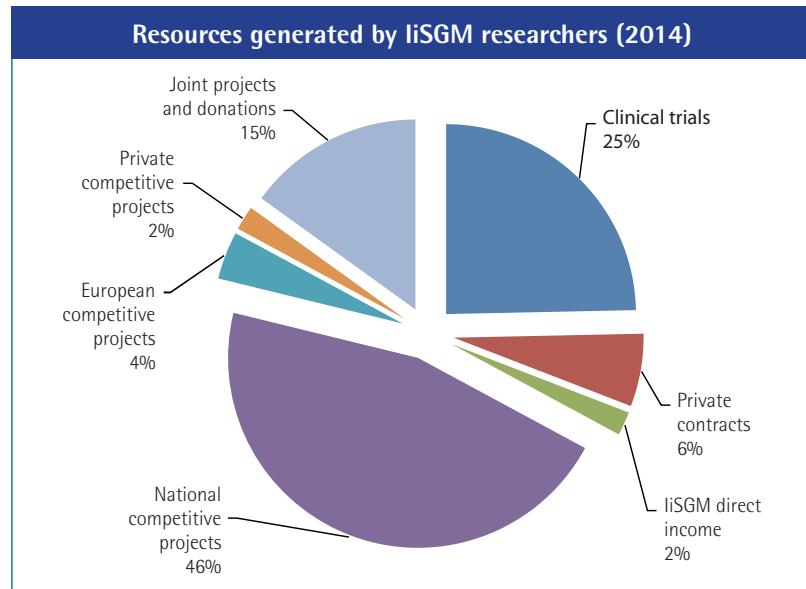
As in previous years, this income is for the support and development of research in the groups.

53% of income was from the private sector

In 2015, researchers generated €6,994,435 in private income; 49% of this amount was from clinical trials. In fact, the income generated by researchers in this field grew by 9% between 2014 and 2015.

47% of income was obtained from competitive calls

Despite the reduction in available funds for research projects through competitive calls, especially in the public sector, the LiSGM continues to have a considerable ability to generate income from competitive calls (47%).



As in previous years, in the case of individual information provided by each group in this report, the only projects reported are those obtained by groups in competitive calls (public and private) where the principal investigator was a group researcher. Therefore, other sources of funding have not been taken into account. The objective of this premise is to provide information on the capacity of each of the groups to obtain funding in a competitive environment.



Scientific publications

The list presented below shows all the referenced publications in which investigators from the iSGM participated in during 2015. Publications with an impact factor greater than 10 points are highlighted.

In order to obtain the total impact factor, only information from publications indexed as original articles, reviews, editorials, and proceedings papers have been taken into account. Other types of publication (eg, letters to the editor and case studies) have not been included.

It is important to note that publications involving different groups or areas of the Institute are computed individually in each group and area, although only once for purposes of the calculation of the Institute's total impact factor.

| Journal | IF | No. | Sum of IF | Q |
|--|-------|-----|-----------|---|
| ACTA PAEDIATRICA | 1.647 | 1 | 1.647 | 2 |
| ACTA TROPICA | 2.380 | 1 | 2.380 | 2 |
| ACTAS UROLOGICAS ESPANOLAS | 0.964 | 4 | 3.856 | 4 |
| ADVANCES IN THERAPY | 2.503 | 1 | 2.503 | 2 |
| AGE AND AGEING | 4.201 | 1 | 4.201 | 1 |
| AIDS | 4.407 | 2 | 8.814 | 1 |
| AIDS RESEARCH AND HUMAN RETROVIRUSES | 1.949 | 1 | 1.949 | 3 |
| ALIMENTARY PHARMACOLOGY & THERAPEUTICS | 6.320 | 2 | 12.640 | 1 |
| ALLERGOLOGIA ET IMMUNOPATHOLOGIA | 1.689 | 2 | 3.378 | 4 |
| AMERICAN HEART JOURNAL | 4.332 | 2 | 8.664 | 1 |
| AMERICAN JOURNAL OF CARDIOLOGY | 3.154 | 1 | 3.154 | 2 |
| AMERICAN JOURNAL OF DERMATOPATHOLOGY | 1.396 | 1 | 1.396 | 3 |
| AMERICAN JOURNAL OF HEMATOLOGY | 5.000 | 1 | 5.000 | 1 |

| Journal | IF | No. | Sum of IF | Q |
|--|--------|-----|-----------|---|
| AMERICAN JOURNAL OF INFECTION CONTROL | 1.995 | 2 | 3.990 | 2 |
| AMERICAN JOURNAL OF KIDNEY DISEASES | 6.269 | 1 | 6.269 | 1 |
| AMERICAN JOURNAL OF MEDICINE | 5.610 | 1 | 5.610 | 1 |
| AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY | 3.297 | 1 | 3.297 | 2 |
| AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY | 3.324 | 1 | 3.324 | 2 |
| AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE | 13.118 | 1 | 13.118 | 1 |
| ANAESTHESIA | 3.794 | 1 | 3.794 | 1 |
| ANALES DE PEDIATRIA | 0.773 | 11 | 8.503 | 4 |
| ANALES DEL SISTEMA SANITARIO DE NAVARRA | 0.783 | 1 | 0.783 | 4 |
| ANESTHESIA AND ANALGESIA | 3.827 | 1 | 3.827 | 1 |
| ANNALS OF BIOMEDICAL ENGINEERING | 2.887 | 1 | 2.887 | 1 |
| ANNALS OF HEMATOLOGY | 3.022 | 2 | 6.044 | 2 |
| ANNALS OF HEPATOLOGY | 1.811 | 2 | 3.622 | 4 |
| ANNALS OF NEUROLOGY | 9.638 | 1 | 9.638 | 1 |
| ANNALS OF ONCOLOGY | 9.269 | 2 | 18.538 | 1 |
| ANNALS OF SURGICAL ONCOLOGY | 3.655 | 1 | 3.655 | 1 |
| ANNALS OF THE RHEUMATIC DISEASES | 12.384 | 3 | 37.152 | 1 |
| ANNUAL REVIEW OF BIOMEDICAL ENGINEERING | 10.256 | 1 | 10.256 | 1 |
| ANNUAL REVIEW OF FLUID MECHANICS | 12.333 | 1 | 12.333 | 1 |
| ANTICANCER RESEARCH | 1.895 | 1 | 1.895 | 3 |
| ANTIMICROBIAL AGENTS AND CHEMOTHERAPY | 4.415 | 5 | 22.075 | 1 |
| ANTIVIRAL RESEARCH | 4.909 | 3 | 14.727 | 1 |
| ARCHIVOS DE BRONCONEUMOLOGIA | 1.771 | 6 | 10.626 | 3 |
| ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY | 5.969 | 1 | 5.969 | 1 |
| ARTHRITIS & RHEUMATOLOGY | 6.009 | 1 | 6.009 | 1 |
| ARTHRITIS CARE & RESEARCH | 3.229 | 3 | 9.687 | 2 |
| ARTHRITIS RESEARCH & THERAPY | 3.979 | 1 | 3.979 | 1 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|--------------------------------------|--------|-----|-----------|---|
| ATHEROSCLEROSIS | 3.942 | 1 | 3.942 | 1 |
| ATHEROSCLEROSIS SUPPLEMENTS | 3.356 | 1 | 3.356 | 2 |
| AUSTRALIAN FAMILY PHYSICIAN | 0.759 | 1 | 0.759 | 3 |
| BIOCHEMICAL PHARMACOLOGY | 5.091 | 1 | 5.091 | 1 |
| BIOMATERIALS | 8.387 | 1 | 8.387 | 1 |
| BIOMED RESEARCH INTERNATIONAL | 2.134 | 3 | 6.402 | 3 |
| BIOMETRICS | 1.360 | 1 | 1.360 | 2 |
| BIOPRESERVATION AND BIOBANKING | 1.804 | 1 | 1.804 | 2 |
| BJU INTERNATIONAL | 4.387 | 2 | 8.774 | 1 |
| BMC ANESTHESIOLOGY | 1.320 | 2 | 2.640 | 3 |
| BMC CANCER | 3.265 | 2 | 6.530 | 2 |
| BMC FAMILY PRACTICE | 1.641 | 1 | 1.641 | 2 |
| BMC INFECTIOUS DISEASES | 2.690 | 4 | 10.760 | 2 |
| BMC MUSCULOSKELETAL DISORDERS | 1.684 | 1 | 1.684 | 2 |
| BMJ OPEN | 2.562 | 1 | 2.562 | 1 |
| BONE MARROW TRANSPLANTATION | 3.636 | 2 | 7.272 | 2 |
| BRACHYTHERAPY | 2.088 | 1 | 2.088 | 3 |
| BRAIN | 10.103 | 1 | 10.103 | 1 |
| BREAST CANCER RESEARCH | 5.211 | 3 | 15.633 | 1 |
| BREAST CANCER RESEARCH AND TREATMENT | 4.085 | 1 | 4.085 | 2 |
| BRITISH JOURNAL OF HAEMATOLOGY | 5.401 | 1 | 5.401 | 1 |
| BRITISH JOURNAL OF OPHTHALMOLOGY | 3.036 | 1 | 3.036 | 1 |
| BRITISH JOURNAL OF PHARMACOLOGY | 5.259 | 1 | 5.259 | 1 |
| CANCER CYTOPATHOLOGY | 3.092 | 1 | 3.092 | 1 |
| CANCER MEDICINE | 2.915 | 1 | 2.915 | 3 |
| CARDIOLOGY IN THE YOUNG | 0.825 | 1 | 0.825 | 4 |
| CARDIOLOGY JOURNAL | 1.130 | 1 | 1.130 | 4 |
| CARDIOVASCULAR DIABETOLOGY | 4.534 | 1 | 4.534 | 1 |
| CARDIOVASCULAR RESEARCH | 5.465 | 2 | 10.930 | 1 |

| Journal | IF | No. | Sum of IF | Q |
|---|--------|-----|-----------|---|
| CEREBROVASCULAR DISEASES | 3.359 | 1 | 3.359 | 1 |
| CHEST | 5.940 | 1 | 5.940 | 1 |
| CIRCULATION | 17.047 | 5 | 85.235 | 1 |
| CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY | 4.428 | 2 | 8.856 | 1 |
| CIRUGIA ESPANOLA | 1.000 | 3 | 3.000 | 3 |
| CLINICAL & TRANSLATIONAL ONCOLOGY | 2.075 | 9 | 18.675 | 3 |
| CLINICAL AND EXPERIMENTAL IMMUNOLOGY | 3.148 | 1 | 3.148 | 2 |
| CLINICAL AND EXPERIMENTAL RHEUMATOLOGY | 2.495 | 11 | 27.445 | 2 |
| CLINICAL BIOCHEMISTRY | 2.382 | 1 | 2.382 | 2 |
| CLINICAL CANCER RESEARCH | 8.738 | 1 | 8.738 | 1 |
| CLINICAL GASTROENTEROLOGY AND HEPATOLOGY | 7.680 | 1 | 7.680 | 1 |
| CLINICAL INFECTIOUS DISEASES | 8.736 | 6 | 52.416 | 1 |
| CLINICAL MICROBIOLOGY AND INFECTION | 4.575 | 7 | 32.025 | 1 |
| CLINICAL NUTRITION | 4.487 | 2 | 8.974 | 1 |
| CLINICAL PSYCHOPHARMACOLOGY AND NEUROSCIENCE | 1.500 | 1 | 1.500 | 4 |
| CLINICAL RESEARCH IN CARDIOLOGY | 4.324 | 2 | 8.648 | 1 |
| CLINICAL RHEUMATOLOGY | 2.042 | 1 | 2.042 | 3 |
| CLINICAL SCIENCE | 4.996 | 1 | 4.996 | 1 |
| CLINICAL TRANSPLANTATION | 1.844 | 1 | 1.844 | 2 |
| COMMUNICATIONS IN STATISTICS-SIMULATION AND COMPUTATION | 0.397 | 1 | 0.397 | 4 |
| COMPUTER COMMUNICATIONS | 2.099 | 1 | 2.099 | 1 |
| COMPUTER SYSTEMS SCIENCE AND ENGINEERING | 0.291 | 1 | 0.291 | 4 |
| COMPUTERS & ELECTRICAL ENGINEERING | 1.084 | 1 | 1.084 | 2 |
| COMPUTERS IN BIOLOGY AND MEDICINE | 1.521 | 1 | 1.521 | 2 |
| CONCURRENCY AND COMPUTATION-PRACTICE & EXPERIENCE | 0.942 | 1 | 0.942 | 3 |
| CONTACT DERMATITIS | 5.692 | 2 | 11.384 | 1 |
| CORTEX | 4.314 | 1 | 4.314 | 1 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|--|---------------|----------|---------------|----------|
| Critical Care Medicine | 7.422 | 1 | 7.422 | 1 |
| Critical Reviews in Oncology Hematology | 5.039 | 1 | 5.039 | 1 |
| Current Medical Research and Opinion | 2.643 | 1 | 2.643 | 1 |
| Current Medicinal Chemistry | 3.455 | 1 | 3.455 | 1 |
| Current Neurology and Neuroscience Reports | 2.961 | 1 | 2.961 | 2 |
| Current Oncology | 1.829 | 1 | 1.829 | 4 |
| Current Oncology Reports | 2.653 | 1 | 2.653 | 3 |
| Current Opinion in HIV and AIDS | 4.378 | 1 | 4.378 | 1 |
| Current Pharmaceutical Design | 3.052 | 1 | 3.052 | 2 |
| Current Stem Cell Research & Therapy | 2.645 | 2 | 5.290 | 3 |
| Dermatologic Therapy | 1.268 | 1 | 1.268 | 3 |
| Diabetes Research and Clinical Practice | 3.045 | 1 | 3.045 | 2 |
| Digestive and Liver Disease | 2.719 | 1 | 2.719 | 3 |
| Digestive Diseases and Sciences | 2.516 | 2 | 5.032 | 3 |
| Digital Signal Processing | 1.444 | 1 | 1.444 | 2 |
| Disease Models & Mechanisms | 4.316 | 1 | 4.316 | 1 |
| Drug Safety | 3.206 | 1 | 3.206 | 1 |
| Emergencias | 2.917 | 2 | 5.834 | 1 |
| Endocrine Practice | 2.074 | 1 | 2.074 | 3 |
| Enfermedades Infecciosas y Microbiología Clínica | 1.530 | 7 | 10.710 | 3 |
| Environmental Research | 3.088 | 1 | 3.088 | 1 |
| Epidemiology and Infection | 2.515 | 1 | 2.515 | 2 |
| European Archives of Oto-Rhino-Laryngology | 1.627 | 1 | 1.627 | 2 |
| European Child & Adolescent Psychiatry | 3.339 | 3 | 10.017 | 1 |
| European Geriatric Medicine | 1.326 | 1 | 1.326 | 4 |
| European Heart Journal | 15.064 | 3 | 45.192 | 1 |
| European Heart Journal-Cardiovascular Imaging | 4.293 | 2 | 8.586 | 1 |
| European Journal of Anaesthesiology | 3.634 | 1 | 3.634 | 1 |

| Journal | IF | No. | Sum of IF | Q |
|---|---------------|----------|---------------|----------|
| European Journal of Cancer | 6.163 | 1 | 6.163 | 1 |
| European Journal of Clinical Investigation | 2.687 | 1 | 2.687 | 1 |
| European Journal of Clinical Microbiology & Infectious Diseases | 2.857 | 6 | 17.142 | 2 |
| European Journal of Clinical Pharmacology | 2.710 | 1 | 2.710 | 2 |
| European Journal of Dermatology | 2.069 | 5 | 10.345 | 2 |
| European Journal of Internal Medicine | 2.591 | 1 | 2.591 | 1 |
| European Journal of Medicinal Chemistry | 3.902 | 1 | 3.902 | 1 |
| European Journal of Nuclear Medicine and Molecular Imaging | 5.537 | 1 | 5.537 | 1 |
| European Journal of Paediatric Neurology | 1.923 | 1 | 1.923 | 2 |
| European Neuropsychopharmacology | 4.409 | 3 | 13.227 | 1 |
| European Polymer Journal | 3.485 | 1 | 3.485 | 1 |
| European Psychiatry | 3.912 | 2 | 7.824 | 1 |
| European Spine Journal | 2.132 | 1 | 2.132 | 2 |
| Evidence-Based Complementary and Alternative Medicine | 1.931 | 1 | 1.931 | 2 |
| Experimental Hematology | 2.303 | 1 | 2.303 | 3 |
| Expert Review of Anti-Infective Therapy | 3.542 | 1 | 3.542 | 1 |
| Expert Review of Pharmacoeconomics & Outcomes Research | 1.631 | 2 | 3.262 | 3 |
| Food & Function | 2.686 | 1 | 2.686 | 1 |
| Frontiers in Aging Neuroscience | 4.348 | 1 | 4.348 | 1 |
| Frontiers in Immunology | 5.695 | 1 | 5.695 | 1 |
| Frontiers in Pharmacology | 4.418 | 1 | 4.418 | 1 |
| Gaceta Sanitaria | 1.509 | 2 | 3.018 | 3 |
| Gastroenterología y Hepatología | 0.800 | 2 | 1.600 | 4 |
| Geriatrics & Gerontology International | 2.229 | 1 | 2.229 | 2 |
| GLIA | 5.997 | 1 | 5.997 | 1 |
| GUT | 14.921 | 1 | 14.921 | 1 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|--|---------------|----------|---------------|----------|
| HEALTH INFORMATICS JOURNAL | 1.578 | 1 | 1.578 | 3 |
| HEART | 5.693 | 1 | 5.693 | 1 |
| HEPATO-GASTROENTEROLOGY | 0.792 | 1 | 0.792 | 4 |
| HEPATOTOLOGY | 11.711 | 3 | 35.133 | 1 |
| HIV MEDICINE | 3.341 | 2 | 6.682 | 2 |
| HUMAN BRAIN MAPPING | 4.962 | 2 | 9.924 | 1 |
| HUMAN MUTATION | 5.089 | 1 | 5.089 | 1 |
| HYPERTENSION | 6.294 | 2 | 12.588 | 1 |
| IEEE COMMUNICATIONS LETTERS | 1.291 | 1 | 1.291 | 2 |
| IEEE SIGNAL PROCESSING LETTERS | 1.661 | 1 | 1.661 | 2 |
| IEEE TRANSACTIONS ON CONSUMER ELECTRONICS | 1.120 | 1 | 1.120 | 2 |
| IEEE TRANSACTIONS ON INFORMATION THEORY | 1.737 | 1 | 1.737 | 2 |
| IEEE TRANSACTIONS ON MEDICAL IMAGING | 3.756 | 1 | 3.756 | 1 |
| IEEE TRANSACTIONS ON SIGNAL PROCESSING | 2.624 | 3 | 7.872 | 1 |
| IMMUNOLOGIC RESEARCH | 2.934 | 1 | 2.934 | 2 |
| INFECTION GENETICS AND EVOLUTION | 2.591 | 1 | 2.591 | 2 |
| INORGANIC CHEMISTRY | 4.820 | 1 | 4.820 | 1 |
| INSURANCE MATHEMATICS & ECONOMICS | 1.378 | 1 | 1.378 | 2 |
| INTEGRATED COMPUTER-AIDED ENGINEERING | 4.981 | 1 | 4.981 | 1 |
| INTENSIVE CARE MEDICINE | 10.125 | 1 | 10.125 | 1 |
| INTERNAL MEDICINE JOURNAL | 1.526 | 1 | 1.526 | 2 |
| INTERNATIONAL CLINICAL PSYCHOPHARMACOLOGY | 2.415 | 1 | 2.415 | 2 |
| INTERNATIONAL IMMUNOPHARMACOLOGY | 2.551 | 1 | 2.551 | 2 |
| INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS | 4.097 | 2 | 8.194 | 1 |
| INTERNATIONAL JOURNAL OF CANCER | 5.531 | 3 | 16.593 | 1 |
| INTERNATIONAL JOURNAL OF CARDIOLOGY | 4.638 | 5 | 23.190 | 1 |
| INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE | 3.046 | 2 | 6.092 | 2 |

| Journal | IF | No. | Sum of IF | Q |
|---|---------------|----------|----------------|----------|
| INTERNATIONAL JOURNAL OF CLINICAL PHARMACY | 1.339 | 2 | 2.678 | 4 |
| INTERNATIONAL JOURNAL OF CLINICAL PRACTICE | 2.226 | 1 | 2.226 | 1 |
| INTERNATIONAL JOURNAL OF COLORECTAL DISEASE | 2.383 | 1 | 2.383 | 2 |
| INTERNATIONAL JOURNAL OF DERMATOLOGY | 1.415 | 1 | 1.415 | 3 |
| INTERNATIONAL JOURNAL OF GYNECOLOGICAL CANCER | 2.116 | 1 | 2.116 | 2 |
| INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY | 4.333 | 1 | 4.333 | 1 |
| INTERNATIONAL JOURNAL OF PHARMACEUTICS | 3.994 | 1 | 3.994 | 1 |
| INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS | 4.495 | 1 | 4.495 | 1 |
| INTERNATIONAL JOURNAL OF SPORTS MEDICINE | 2.528 | 1 | 2.528 | 1 |
| JACC-CARDIOVASCULAR INTERVENTIONS | 7.630 | 1 | 7.630 | 1 |
| JACC-HEART FAILURE | 7.218 | 2 | 14.436 | 1 |
| JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES | 3.806 | 2 | 7.612 | 1 |
| JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE | 5.429 | 1 | 5.429 | 1 |
| JOURNAL OF ALZHEIMERS DISEASE | 3.920 | 1 | 3.920 | 2 |
| JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY | 4.919 | 6 | 29.514 | 1 |
| JOURNAL OF ARTHROPLASTY | 2.515 | 1 | 2.515 | 1 |
| JOURNAL OF BIOMEDICAL NANOTECHNOLOGY | 3.929 | 1 | 3.929 | 1 |
| JOURNAL OF CARDIAC SURGERY | 0.783 | 2 | 1.566 | 4 |
| JOURNAL OF CELLULAR AND MOLECULAR MEDICINE | 4.938 | 1 | 4.938 | 1 |
| JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY | 6.615 | 1 | 6.615 | 1 |
| JOURNAL OF CLINICAL LIPIDOLOGY | 4.906 | 1 | 4.906 | 1 |
| JOURNAL OF CLINICAL MICROBIOLOGY | 3.631 | 7 | 25.417 | 2 |
| JOURNAL OF CLINICAL ONCOLOGY | 20.982 | 5 | 104.910 | 1 |
| JOURNAL OF CLINICAL PSYCHIATRY | 5.408 | 1 | 5.408 | 1 |
| JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY | 3.000 | 1 | 3.000 | 2 |
| JOURNAL OF CLINICAL VIROLOGY | 2.647 | 1 | 2.647 | 2 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|--|---------------|----------|---------------|----------|
| JOURNAL OF CONTROLLED RELEASE | 7.441 | 1 | 7.441 | 1 |
| JOURNAL OF CRITICAL CARE | 2.445 | 2 | 4.890 | 3 |
| JOURNAL OF CROHNS & COLITIS | 6.585 | 1 | 6.585 | 1 |
| JOURNAL OF EMERGENCY MEDICINE | 1.048 | 1 | 1.048 | 3 |
| JOURNAL OF EVALUATION IN CLINICAL PRACTICE | 1.053 | 1 | 1.053 | 3 |
| JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY | 3.322 | 1 | 3.322 | 2 |
| JOURNAL OF GERIATRIC CARDIOLOGY | 1.393 | 1 | 1.393 | 3 |
| JOURNAL OF HEPATOLOGY | 10.590 | 2 | 21.180 | 1 |
| JOURNAL OF HOSPITAL INFECTION | 2.655 | 1 | 2.655 | 2 |
| JOURNAL OF HYPERTENSION | 5.062 | 1 | 5.062 | 1 |
| JOURNAL OF IMMUNOLOGY RESEARCH | 2.812 | 1 | 2.812 | 3 |
| JOURNAL OF INFECTION | 4.382 | 5 | 21.910 | 1 |
| JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY | 2.131 | 1 | 2.131 | 3 |
| JOURNAL OF LEUKOCYTE BIOLOGY | 4.165 | 1 | 4.165 | 1 |
| JOURNAL OF MACHINE LEARNING RESEARCH | 2.450 | 1 | 2.450 | 1 |
| JOURNAL OF MANIPULATIVE AND PHYSIOLOGICAL THERAPEUTICS | 1.329 | 1 | 1.329 | 3 |
| JOURNAL OF MEDICAL GENETICS | 5.650 | 1 | 5.650 | 1 |
| JOURNAL OF NEUROIMAGING | 1.625 | 1 | 1.625 | 3 |
| JOURNAL OF NEUROSCIENCE | 5.924 | 1 | 5.924 | 1 |
| JOURNAL OF NEUROSCIENCE NURSING | 0.724 | 1 | 0.724 | 3 |
| JOURNAL OF NUCLEAR MEDICINE | 5.849 | 1 | 5.849 | 1 |
| JOURNAL OF PARENTERAL AND ENTERAL NUTRITION | 3.517 | 1 | 3.517 | 2 |
| JOURNAL OF PATHOLOGY | 7.381 | 1 | 7.381 | 1 |
| JOURNAL OF PEDIATRICS | 3.890 | 1 | 3.890 | 1 |
| JOURNAL OF PHYSIOLOGY-LONDON | 4.731 | 1 | 4.731 | 1 |
| JOURNAL OF PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY | 1.743 | 1 | 1.743 | 2 |

| Journal | IF | No. | Sum of IF | Q |
|---|---------------|----------|---------------|----------|
| JOURNAL OF PSYCHIATRIC RESEARCH | 4.465 | 2 | 8.930 | 1 |
| JOURNAL OF RENAL NUTRITION | 2.060 | 1 | 2.060 | 2 |
| JOURNAL OF RHEUMATOLOGY | 3.236 | 3 | 9.708 | 2 |
| JOURNAL OF SEXUAL MEDICINE | 2.844 | 1 | 2.844 | 2 |
| JOURNAL OF SMALL ANIMAL PRACTICE | 0.976 | 1 | 0.976 | 2 |
| JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY | 7.182 | 3 | 21.546 | 1 |
| JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY | 5.621 | 3 | 16.863 | 1 |
| JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY | 17.759 | 3 | 53.277 | 1 |
| JOURNAL OF THE AMERICAN HEART ASSOCIATION | 5.117 | 1 | 5.117 | 1 |
| JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY | 3.494 | 1 | 3.494 | 1 |
| JOURNAL OF THROMBOSIS AND HAEMOSTASIS | 5.565 | 1 | 5.565 | 1 |
| JOURNAL OF THROMBOSIS AND THROMBOLYSIS | 1.884 | 1 | 1.884 | 3 |
| JOURNAL OF TRANSLATIONAL MEDICINE | 3.694 | 1 | 3.694 | 1 |
| JOURNAL OF ULTRASOUND IN MEDICINE | 1.544 | 4 | 6.176 | 2 |
| JOURNAL OF UROLOGY | 4.700 | 1 | 4.700 | 1 |
| JOURNAL OF VASCULAR SURGERY-VENOUS AND LYMPHATIC DISORDERS | 0.833 | 1 | 0.833 | 4 |
| JOURNAL OF VIROLOGY | 4.606 | 1 | 4.606 | 1 |
| JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES | 5.476 | 3 | 16.428 | 1 |
| KOREAN JOURNAL OF RADIOLOGY | 1.592 | 1 | 1.592 | 3 |
| LANCET | 44.002 | 1 | 44.002 | 1 |
| LANCET INFECTIOUS DISEASES | 21.372 | 1 | 21.372 | 1 |
| LANCET ONCOLOGY | 26.509 | 2 | 53.018 | 1 |
| LANCET PSYCHIATRY | 5.756 | 1 | 5.756 | 1 |
| LANCET RESPIRATORY MEDICINE | 15.328 | 1 | 15.328 | 1 |
| LEUKEMIA & LYMPHOMA | 3.093 | 2 | 6.186 | 2 |
| LIVER INTERNATIONAL | 4.470 | 1 | 4.470 | 1 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|--|---------------|----------|---------------|----------|
| LIVER TRANSPLANTATION | 3.951 | 1 | 3.951 | 1 |
| LUNG | 2.000 | 1 | 2.000 | 3 |
| LUPUS | 2.118 | 1 | 2.118 | 3 |
| MANUAL THERAPY | 1.869 | 1 | 1.869 | 1 |
| MATHEMATICAL PROBLEMS IN ENGINEERING | 0.644 | 1 | 0.644 | 3 |
| MEDICAL MYCOLOGY | 2.644 | 1 | 2.644 | 1 |
| MEDICAL PHYSICS | 2.496 | 1 | 2.496 | 2 |
| MEDICAL ULTRASONOGRAPHY | 1.167 | 1 | 1.167 | 4 |
| MEDICINA CLINICA | 1.267 | 4 | 5.068 | 2 |
| MEDICINA INTENSIVA | 1.193 | 2 | 2.386 | 4 |
| MEDICINE | 1.206 | 8 | 9.648 | 3 |
| MOLECULAR AND CELLULAR ENDOCRINOLOGY | 3.859 | 1 | 3.859 | 2 |
| MOLECULAR DIAGNOSIS & THERAPY | 2.602 | 1 | 2.602 | 2 |
| MOLECULAR GENETICS AND METABOLISM | 3.093 | 2 | 6.186 | 2 |
| MOLECULAR ONCOLOGY | 5.367 | 1 | 5.367 | 1 |
| MOVEMENT DISORDERS | 6.010 | 1 | 6.010 | 1 |
| MUCOSAL IMMUNOLOGY | 6.103 | 1 | 6.103 | 1 |
| MYCOSSES | 2.332 | 2 | 4.664 | 2 |
| NANOMEDICINE | 4.889 | 1 | 4.889 | 1 |
| NANOMEDICINE-NANOTECHNOLOGY BIOLOGY AND MEDICINE | 5.671 | 2 | 11.342 | 1 |
| NANOSCALE | 7.760 | 2 | 15.520 | 1 |
| NANOTECHNOLOGY | 3.573 | 1 | 3.573 | 1 |
| NATURE COMMUNICATIONS | 11.329 | 1 | 11.329 | 1 |
| NEFROLOGIA | 1.207 | 1 | 1.207 | 4 |
| NEPHROLOGY | 1.796 | 1 | 1.796 | 3 |
| NEPHROLOGY DIALYSIS TRANSPLANTATION | 4.085 | 2 | 8.170 | 1 |
| NETHERLANDS HEART JOURNAL | 2.062 | 1 | 2.062 | 3 |

| Journal | IF | No. | Sum of IF | Q |
|--|---------------|----------|---------------|----------|
| NEUROCIRUGIA | 0.410 | 2 | 0.820 | 4 |
| NEUROGASTROENTEROLOGY AND MOTILITY | 3.310 | 3 | 9.930 | 2 |
| NEUROLOGIA | 1.790 | 3 | 5.370 | 3 |
| NEUROLOGY | 8.166 | 1 | 8.166 | 1 |
| NEUROSCIENCE AND BIOPHYSICAL REVIEWS | 8.580 | 1 | 8.580 | 1 |
| NEUROSCIENCE LETTERS | 2.107 | 1 | 2.107 | 3 |
| NEW ENGLAND JOURNAL OF MEDICINE | 59.558 | 1 | 59.558 | 1 |
| NOTFALL & RETTUNGSMEDIZIN | 0.319 | 1 | 0.319 | 4 |
| NUTRICION HOSPITALARIA | 1.497 | 11 | 16.467 | 4 |
| NUTRITION | 2.839 | 1 | 2.839 | 2 |
| OBESITY SURGERY | 3.346 | 2 | 6.692 | 1 |
| ONCOLOGIST | 4.789 | 2 | 9.578 | 1 |
| ONCOTARGET | 5.008 | 1 | 5.008 | 1 |
| ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH | 1.393 | 1 | 1.393 | 3 |
| PAIN PRACTICE | 2.317 | 2 | 4.634 | 2 |
| PARALLEL COMPUTING | 1.000 | 2 | 2.000 | 3 |
| PATIENT-PATIENT CENTERED OUTCOMES RESEARCH | 2.227 | 1 | 2.227 | 2 |
| PATTERN RECOGNITION | 3.399 | 2 | 6.798 | 1 |
| PEDIATRIC CARDIOLOGY | 1.452 | 2 | 2.904 | 3 |
| PEDIATRIC DERMATOLOGY | 1.163 | 2 | 2.326 | 3 |
| PEDIATRIC EMERGENCY CARE | 0.923 | 2 | 1.846 | 3 |
| PEDIATRIC INFECTIOUS DISEASE JOURNAL | 2.587 | 1 | 2.587 | 1 |
| PERITONEAL DIALYSIS INTERNATIONAL | 1.298 | 1 | 1.298 | 3 |
| PERSONALITY AND INDIVIDUAL DIFFERENCES | 1.946 | 1 | 1.946 | 2 |
| PHARMACOGENOMICS | 2.710 | 1 | 2.710 | 2 |
| PHARMACOGENOMICS JOURNAL | 3.784 | 1 | 3.784 | 1 |
| PHYSICS IN MEDICINE AND BIOLOGY | 2.811 | 1 | 2.811 | 1 |

(Continued on next page)

| Journal | IF | No. | Sum of IF | Q |
|---|-------|-----|-----------|---|
| PLATELETS | 3.213 | 1 | 3.213 | 2 |
| PLOS ONE | 3.057 | 21 | 64.197 | 1 |
| PROGRESS IN NEURO-PSYCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY | 4.361 | 1 | 4.361 | 1 |
| PSICOTHEMA | 1.245 | 1 | 1.245 | 2 |
| PSYCHIATRY RESEARCH | 2.466 | 1 | 2.466 | 2 |
| RADIATION PROTECTION DOSIMETRY | 0.894 | 2 | 1.788 | 3 |
| RADIOSURGERY AND ONCOLOGY | 4.817 | 1 | 4.817 | 1 |
| RELIABILITY ENGINEERING & SYSTEM SAFETY | 2.498 | 1 | 2.498 | 1 |
| RESPIRATORY CARE | 1.922 | 1 | 1.922 | 3 |
| RESUSCITATION | 5.414 | 2 | 10.828 | 1 |
| REVISTA CLINICA ESPANOLA | 0.760 | 1 | 0.760 | 3 |
| REVISTA DE NEUROLOGIA | 0.684 | 3 | 2.052 | 4 |
| REVISTA DE PSIQUIATRIA Y SALUD MENTAL | 1.650 | 2 | 3.300 | 3 |
| REVISTA ESPANOLA DE CARDIOLOGIA | 4.596 | 9 | 41.364 | 1 |
| REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS | 1.455 | 4 | 5.820 | 4 |
| REVISTA ESPANOLA DE QUIMIOTERAPIA | 1.014 | 2 | 2.028 | 4 |
| REVISTA PANAMERICANA DE SALUD PUBLICA-PAN AMERICAN JOURNAL OF PUBLIC HEALTH | 0.747 | 1 | 0.747 | 4 |
| REVUE NEUROLOGIQUE | 0.955 | 1 | 0.955 | 4 |
| RHEUMATOLOGY | 4.524 | 3 | 13.572 | 1 |
| RHEUMATOLOGY INTERNATIONAL | 1.702 | 2 | 3.404 | 3 |
| RSC ADVANCES | 3.289 | 2 | 6.578 | 2 |
| SALUD MENTAL | 0.269 | 1 | 0.269 | 4 |
| SCANDINAVIAN JOURNAL OF INFECTIOUS DISEASES | 1.366 | 1 | 1.366 | 4 |
| SCHIZOPHRENIA BULLETIN | 7.757 | 7 | 54.299 | 1 |
| SCHIZOPHRENIA RESEARCH | 4.453 | 6 | 26.718 | 1 |
| SCIENTIFIC REPORTS | 5.228 | 3 | 15.684 | 1 |

| Journal | IF | No. | Sum of IF | Q |
|--|--------|------------|----------------|---|
| SEMINARS IN THROMBOSIS AND HEMOSTASIS | 3.505 | 1 | 3.505 | 1 |
| SIMULATION MODELLING PRACTICE AND THEORY | 1.482 | 2 | 2.964 | 1 |
| SLEEP AND BREATHING | 2.332 | 1 | 2.332 | 2 |
| SOCIAL PSYCHIATRY AND PSYCHIATRIC EPIDEMIOLOGY | 2.513 | 1 | 2.513 | 2 |
| STATISTICAL METHODS AND APPLICATIONS | 0.375 | 1 | 0.375 | 4 |
| STATISTICS | 0.530 | 1 | 0.530 | 4 |
| STATISTICS AND COMPUTING | 1.786 | 1 | 1.786 | 1 |
| STEM CELL RESEARCH | 3.892 | 1 | 3.892 | 1 |
| STRÄHLENTERAPIE UND ONKOLOGIE | 2.898 | 2 | 5.796 | 1 |
| STROKE | 5.787 | 1 | 5.787 | 1 |
| SUPPORTIVE CARE IN CANCER | 2.535 | 1 | 2.535 | 1 |
| SURGICAL ONCOLOGY-OXFORD | 3.514 | 1 | 3.514 | 1 |
| TARGETED ONCOLOGY | 3.197 | 1 | 3.197 | 2 |
| TECHNOMETRICS | 1.435 | 1 | 1.435 | 2 |
| THERAPEUTIC APHERESIS AND DIALYSIS | 1.477 | 1 | 1.477 | 3 |
| TRANSLATIONAL CANCER RESEARCH | 1.757 | 1 | 1.757 | 4 |
| TRANSPLANT INFECTIOUS DISEASE | 1.459 | 2 | 2.918 | 3 |
| TRANSPLANT INTERNATIONAL | 2.835 | 1 | 2.835 | 1 |
| TRANSPLANTATION PROCEEDINGS | 0.867 | 1 | 0.867 | 3 |
| TRENDS IN BIOTECHNOLOGY | 12.065 | 1 | 12.065 | 1 |
| TRIALS | 1.859 | 1 | 1.859 | 3 |
| VALUE IN HEALTH | 3.824 | 2 | 7.648 | 1 |
| VETERINARY MICROBIOLOGY | 2.564 | 1 | 2.564 | 2 |
| WORLD JOURNAL OF GASTROENTEROLOGY | 2.787 | 1 | 2.787 | 2 |
| WORLD JOURNAL OF PEDIATRICS | 1.025 | 1 | 1.025 | 3 |
| WORLD JOURNAL OF UROLOGY | 2.397 | 1 | 2.397 | 2 |
| WOUND REPAIR AND REGENERATION | 2.628 | 1 | 2.628 | 1 |
| General Total | | 631 | 2.588.5 | |

LETTERS AND PUBLICATIONS NOT TAKEN INTO ACCOUNT FOR THE IMPACT FACTOR

| Journal | No. |
|--|-----|
| 2015 37TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY (EMBC) | 1 |
| 2015 IEEE INT. SYMP. INF. THEORY (ISIT 2015) | 1 |
| 2015 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING (ICASSP) | 1 |
| 23TH EUROPEAN SIGNAL PROCESSING CONFERENCE (EUSIPCO 2015) | 1 |
| 42TH COMPUTING IN CARDIOLOGY | 1 |
| A & A CASE REPORTS | 1 |
| ACTA PAEDIATRICA | 1 |
| ADICCIONES | 1 |
| ADVANCES IN NEURAL INFORMATION PROCESSING | 1 |
| AFRICAN JOURNAL OF PAEDIATRIC SURGERY : AJPS | 1 |
| ALLERGOLOGIA ET IMMUNOPATHOLOGIA | 1 |
| ANALES DE PEDIATRIA | 5 |
| ANGIOLOGIA | 2 |
| ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY | 1 |
| ANNALS OF PLASTIC SURGERY | 1 |
| ANTIBIOTICS-BASEL | 1 |
| ARBOR-CIENCIA PENSAMIENTO Y CULTURA | 2 |
| ARCHIVOS ARGENTINOS DE PEDIATRIA | 1 |
| ARCHIVOS DE BRONCONEUMOLOGIA | 3 |
| ARS PHARMACEUTICA | 1 |
| ARTHRITIS & RHEUMATOLOGY | 1 |
| ASIAN CARDIOVASCULAR & THORACIC ANNALS | 1 |
| BIPHOTONICS SOUTH AMERICA | 1 |
| BOLETIN DE PEDIATRIA | 1 |
| BONE MARROW TRANSPLANTATION | 1 |

| Journal | No. |
|---|-----|
| BRAIN | 1 |
| BRITISH JOURNAL OF DERMATOLOGY | 1 |
| BRITISH JOURNAL OF HAEMATOLOGY | 1 |
| CARDIAC ELECTROPHYSIOLOGY CLINICS | 1 |
| CIRCULATION | 1 |
| CIRUGIA ESPANOLA | 1 |
| CLINICAL INFECTIOUS DISEASES | 1 |
| COLORECTAL CANCER | 1 |
| EMERGENCIAS | 3 |
| EMERGING INFECTIOUS DISEASES | 1 |
| ENDOCRINOLOGIA Y NUTRICION | 4 |
| ENFERMEDADES INFECTIOSAS Y MICROBIOLOGIA CLINICA | 2 |
| EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE | 5 |
| EUROPEAN JOURNAL OF ANAESTHESIOLOGY | 1 |
| EUROPEAN JOURNAL OF DERMATOLOGY | 2 |
| EUROPEAN RESPIRATORY JOURNAL | 1 |
| EUROPEAN SIGNAL PROCESSING CONFERENCE | 2 |
| HAEMATOLOGICA | 2 |
| HEART, LUNG AND VESSELS | 1 |
| IEEE 2015 INTERNATIONAL SIMPOSUM ON INFORMATION THEORY | 2 |
| IEEE CONFERENCE ON SIGNALS, SYSTEMS, AND COMPUTERS (ASILOMAR 2015) | 1 |
| IEEE GLOBECOM | 1 |
| IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP 2015) | 4 |
| IEEE INTERNATIONAL WORKSHOP ON COMPUTATIONAL ADVANCES IN MULTI-SENSOR ADAPTIVE PROCESSING (CAMSAP 2015) | 1 |
| INFORMATION THEORY AND APPLICATIONS | 1 |
| INTERNATIONAL CONFERENCE ON INTERNET OF THINGS | 1 |

(Continued on next page)

| Journal | No. |
|--|-----|
| INTERNATIONAL JOURNAL OF CARDIOLOGY | 2 |
| JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES | 1 |
| JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE | 2 |
| JOURNAL OF CLINICAL PSYCHIATRY | 1 |
| JOURNAL OF ENVIRONMENTAL INFORMATICS | 1 |
| JOURNAL OF QUANTITATIVE ANALYSIS OF SPORTS | 1 |
| JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY | 4 |
| LANCET | 1 |
| MEDICINA CLINICA | 2 |
| NEFROLOGIA | 1 |
| NEUROLOGIA | 4 |
| NEW ENGLAND JOURNAL OF MEDICINE | 1 |
| NEW MICROBES AND NEW INFECTIONS | 1 |
| NIPS WORKSHOP ON "MACHINE LEARNING FOR COMPUTATIONAL BIOLOGY" | 1 |
| NIPS WORKSHOP ON "MACHINE LEARNING FOR HEALTHCARE WORKSHOP" | 1 |
| NIPS WORKSHOP ON BAYESIAN NON-PARAMETRIC: THE NEXT GENERATION | 1 |
| NUTRICION HOSPITALARIA | 1 |
| OPHTHALMOLOGY | 1 |
| PERITONEAL DIALYSIS INTERNATIONAL | 1 |
| PLASTIC AND RECONSTRUCTIVE SURGERY. GLOBAL OPEN | 1 |
| PROC. OF IEEE CAMSAP | 1 |
| PROC. OF THE 23RD EUROPEAN SIGNAL PROCESSING CONFERENCE (EUSIPCO'2015) | 1 |
| REVISTA CLINICA ESPANOLA | 2 |
| REVISTA DE CALIDAD ASISTENCIAL : ORGANO DE LA SOCIEDAD ESPANOLA DE CALIDAD ASISTENCIAL | 1 |
| REVISTA DE NEUROLOGIA | 1 |
| REVISTA ESPAÑOLA DE CARDIOLOGIA | 2 |
| REVISTA ESPAÑOLA DE ENFERMEDADES DIGESTIVAS | 2 |

| Journal | No. |
|--|------------|
| SCALABLE COMPUTING-PRACTICE AND EXPERIENCE | 2 |
| STRABISMUS | 1 |
| STUDIES IN HEALTH TECHNOLOGY AND INFORMATICS | 2 |
| THE OPEN ORTHOPAEDICS JOURNAL | 2 |
| TRANSPLANT INFECTIOUS DISEASE | 1 |
| WORLD JOURNAL OF CARDIOLOGY | 1 |
| WORLD JOURNAL OF GASTROINTESTINAL ONCOLOGY | 1 |
| WORLD JOURNAL OF NEPHROLOGY | 1 |
| WORLD JOURNAL OF STEM CELLS | 1 |
| Total | 127 |

In-house training: courses, seminars, and one-day training seminars

During 2015, the IISGM Training Committee continued working to detect specific training needs (by means of a needs analysis questionnaire). Needs were analyzed and priorities established, and the various trainings included in the 2015 Annual Training Plan (<http://www.iisgm.com/documentacion/plan-formacion/>) were planned and given. In most cases, training organized by IISGM is certified by the Committee for Continuing Training Activity of the Autonomous Community of Madrid.

In 2015, as part of its Training Plan, the IISGM developed the second edition of its *Course on Methodology of Biomedical Research*, which comprises 4 modules, each lasting 80 hours. The course covers all aspects of research from the research question to the publication of the results of research and analysis of results using. Results were analyzed using the statistical package R. The course was aimed mainly at researchers in training and was offered to the different research areas so that the most appropriate candidates could be matched to the course.

Similarly, the third edition of the *Course on Instrumental Techniques in Biomedical Research* was developed with the aim of training researchers in the main instrumental techniques and the different research platforms available in IISGM.

The first edition of the *Advanced Course on Fluorescence-Based Imaging Techniques* was held to train participants in the various experimental techniques aimed at identifying cell markers and/or cell populations using fluorescent labels. The course comprised a theoretical module, given by experts in each of the techniques, and a practical module, which was held at the facility of the Innovation Support Service of IISGM.

In 2015, the Institute held 3 courses in animal experimentation to cover the training needs of IISGM research staff. Category B (certification for staff carrying out research procedures with animals), Category C (Head of Design and Management of Procedures With Animals), and a bridging course for staff moving from Category B to Category C were held in parallel. The first 2 courses were "hands-on", with animals, and the third was completed online.

Every year, the IISGM holds its 1-day training courses on research and innovation. These courses provide the Institute with an opportunity to let the scientific community know about the research activity being carried out at the center. The key objective of the *Fifth Research and Innovation Seminar* was to present the financial and scientific results of IISGM and to pay tribute to the work of its

researchers. The occasion presents researchers with the opportunity to show the results of their individual research lines. Initially, the occasion served to present the structure of the IISGM, although the format of the sessions has evolved over the years. All the research areas and groups in the IISGM now have a forum where all the Institute's researchers can come together. Participation is open, and any researcher can send the best scientific articles from each research area and the Nursing Area to be selected by a judging committee that awards prizes to the best entries. The Institute has also organized round tables in which researchers can show their experience collaborating with the research platforms.

Detailed information on these annual courses and seminars can be found at the following link:

- <http://www.iisgm.com/actualidad/convocatorias-y-formacion/>

During 2015, the IISGM consolidated the development of its *Research Seminars*. These have been held weekly since they were designed in 2014 to bring together topics in basic research (*Lab Meetings*), clinical research, and practical aspects of research. Guest speakers can be invited to speak at these sessions.

The Nursing Research Support Unit (UAIE) usually coordinates a series annual training activities depending on the funds available. The activities include the following:

- **Courses:** Public Speaking (22 hours); Basic Research, Design and Development of Research Studies (25 hours); Introduction to Bibliographic Searching and Information Resources in Health Sciences (20 hours); Can Scientific Evidence Change Care Practice? (20 hours); Applied Statistics for Health Sciences: SPSS (20 hours); Critical Reading of Clinical Research Articles (15 hours); Qualitative Research (20 hours).
- **Workshops:** Bibliographic Searching and Reference Management software (6 hours); Creation of Databases in Access (2.5 hours); How to Write a Scientific Article (2 workshops, 5 hours each); Critical Reading: Cohort Studies, Clinical Trials, and Systematic Reviews (each workshop, 3 hours).

During 2015, the IISGM joined with FECYT to organize 2 classroom-based workshops to train participants in the use of **Web of Science (Basic and Advanced)**. This enabled researchers from IISGM to become familiar with the functions and latest advances in this database.

Clinical practice guidelines

A key challenge of biomedical research is to ensure a smooth and efficient transfer of the knowledge generated from research activity to clinical practice. One of the ways this concept becomes a reality is through clinical practice guidelines.

The place of the IISGM in the field of clinical research is clear. The Institute aims to ensure the full commitment of its researchers in the development of this key activity.

The 63 clinical practice guidelines in which researchers from the IISGM participated during 2015 are set out in detail below.



| CLINICAL PRACTICE GUIDELINES 2015 | | | |
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| Authors | Title | PUBLICATION | Area |
| Navarrete BA; Casanova C; Miravitles M; de Lucas P; Riesco JA; González-Moro JMR | "Correct Use of Inhaled Corticosteroids in Chronic Obstructive Pulmonary Disease": A Consensus Document | ARCHIVOS DE BRONCONEUMOLOGÍA | 7 |
| Baquero-Artigao F, Mellado Peña MJ, Del Rosal Rabes T, Noguera Julián A, Gonçé Mellgren A, de la Calle Fernández-Miranda M, Navarro Gómez ML | [Spanish Society for Pediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (i)] Epidemiology and diagnosis. Congenital tuberculosis | ANALES DE PEDIATRÍA | 5 |
| Habib G, Lancellotti P, Antunes MJ, Bongiorni MG, Casalta JP, Del Zotti F, Dulgheru R, El Khoury G, Erba PA, Iung B, Miro JM, Mulder BJ, Plonska-Gosciniak E, Price S, Roos-Hesselink J, Snygg-Martin U, Thuny F, Tornos Mas P, Vilacosta I, Zamorano JL; Document Reviewers, Erol Ç, Nihoyannopoulos P, Aboyans V, Agewall S, Athanassopoulos G, Aytekin S, Benzer W, Bueno H, Broekhuizen L, Carerj S, Cosyns B, De Backer J, De Bonis M, Dimopoulos K, Donal E, Drexel H, Flachskampf FA, Hall R, Halvorsen S, Hoen B, Kirchhof P, Lainscak M, Leite-Moreira AF, Lip GY, Mestres CA, Piepoli MF, Punjabi PP, Rapezzi C, Rosenhek R, Siebens K, Tamargo J, Walker DM | 2015 ESC Guidelines for the management of infective endocarditis: The Task Force for the Management of Infective Endocarditis of the European Society of Cardiology (ESC). Endorsed by: European Association for Cardio-Thoracic Surgery (EACTS), the European Association of Nuclear Medicine (EANM). | EUROPEAN HEART JOURNAL | 2 |
| Espinel-Ingroff A, Colombo A. L., Cordoba S., Dufresne P. J., Fuller J., Ghannoum M., Gonzalez G. M., Guarro J., Kidd S. E., Meis J. F., Melhem T. M., Pelaez T., Pfaller M. A., Szesz M. W., Takahashi J. P., Tortorano A. M., Wiederhold N. P., Turnidge | An international evaluation of MIC distributions and ECV definition for <i>Fusarium</i> species identified by molecular methods for the CLSI broth microdilution method | ANTIMICROBIAL AGENTS AND CHEMOTHERAPY | 4 |

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| Authors | Title | PUBLICATION | Area |
| Moreno-Perez D; Martin AA; Garcia AT; Montaner AE; Mulet JF; Garcia JJG; Moreno-Galdo A; de Lliria CRG; Lozano JS | Community acquired pneumonia: treatment of complicated cases and special situations. Consensus document of the Spanish Society of Pediatric Infectious Diseases (PFIC) and Spanish Society of Pediatric Pneumology (SENP) | ANALES DE PEDIATRÍA | 5 |
| Echeverria-Zudaire LA; Castillo LO; Alonso-Lebrero E; Alvarez-Garcia FJ; Cortes-Alvarez N; Garcia-Sanchez N; Martorell-Aragonés A | Consensus document on the approach to children with allergic reactions after vaccination or allergy to vaccine components | ALLERGOLOGIA ET IMMUNOPATHOLOGIA | 5 |
| Gudiol F; Aguado JM; Almirante B; Bouza E; Cercenado E; Dominguez MA; Gasch O; Lora-Tamayo J; Miro JM; Palomar M; Pascual A; Pericas JM; Pujol M; Rodriguez-Bano J; Shaw E; Soriano A; Valles J | Diagnosis and treatment of bacteremia and endocarditis due to <i>Staphylococcus aureus</i> . A clinical guideline from the Spanish Society of Clinical Microbiology and Infectious Diseases (SEIMC) | ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA | 4 |
| Juan Berenguer, Rosa Polo | Documento de consenso de GeSIDA/Plan Nacional sobre el Sida respecto al tratamiento antirretroviral en adultos con infección por el virus de la inmunodeficiencia humana | GESIDA | 4 |
| Navarro Gómez ML | Documento de Consenso sobre alteraciones Psiquiátricas y psicológicas en el adulto y en el niño con infección por el VIH | MINISTERIO DE SANIDAD, SERVICIOS SOCIALES E IGUALDAD | 5 |
| Juan Berenguer Berenguer | Documento del II Consenso español sobre tratamiento de la hepatitis C | ASOCIACIÓN ESPAÑOLA PARA EL ESTUDIO DEL HÍGADO (AEEH) | 4 |
| Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D | European Resuscitation Council Guidelines for Resuscitation 2015 Section 6. Paediatric life support | RESUSCITATION | 7 |

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| Authors | Title | PUBLICATION | Area |
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| Rosano GM, Lewis B, Agewall S, Wassmann S, Vitale C, Schmidt H, Drexel H, Patak A, Torp-Pedersen C, Kjeldsen KP, Tamargo J | Gender differences in the effect of cardiovascular drugs: a position document of the Working Group on Pharmacology and Drug Therapy of the ESC. | EUROPEAN HEART JOURNAL | 2 |
| Editor: Carlos Delgado. Colaboradores: María Mayoral, Ana Espielgo, Lucía Torres, Begoña Cerón, Laura Roldán, Ana Calvo, Lara Kehrmann, Elisa Rodríguez, María Reche | Guia ATraPA: Acciones para el Tratamiento de la Personalidad en la Adolescencia | ISBN: 978-84-606-8374-2 | 3 |

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| CLINICAL PRACTICE GUIDELINES 2015 (Cont.) | | | |
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| Authors | Title | PUBLICATION | Area |
| Coordinadores: Celso Arango, David Fraguas, Josefina Castro-Fornieles. Colaboradores: Dra. Inmaculada Baeza, Sara Barbeito , Montserrat Dolz, Alberto Fernández Jaén, Aranzazu Fernández Rivas, Montserrat Graell, Carlos Imaz Roncero, Carmen Moreno Ruiz, Beatriz Payá González, Sonia Ruiz de Azúa | Guía clínica y terapéutica para primeros episodios psicóticos en la infancia y adolescencia. | ISBN: 978-84-606-6300-3 | 3 |
| Elena Cela de Julián | Guía de práctica clínica Talasemia en pediatría | ISBN 978-84-938864-9-3 | 6 |
| Begoña Ezquieta | Guía de Rasopatías | SOCIEDAD ESPAÑOLA DE ENDOCRINOLOGÍA PEDIÁTRICA | 7 |
| Dr. Emilio Alba, Dr. Antonio Antón, Dr. Agustí Barnadas, Dr. Enrique Barrajón, Dra. Isabel Blancas, Dra. Eva Carrasco, Dra. Ana Casas, Dr. Antonio González, Dr. Juan Lao, Dra. Ana Lluch, Dra. Sara López Tarruella, Dr. Miguel Martín, Dra. Montse Muñoz, Dr. Ricardo Sánchez Escribano, Sr. Ivan Solà. | Guía GEICAM para el diagnóstico y tratamiento del Cáncer de Mama Metastásico | GEICAM | 6 |
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| Valerio M; Vena A; Bouza E; Reiter N; Viale P; Hochreiter M; Giannella M; Munoz P | How much European prescribing physicians know about invasive fungal infections management? | BMC INFECTIOUS DISEASES | 4 |
| Gutierrez M; Schmidt WA; Thiele RG; Keen HI; Kaeley GS; Naredo E; Iagnocco A; Bruyn GA; Balint PV; Filippucci E; Mandl P; Kane D; Pineda C; Delle Sedie A; Hammer HB; Christensen R; D'Agostino MA; Terslev L | International Consensus for ultrasound lesions in gout: results of Delphi process and web-reliability exercise | RHEUMATOLOGY (OXFORD) | 5 |

| CLINICAL PRACTICE GUIDELINES 2015 (Cont.) | | | |
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| Authors | Title | PUBLICATION | Area |
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| Vanessa Pachón Olmos, María José Ramos Gallo, Maite Antonio Rebollo, Dolores Ballesteros Ortega, Lara Iglesias Docampo, Antonio Romera-Villegas, Enrique Gallardo Díaz, Andrés Muñoz Martín | Manejo de la enfermedad tromboembólica venosa en pacientes oncológicos: guías de práctica clínica española. Consenso SEACV-SEOM | MEDICINA CLÍNICA | 6 |
| Juan Berenguer, Jorge Carmena, Ma Ángeles Castro, Juan González, Josep Ma Guardiola, Pablo Labarga, Montse Laguno, Juan Macías, Andrés Marco, Luz Martín-Carbonero, Josep Mallolas, Pilar Miralles, José Moltó, Ma Luisa Montes, Javier Murillas, Enrique Ortega, Juan A Pineda, Carmen Quereda, Antonio Rivero, Antoni Rimola, Ignacio de los Santos, Ma Jesús Téllez, Cristina Tural, Eva van den Eynde | Manejo de las hepatitis virales en pacientes infectados por el VIH. Guía de Práctica Clínica de GeSida. | GESIDA | 4 |
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| Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D | Paediatric Life Support (PLS) | NOTFALL & RETTUNGSMEDIZIN | 7 |
| Coordinadoras: Ana María Ruiz Sancho, María Mayoral Aragón. Colaboradores: Ana Belén Calvo Calvo, Lara Kehrmann Irisarri, Carmen Moreno Ruiz, Miguel Moreno Íñiguez, Marta Rapado Castro, Teresa Sánchez Gutiérrez | PIENSA: Guía para adolescentes y familias que quieren entender y afrontar la psicosis. | ISBN: 978-84-606-6643-1 | 3 |
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| Saavedra-Lozano J, Calvo C, Huguet Carol R, Rodrigo C, Núñez E, Pérez C, Merino R, Rojo P, Obando I, Downey FJ, Colino E, García JJ, Cilleruelo MJ, Torner F, García L | SEIP-SERPE-SEOP Consensus Document on aetiopathogenesis and diagnosis of uncomplicated acute osteomyelitis and septic arthritis | ANALES DE PEDIATRÍA | 5 |
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| CLINICAL PRACTICE GUIDELINES 2015 (Cont.) | | | |
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| Gavila J; Lopez-Tarruella S; Saura C; Munoz M; Oliveira M; De la Cruz-Merino L; Morales S; Alvarez I; Virizuela JA; Martin M | SEOM clinical guidelines in metastatic breast cancer 2015 | CLINICAL & TRANSLATIONAL ONCOLOGY | 6 |
| Rodriguez CA; Martin M | SEOM Guidelines 2015: a new era in the collaboration with the Spanish Cancer Research Cooperative Groups | CLINICAL & TRANSLATIONAL ONCOLOGY | 6 |
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| Fernandez-Cruz A, Cruz Menarguez M, Munoz P, Pedromingo M, Pelaez T, Solis J, Rodriguez-Creixems M, Bouza E | The search for endocarditis in patients with candidemia: a systematic recommendation for echocardiography? A prospective cohort | EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES | 4 |
| Lancellotti P; Price S; Edvardsen T; Cosyns B; Neskovic AN; Dulgheru R; Flachskampf FA; Hassager C; Pasquet A; Gargani L; Galderisi M; Cardim N; Haugaa KH; Ancion A; Zamorano JL; Donal E; Bueno H; Habib G | The use of echocardiography in acute cardiovascular care: Recommendations of the European Association of Cardiovascular Imaging and the Acute Cardiovascular Care Association | EUROPEAN HEART JOURNAL-CARDIOVASCULAR IMAGING | 2 |

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| Authors | Title | PUBLICATION | Area |
| Valerio M, Munoz P, Rodriguez-Gonzalez C, Sanjurjo M, Guinea J, Bouza E. | Training should be the first step toward an antifungal stewardship program | ENFERMEDADES INFECCIOSAS Y MICROBIOLOGÍA CLÍNICA | 4 |
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| Climent MA; Leon-Mateos L; del Alba AG; Perez-Valderrama B; Mendez-Vidal MJ; Mellado B; Arranz JA; Sanchez-Hernandez A; Cassinello J; Olmos D; Carles J | Updated recommendations from the Spanish Oncology Genitourinary Group for the treatment of patients with metastatic castration-resistant prostate cancer | CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY | 6 |
| José T Ramos, Rosa Polo, Pablo Rojo, José Antonio Couceiro, María A. Muñoz-Fernández, Carmen Muñoz-Almagro, África Holguín, Maribel González Tomé, Sara Guillén, Lola Falcón, Pere Soler, Antonio Mur, Olaf Neth, N. López Segura, Ton Noguera, Marisa Navarro, Andrea Martín, Jesús Saavedra, David Moreno-Pérez, Luis Prieto y María Eugenia Martínez Núñez | Documento de consenso del CEVIPH/SEIP/AEP/SPNS respecto al tratamiento antirretroviral en niños y adolescentes infectados por el VIH. Panel de expertos del Colaborativo Español para la Infección VIH Pediatrica (CEVIPH), Sociedad Española de Infectología Pediatrica (SEIP) de la Asociación Española de Pediatría (AEP) y Secretaria del Plan nacional del Sida | SOCIEDAD ESPAÑOLA DE INFECTOLOGIA PEDIATRICA (SEIP) DE LA ASOCIACIÓN ESPAÑOLA DE PEDIATRIA (AEP) Y SECRETARIA DEL PLAN NACIONAL DEL SIDA | 5 |

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| Authors | Title | PUBLICATION | Area |
| Rosa Polo, Jordi Blanch Jaime Locutura Piedad Arazo Pablo Bachiller Carmen Bayon, Vicente Estrada, Carmina Fumaz, Maria José Galindo, Maribel González Tomé, Jose Luis Fernández, Jose Antonio Iribarren Maria Jose Mellado, Fernando Lozano Ana Mariño, Jose A Muñoz Moreno Marisa Navarro Ricard Navinés, Juan Francisco Pérez Prieto, Araceli Roussaud Jesús Sánchez Hernández Montse Tuset Agueda Rojo Jesús Santos. | Documento de Consenso sobre las alteraciones Psiquiátricas y psicológicas en adultos y niños con infección por el VIH (Actualización febrero 2015). Grupo de expertos de la Secretaría del Plan Nacional sobre el SIDA (SPNS), SEP, GESIDA y SEIP. http://www.msssi.gob.es/ciudadanos/enftransmisibles/sida/publicaciones/recomendaciones.htm | MINISTERIO DE SANIDAD, SERVICIOS SOCIALES E IGUALDAD | 5 |
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| Rosa Polo, Jose Tomás Ramos Pablo Rojo Pepa Mellado Claudia Fortuny Raúl González Pere Soler Maribel González África Holguín Luis Escosa Luis Prieto Sara Guillen, Marisa navarro Jesus Saavedra Olaf Net, Lola Falcon David Moreno M angeles Muñoz María Eugenia Martínez Antonio Mur Jose Couceiro Andrea Martin Carmen Muñoz Nuria López Ton Noguera | Documento de Consenso sobre tratamiento antirretroviral en niños y adolescentes con infección por el virus de la inmunodeficiencia humana (actualización septiembre 2015). Panel de expertos de la SEIP y del SPNS | MINISTERIO DE SANIDAD, SERVICIOS SOCIALES E IGUALDAD | 5 |

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| Pironi L(1), Arends J(2), Baxter J(3), Bozetti F(4), Peláez RB(5), Cuerda C(6), Forbes A(7), Gabe S(8), Gillanders L(9), Holst M(10), Jeppesen PB(11), Joly F(12), Kelly D(13), Klek S(14), Irtun Ø(15), Olde Damink SW(16), Panisic M(17), Rasmussen HH(10), Staun M(11), Szczepanek K(14), Van Gossum A(18), Wanten G(19), Schneider SM(20), Shaffer J(21); Home Artificial Nutrition & Chronic Intestinal Failure; Acute Intestinal Failure Special Interest Groups of ESPEN. | ESPEN endorsed recommendations. Definition and classification of intestinal failure in adults. | CLINICAL NUTRITION | 7 |
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| Authors | Title | PUBLICATION | Area |
| Ignacio Garutti, Miriam de Nadal, Renato Schiraldi, Francisco Acosta, César Aldecoa | Guías clínicas para la optimización hemodinámica perioperatoria de los pacientes adultos durante la cirugía no cardíaca pacientes adultos durante la cirugía no cardíaca | CRYRE MARKETING SOLUTIONS | 7 |
| Ignacio Garutti, Miriam de Nadal, Renato Schiraldi, Francisco Acosta, César Aldecoa | Clinical guidelines for perioperative hemodynamic optimization in adult patients during non-cardiac surgery. | CRYRE MARKETING SOLUTIONS | 7 |
| Javier López-Longo | Consensus Document on Prevention and Treatment of Tuberculosis in Patients for Biological Treatment. | ARCHIVOS DE BRONCONEUMOLOGÍA | 5 |
| Esperanza Naredo | International Consensus for ultrasound lesions in gout: results of Delphi process and web-reliability exercise. | RHEUMATOLOGY (OXFORD) | 5 |
| Lasso JM, Cortina E, Pérez Cano R | Células madre en cirugía plástica | CIRUGÍA PLÁSTICA, REPARADORA Y ESTÉTICA. COIFFMAN. 4º EDICIÓN. CAP. 32 | 7 |
| Lasso JM, Rosado J, Pérez Cano R | Versatility and innovations of the greater omental flap in the surgical treatment of Lymphedema of the upper and lower limbs | THE LYMPHATIC SYSTEM. COMPONENTS, FUNCTIONS AND DISEASES | 7 |
| Lasso JM, Pinilla C, Castellano M | New Refinements in Greater Omentum Free Flap Transfer for Severe Secondary Lymphedema Surgical Treatment | PLAST RECONSTR SURG GLOB OPEN | 7 |
| Lasso JM, Pérez Cano R, Castro Y | Xenotransplantation of human adipose-derived stem cells in the regeneration of a rabbit peripheral nerve | J PLAST RECONSTR AESTHET SURG | 7 |

(Continued on next page)

| CLINICAL PRACTICE GUIDELINES 2015 (<i>Cont.</i>) | | | |
|---|--|---|------|
| Authors | Title | PUBLICATION | Area |
| Grupo de trabajo Suprarrenal de la SEEP. Coordinadora Begoña Ezquieta | Guía para pacientes y familias Hiperplasia Suprarrenal Congénita | GOBIERNO DE CANARIAS. SOCIEDAD ESPAÑOLA DE ENDOCRINOLOGÍA PEDIÁTRICA Y ASOCIACIÓN NACIONAL DE PACIENTES CON HIPERPLASIA SUPRARRENAL CONGÉNITA | 7 |
| Zaballos M, López-Álvarez S, Argente P, López A | Recomendaciones de pruebas preoperatorias en el paciente adulto para procedimientos en régimen de cirugía ambulatoria | REV ESP ANESTESIOL REANIM | 7 |
| Luis Puente Maestu | Technical Document on the "Use Of Exercise Testing In The Evaluation Of Interventional Efficacy: An Official Ers Statement | | 7 |

Doctoral theses

Providing its members with the opportunity to improve their training is a key aspect of the activity of a health research institute. This is best reflected in the direction of doctoral theses defended by researchers from the institute.

A record 58 doctoral theses were defended during 2015 (see below).

| Student | Title | Director | University | Area |
|-------------------------------|--|--------------------------------------|-----------------------------------|------|
| Eugenio Koblents Lapteva | Nonlinear Population Monte Carlo Methods for Bayesian Inference | Joaquín Míguez Arenas | Universidad Carlos III de Madrid | 7 |
| Atilano Carcavilla Urquí | Síndrome de Noonan y otros síndromes neuro-cardio-facio-cutáneos. Estudio de la correlación genotipo-fenotipo y desarrollo de herramientas de apoyo al diagnóstico | Begoña Ezquieta Zubicaray | Universidad Alcalá de Henares | 7 |
| Guillermo Maestro de la Calle | Estudio comparativo a largo plazo de la función renal en pacientes con infección VIH tratados con tenofovir disoproxil fumarato | Juan Carlos López Bernaldo de Quirós | Universidad Complutense de Madrid | 4 |
| Ana Luisa Vargas | Marcadores predictivos de fibrosis y de respuesta al tratamiento frente al virus de la hepatitis C (VHC) en pacientes coinfectados por VIH y VHC | Juan Berenguer Berenguer | Universidad Complutense de Madrid | 4 |
| Joanna V. Rodríguez César | (Batch) Markovian arrival processes: the identifiability issue and other applied aspects | Rosa E. Lillo, Josefa Ramírez | Universidad Carlos III de Madrid | 2 |

| Student | Title | Director | University | Area |
|------------------------------------|--|---|-----------------------------------|------|
| Carlos García Caballero | Sumisión química. Estudio de prevalencia en casos de presuntos delitos contra la libertad sexual analizados en el Instituto Nacional de Toxicología y Ciencias Forenses (Departamento de Madrid) en el período 2010-2013. Aplicación forense de la cromatografía de líquidos acoplada a la espectrometría de masas en el análisis de muestras de cabello | O Quintela | Universidad Complutense de Madrid | 7 |
| Elena Sagarra Cebolla | Intensificación terapéutica en adenocarcinoma de recto cT4NxM0. Resultados y factores pronósticos | Felipe A. Calvo Manuel, José Luis García Sabrido, Rosangela Obregón Reina | Universidad Complutense de Madrid | 6 |
| Claudio Solé Pesutic | Valor pronóstico de la radioterapia externa en el manejo multidisciplinar de pacientes con cáncer oligo-recurrente | Felipe A. Calvo Manuel | Universidad Complutense de Madrid | 6 |
| Susana Gordo Remartínez | Determinación de los niveles plasmáticos de la proadrenomedulina en urgencias como marcador pronóstico de la evolución clínica en pacientes con neumonía adquirida en la comunidad | José María de Miguel y Yanes, Luis Antonio Álvarez-Sala Walther | Universidad Complutense de Madrid | 2 |
| Pablo García Moreno | Bayesian nonparametrics for crowdsourcing | Antonio Artés Rodríguez, Fernando Pérez Cruz | Universidad Carlos III de Madrid | 1 |
| Gabriel González Castañé | New simulation techniques for energy aware cloud computing environments | Jesús Carretero Pérez, Alberto Nuñez Covarrubias | Universidad Carlos III de Madrid | 1 |
| Paula Montesinos Suárez de la Vega | Advanced acquisition and reconstruction techniques in magnetic resonance imaging | Manuel Desco Menéndez, Juan Felipe Pérez-Juste Abascal | Universidad Carlos III de Madrid | 1 |
| Pascual Balsalobre López | Trasplante de progenitores hematopoyéticos en pacientes vih+con linfoma | José Luis Díez Martín, Pilar Guallar Castillón | Universidad Autónoma de Madrid | 6 |

(Continued on next page)

| Student | Title | Director | University | Area |
|----------------------------------|---|---|-----------------------------------|------|
| Juan Ruiz García | La orden de no reanimar y las decisiones al final de la vida en el paciente cardiológico. Oportunidades de mejora | Francisco Fernández-Aviles Díaz, Manuel Martínez Sellés Dólivera | Universidad Complutense de Madrid | 2 |
| Rosa María Rodríguez Fernández | Bronquiolitis por virus respiratorio sincitial: estudio prospectivo de la evolución temporal de los marcadores inmunológicos de infección y su relación con las sibilancias recurrentes | Teresa Hernández Sanpelayo, M. Ángeles Muñoz Fernández | Universidad Autónoma de Madrid | 5 |
| Nicola Mingotti | Functional linear models | Juan Romo Urroz, Rosa Elvira Lillo Rodríguez | Universidad Carlos III de Madrid | 1 |
| Maria Itziar Marsinyach Ros | Fundamentos para la creación y control de calidad de un sistema de transporte neonatal especializado | José López Sastre, Manuel Sánchez Luna | Universidad Complutense de Madrid | 7 |
| Maria Vázquez de la Torre Gaspar | Nuevos adyuvantes en la inmunoterapia específica de las enfermedades alérgicas: estudio de aspectos inmunológicos, celulares y repercusión funcional respiratoria en un modelo animal de asma bronquial | Rafael Enríquez de Salamanca Lorente, José Manuel Zubeldia Ortuño | Universidad Complutense de Madrid | 5 |
| Francisco Jesús Rodríguez Ruiz | Bayesian nonparametrics for time series modeling | Fernando Pérez-Cruz | Universidad Carlos III de Madrid | 1 |
| Yasser Alemán Gómez | Advanced morphometric techniques applied to the study of human brain anatomy | Manuel Desco Menéndez | Universidad Politécnica de Madrid | 1 |
| Cristina Chavarriás Navas | Estudios funcionales mediante resonancia magnética en pequeños animales | Manuel Desco Menéndez, Juan Felipe Pérez-Juste Abascal | Universidad Carlos III de Madrid | 1 |
| Esdras Joseph | The Mahalanobis distance for functional data with applications in statistical problems | Rosa Elvira Lillo Rodríguez | Universidad Carlos III de Madrid | 1 |

| Student | Title | Director | University | Area |
|--|---|--|-----------------------------------|------|
| Ana Ayesta López | Valor pronóstico de la discordancia de sexo entre donante y receptor tras un trasplante cardiaco | Manuel Martínez-Sellés, Francisco Fernández-Aviles | Universidad Complutense de Madrid | 2 |
| Lorenzo Hernando Marrupe | Prevalencia y pronóstico de la nefropatología tras intervencionismo coronario percutáneo de pacientes con síndrome coronario agudo y función renal normal | Javier Botas Rodríguez, Francisco Fernández-Aviles | Universidad Complutense de Madrid | 2 |
| Mª de las Candelas Pérez del Villar Moro | Determinantes principales de la función diastólica del ventrículo derecho | Javier Bermejo Thomas, Pedro Luis Sánchez Fernández, Francisco Fernández-Aviles Díaz | Universidad Complutense de Madrid | 2 |
| Maria Ángeles Espinosa Castro | Citocompatibilidad de tejidos cardíacos humanos decelularizados con detergentes | Maria Eugenia Fernández, Pedro Luis Sánchez, Francisco Fernández-Aviles | Universidad Complutense de Madrid | 2 |
| Rocio Angulo Llanos | Opciones terapéuticas en las dehiscencias de PRÓTESIS VALVULARES | Jaime Elizaga, Javier Bermejo Thomas, Francisco Fernández-Aviles Díaz | Universidad Complutense de Madrid | 2 |
| Teresa González López | Análisis de la variación circadiana de presión arterial en la patología adquirida de la aorta: implicaciones diagnósticas y pronósticas | Pedro Javier Aranda Granados, Pedro Aranda Lara, Domingo Hernández Marrero | Universidad de Málaga | 2 |
| Sari M Arponen | Efecto del tratamiento antirretroviral en la respuesta virológica a interferón pegilado y ribavirina en pacientes coinfectados por el virus de la inmunodeficiencia humana y el virus de la hepatitis c | Juan Berenguer Berenguer, Juan González García, Rafael Bañares Cañizares | Universidad Complutense de Madrid | 4 |
| Martha Jeannette Kestler Hernández | Estudio games de endocarditis infecciosa en España | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid | 4 |

(Continued on next page)

| Student | Title | Director | University | Area |
|-------------------------|--|--|-----------------------------------|------|
| Maricela Valerio Minero | Implementación de un programa para el control del uso de antifúngicos en un hospital general universitario "antifungal stewardship" | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid | 4 |
| Carmen Martínez Jimenez | Evaluación de biomarcadores serológico de candidiasis invasiva para su aplicación clínica | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid | 4 |
| Helena Reigadas Ramírez | Estudio de la infección por Clostridium difficile: indicación, epidemiología, características clínicas, factores de riesgo, de gravedad y recurrencia | Emilio Bouza Santiago | Universidad Complutense de Madrid | 4 |
| Mª Jesús Pérez Granda | Prevención de la neumonía asociada a ventilación mecánica en el post-operatorio de cirugía cardíaca | Emilio Bouza Santiago | Universidad Complutense de Madrid | 4 |
| Minia Campos Domínguez | Microscopía Confocal En Las Enfermedades Ampollosas Subepidérmicas Autoinmunes | Paloma Sánchez-Mateos Rubio, Ricardo María Suárez Fernández, Jesús Millán Núñez-Cortés | Universidad Complutense de Madrid | 5 |
| Carolina Marín Huertas | Diagnóstico precoz de la enfermedad cardiovascular en el lupus eritematoso sistémico | Luis Carreño Pérez, Francisco Javier López Longo, Luis Rodolfo Collado Yurrita | Universidad Complutense de Madrid | 5 |
| Lina Martínez Estupiñán | Influencia del bloqueo del factor de necrosis tumoral alfa sobre los niveles del factor reumatoide y anticuerpos anti-peptido cíclicos citrulinados en pacientes con artritis reumatoide | Luis Carreño Pérez, Luis Collado Yurrita | Universidad Complutense de Madrid | 5 |
| Blanca Soler Palacios | Implicaciones patológicas y terapéuticas de la contribución del metabolismo del folato a la polarización de macrófagos | Amaya Puig-Kroger | Universidad Complutense de Madrid | 5 |

| Student | Title | Director | University | Area |
|------------------------------|---|---|-----------------------------------|---------------|
| Alberto Parente Hernández | Comparación de tratamientos endourológicos para la estenosis pieloureteral congénita en el niño | Luis González Bayón, Felipe Herranz, Juan Carlos de Agustín | Universidad Complutense de Madrid | 6 |
| Rebeca Mondejar Solís | Cambios en el perfil inmunohistoquímico tras tratamiento neoadyuvante en pacientes con cáncer de mama | Miguel Martín Jiménez | Universidad Complutense de Madrid | 6 |
| José Antonio López Martín | Cambios proteómicos y del metabolismo energético en un modelo in vitro de interacción epitelio-mesénquima de cáncer de páncreas | Miguel Martín Jiménez | Universidad Complutense de Madrid | 6 |
| Raquel López Sánchez | Limitación del Esfuerzo Terapéutico en las Unidades de Cuidados Intensivos Pediátricos: Opinión y Actitud de los Profesionales | Ruth Gil Prieto, Ana Mª García Pozo | Universidad Rey Juan Carlos | Nursing Group |
| Laura Collados Gómez | Eficacia de leche materna extraída versus sacarosa oral para la analgesia en neonatos preterminos sometidos a venopunción | Rodrigo Jiménez García, Ana Mª García Pozo | Universidad Rey Juan Carlos | Nursing Group |
| Luis Guerra Sánchez | Efecto sobre la calidad de vida en pacientes con Insuficiencia Cardiaca en una Intervención Enfermera de mejora nutricional | Carmen Martínez Rincón | Universidad Complutense de Madrid | Nursing Group |
| Maria Loreto Alvarez Nebreda | Tratamiento integral de la fractura de cadera en el anciano: Modelo predictivo de mortalidad intrahospitalaria | José Antonio Serra Rexach, José Manuel Ribera Casado | Universidad Complutense de Madrid | 7 |
| Paloma Morillas Sendín | Efecto anestésico en el dispositivo de asistencia mecánica circulatoria: anestesia intravenosa frente a anestesia inhalatoria | Begoña Quintana, Emilio Delgado, Mª Jesús Delgado | Universidad Complutense de Madrid | 7 |

(Continued on next page)

| Student | Title | Director | University | Area |
|--------------------------|--|---|-----------------------------------|------|
| Lara Echarri Martínez | Atención farmacéutica integral aplicada a la detección y prevención de errores de medicación en pacientes críticos pediátricos | Cecilia Martínez Fdez-Llamazares, Silvia Manrique Rodríguez, Irene Iglesias Peinado | Universidad Complutense de Madrid | 7 |
| Carmen Rodríguez | Modelo de Excelencia en la Atención Farmacéutica Especializada al paciente crónico en el ámbito hospitalario | Ana Herranz Alonso, Irene Iglesias Peinado | Universidad Complutense de Madrid | 7 |
| Ana de Lorenzo Pinto | Programa dirigido a la disminución de hemorragias en pacientes con síndrome coronario agudo mediante la optimización de la terapia antitrombótica | Ana Herranz Alonso, Héctor Bueno Zamora, Irene Iglesias Peinado | Universidad Complutense de Madrid | 7 |
| Almudena Ribed Sánchez | Programa de seguimiento farmacoterapéutico de pacientes en tratamiento con antineoplásicos orales | Rosa Mª Romero Jiménez, Vicente Escudero Vilaplana, Irene Iglesias Peinado | Universidad Complutense de Madrid | 7 |
| Esther Ramírez Herráiz | Impacto económico de la utilización de los antagonistas del factor de necrosis tumoral en artropatías inflamatorias. | Ana Herranz Alonso, María José Faus Dáder | Universidad de Granada | 7 |
| Javier Molina Infante | Caracterización fenotípica y bases moleculares de los pacientes con eosinofilia esofágica respondedor a fármacos inhibidores de la bomba de protones | Rafael Bañares Cañizares | Universidad Complutense de Madrid | 7 |
| Gabriel Alejandro Cusati | Efecto de la lidocaína en la modulación del daño pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | Universidad Complutense de Madrid | 7 |
| Lisa Rancan | Modulación de la respuesta inflamatoria secundaria a la isquemia/reperfusión pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | Universidad Complutense de Madrid | 7 |

| Student | Title | Director | University | Area |
|---------------------------|--|--|-----------------------------------|------|
| Guillermo Sánchez Pedrosa | Respuesta inflamatoria local secundaria a la ventilación unipulmonar en un modelo experimental de cirugía torácica | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | Universidad Complutense de Madrid | 7 |
| Eduardo Verde Moreno | Valor pronóstico de las arritmias supraventriculares en hemodiálisis | Juan Manuel López Gómez | Universidad Complutense de Madrid | 7 |

Cooperative Research

One of the most important instruments Instituto de Salud Carlos III has at its disposal for promoting research in health science can be found in the cooperative structures that enable interaction between researchers. In addition, these structures facilitate the progress of research and rapid transfer of scientific advances to improve the health of the population.

In recent years, Instituto de Salud Carlos III has developed and maintained cooperative research groups of excellence, such as the Centros de Investigación Biomédica en Red (CIBER [Networked Centers for Biomedical Research]) and the Redes Temáticas de Investigación Cooperativa (RETIC [Thematic Networks for Cooperative Research]).

iISGM participates in many of these networks, and 3 of its researchers manage some of the more relevant networks.

CENTRO DE INVESTIGACIÓN BIOMÉDICA EN RED DE SALUD MENTAL (CIBERSAM [Networked Biomedical Research Center for Mental Health])

Scientific Director: Celso Arango López

Mental disorders are the world's main cause of disability. More than 5 million people in Spain have a mental disorder during their lifetime. Mental illness has a huge impact on society in general. In fact, EU spending on mental health is between 3% and 4% of gross domestic product, and mental disorders are the main reason for early retirement and disability pensions. Furthermore, mental illness generates a huge burden, affecting both society and patients and their families.

CIBERSAM was created on January 1, 2008 to improve clinical care and mental health in Spain through knowledge generated by translational research in psychiatry and neuroscience.

CIBERSAM brings together 6 research programs:

- Depression.
- Schizophrenia.
- Bipolar disorder.
- Therapeutic innovation.
- Child and adolescent psychiatry.
- Psychosomatic disorders, anxiety disorders, and impulse control disorders.

CIBERSAM is home to 25 groups selected competitively from among the most notable research groups in Spain.

RED DE INVESTIGACIÓN CARDIOVASCULAR (RIC [Cooperative Network for Research on Cardiovascular Diseases])

General coordinator: Francisco Fernández Avilés Díaz

RIC was created in response to the call from the RETICs of the Instituto de Salud Carlos III. Its mission is to help to reduce the impact of cardiovascular diseases on the survival and quality of life of Spanish citizens by promoting research in this field and transferring the results to daily clinical practice.

The objectives of the network are to reduce the burden of cardiovascular diseases and develop the highest quality research and training to further our understanding of the underlying mechanisms so that transferrable benefits can be generated (diagnosis, prevention, cure, palliation).

RIC is organized around 4 priority areas:

- Myocardial dysfunction and heart failure.
- Coronary disease and myocardial infarction.
- Endocardial and arterial disease.
- Arrhythmias and familial diseases.

RIC brings together more than 800 researchers from throughout Spain who are organized into 64 research groups and carry out their scientific and training activities through 7 research programs.

ITEMAS PLATFORM 2015

General coordinator: Manuel Desco Menéndez

The Medical Technology Innovation Network (Red ITEMAS) is one of the Redes Temáticas de Investigación Cooperativa en Salud (RETICS [*Thematic Cooperative Research Networks in Health Care*]) promoted by Instituto de Salud Carlos III (ISCIII) as a key component in its vision of innovation.

ITEMAS aims to promote innovation in health care technology as a basic tool for ensuring the sustainability of the National Health System. It supports the development of the necessary culture of innovation in hospitals and medical centers to facilitate the integration of science and industry in the field of medical technology.

Innovation in ITEMAS is centered on the Innovation Support Units of 31 hospitals belonging to the National Health System. The platform can also count on the participation of 115 collaborative bodies involved in innovation in health care. These include technology centers, scientific societies, companies, and research groups. Appropriate communication and collaboration between Innovation Support Units and these agents is essential if ideas and projects developed in hospitals are to become products and services that can provide value to the health system and society.

ITEMAS has set up 12 multidisciplinary working groups whose objective is to ensure joint acceptance of good practices that favor the transfer of knowledge from hospitals and that make it possible to remove some of the barriers to this process.

Finally, IiSGM research groups are joined by groups participating in various collaborative research structures (see below).

| Structure | Group | Group Director | Area | Role of Group |
|--|---|----------------------------|--------------------------------|---------------------------|
| RIC | Natural history of heart disease | Francisco Fernández-Avilés | Cardiovascular diseases | Network coordination |
| RIC | Blood lipids and cardiovascular risk | Luis Álvarez-Sala | Cardiovascular diseases | Associated clinical group |
| RIC | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Associated clinical group |
| RIC | Cardiovascular pathophysiology | Victoria Cachofeiro | Cardiovascular diseases | Associated clinical group |
| RIC | Cardiac cellular electrophysiology | Eva Delpón | Cardiovascular diseases | Associated clinical group |
| RIC | Cardiology and heart transplant in children | Constancio Medrano | Cardiovascular diseases | Associated clinical group |
| Plataforma Innovación en Tecnologías Médicas y Sanitarias (ITEMAS) | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Platform coordination |
| RIS-Red Española de Investigación en Sida | Clinical and epidemiological aspects of HIV and associated conditions | Juan Berenguer | Infectious diseases and AIDS | Associated clinical group |
| RIS-Red Española de Investigación en Sida | Molecular immunobiology. Molecular biology of HIV | Mª Ángeles Muñoz Fernández | Diseases of the immune system | Research group |
| RIS-Red Española de Investigación en Sida | Inmune Regulation and homeostasis in diseases of the immune system | Rafael Correa Rocha | Diseases of the immune system | Research group |
| RIS-Red Española de Investigación en SIDA | Infections in children | Mª Luisa Navarro | Diseases of the immune system | Research group |
| CIBERSAM | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders | Celso Arango | Neuroscience and mental health | Scientific management |
| CIBERSAM | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Research group |

| Structure | Group | Group Director | Area | Role of Group |
|---------------------------------|---|----------------------------|---|---|
| CIBERSAM | Signal Processing | Antonio Artés | Biomedical engineering | Research group |
| CIBERSAM | Interdisciplinary oncology and biotechnology | Felipe Calvo | Translational oncology | Research group |
| CIBERES | Infectious diseases | Emilio Bouza | Infectious diseases and AIDS | Research group |
| CIBERES | Vascular pathophysiology and pharmacology | Francisco Pérez-Vizcaíno | Systemic diseases and organ transplantation | Research group |
| CIBEREHD | Pathophysiology and natural history of liver and digestive diseases | Rafael Bañares | Systemic diseases and organ transplantation | Research group |
| CIBERER | Pathogenesis of the immunoallergic response | Jose Manuel Zubeldia | Diseases of the immune system | Research group |
| CIBERER | Oncology-hematology in pediatric patients | Elena Cela | Translational oncology | Research group |
| CIBERER | Pediatric Endocrinology | Mª Dolores Rodríguez Arnao | Systemic diseases and organ transplantation | Research group |
| CIBERER | Pediatric endocrinology. Hereditary diseases | Begoña Ezquieta | Systemic diseases and organ transplantation | Research group |
| CIBER-BBN | Molecular immunobiology. Molecular biology of HIV | Mª Ángeles Muñoz | Diseases of the immune system | Associated group |
| Plataforma de Biobancos | Molecular immunobiology. Molecular biology of HIV | Mª Ángeles Muñoz | Diseases of the immune system | Collection of biological samples associated with: <ul style="list-style-type: none">• Histopathology• Patients with HIV infection• Maternal-fetal medicine• Pediatrics HIV Biobank |
| Red de terapia celular (TERCEL) | Natural history of heart disease | Francisco Fernández-Aviles | Cardiovascular diseases | Research group |

(Continued on next page)

| Structure | Group | Group Director | Area | Role of Group |
|--|--|-----------------------|---|----------------|
| Red SAMID (Red de salud materno infantil y del desarrollo) | Diseases of the critically ill child | Jesús López-Herce | Systemic diseases and organ transplantation | Research group |
| RTICC-Red temática de investigación cooperativa en cáncer | Genetics and clinical features of hematologic malignancy and hematopoietic cell transplantation | José Luis Díez | Translational oncology | Research group |
| RTICC-Red temática de investigación cooperativa en cáncer | Translational medical oncology and personalized cancer treatment | Miguel Martín | Translational oncology | Research group |
| RIER | Immuno-oncology | Paloma Sánchez Mateos | Diseases of the immune system | Research group |
| REDISSEC | Pathophysiology and clinical aspects of COPD | Luis Puente | Systemic diseases and organ transplantation | Research group |
| REDINREN | Vascular damage and inflammation in chronic kidney disease,dialysis, and kidney transplantation. Pathophysiology of the kidney | José Luño | Systemic diseases and organ transplantation | Research group |

| Structure | Group | Group Director | Area | Role of Group |
|--|-----------------------|---------------------|---|--------------------|
| RESITRA | Infectious diseases | Emilio Bouza | Infectious diseases and AIDS | Research group |
| RETICEF-Red temática de investigación cooperativa en envejecimiento y fragilidad | Biopathology of aging | J. Antonio Serra | Systemic diseases and organ transplantation | Research group |
| Plataforma de Unidades de Investigación Clínica y Ensayos Clínicos (SCREN) | UCAICEC | María C. de la Cruz | Research support services | Participating unit |

3

Group Scientific Activity by Area



Area 1. Biomedical Engineering

Area 2. Cardiovascular diseases

Area 3. Neuroscience and mental health

Area 4. Infectious Diseases and AIDS

Area 5. Diseases of the Immune System

Area 6. Translational Oncology

Area 7. Systemic Diseases and Organ
Transplantation

Nursing

AREA 1

Area coordinator:
Manuel Desco Menéndez

Biomedical engineering

The Area of Biomedical Engineering is a particularly interesting facet of the Instituto de Investigación Sanitaria Gregorio Marañón (IISGM [*Gregorio Marañón Health Research Institute*]). It provides a complementary and clearly enriching vision of the type of research traditionally carried out in biomedicine. Its emphasis on technology, transferability, and immediacy of application, as well as its clear orientation towards innovation, makes it an area of considerable added value.

These characteristics are evidenced by the considerable number of joint publications with other groups and areas of the Institute. In fact, the Area of Biomedical Engineering leads the Red de Innovación en Tecnologías Medicas y Sanitarias (ITEMAS [*Medical Technology Innovation Network*]) of the Instituto de Salud Carlos III (*Carlos III Health Institute*). This area is also the link between the IISGM and Universidad Carlos III. In addition to its research activity, it plays a key role in the new undergraduate Degree in Biomedical Engineering offered by Universidad Carlos III.

Not surprisingly, therefore, the strategic axes of this area are directed towards consolidating collaboration with Universidad Carlos III (in which the incorporation of new research groups will be essential), defining and strengthening the area's role in teaching, consolidating the functioning of the Innovation Support Unit of Hospital General Universitario Gregorio Marañón (HGUGM)—which has considerably stepped up its activity during recent years—and intensifying its strategy of supporting and complementing clinical research.

Its marked technological character makes the Area of Biomedical Engineering a key player in obtaining funds from EU framework programs. Greater emphasis will be placed on this activity in the coming years.

Lastly, the Area of Biomedical Engineering aims to introduce a series of activities aimed at facilitating the participation of other technology groups in the IISGM, thus promoting multidisciplinary research capacity and rapid knowledge transfer, and, in short, responding effectively to key issues in the field of biomedicine.

Research lines and axes

Strategic axes

- ▶ A1: Consolidation of collaboration with Universidad Carlos III by boosting joint activities between LiSGM and technology groups from UC3M.
- ▶ A2: Consolidation of academic collaboration between the Institute and Universidad Carlos III in the teaching area of the Degree in Biomedical Engineering.
- ▶ A3: Expanding the functions and scope of the Innovation Support Unit.
- ▶ A4: Intensification of the clinical research support line, through continued expansion to other hospitals and institutions of the Comunidad de Madrid.

Strategic lines

1. Clinical research support

Strategic objectives:

- Intensify development of imaging-guided surgery by increasing the number of collaborating institutions and groups and recruiting new companies interested in technology transfer in this area.
- Advance in the development of the neuroimaging processing platform by adding new in-house and outsourced processing algorithms, completing implementation of the hardware platform, increasing the efficiency of this platform with the participation of groups specialized in massive computing from Universidad Carlos III, and, finally, establishing contact with companies in the sector who could use the technology developed.

2. Technological development

Strategic objectives:

- Complete the development of a new generation of preclinical PET-CT scanners.
- Develop a combined preclinical PET-MRI system.
- Advance in the development of fluorescence molecular optical tomography (FMT and SPIM).

3. Biomedical experimentation

Strategic objectives:

- Complete the installation and implementation of the molecular probe laboratory.
- Maintain and increase collaboration with other groups in molecular imaging experiments in the fields of cardiology, oncology, and neuroimaging.

Groups in AREA 1

Biomedical engineering



- ▶ Advanced technological applications and human health
- ▶ Signal processing
- ▶ Computer architecture, communications, and systems
- ▶ Nonparametric statistical techniques and intensive computing

Advanced technological applications and human health

Group director: **MANUEL DESCÓ MENÉNDEZ**

Type: **Consolidated**

Research lines

- ▶ L1: Imaging support for clinical research.
- ▶ L2: Development of technology.
- ▶ L3: Biomedical experimentation.

The work of this group is aimed mainly at research into medical imaging techniques, in terms of both developing new technology and processing methods and practical applications for clinical practice and biomedical research.

The group comprises researchers from very disparate fields (eg, physicians, engineers, physicists, and biologists) who belong to Universidad Carlos III and to Hospital Gregorio Marañón. Professionals from both entities work together to constitute the liSGM. The group's clearly multidisciplinary character creates a strong connection with real clinical and preclinical needs. Collaboration with hospitals and other biomedical research centers facilitates rapid validation of results and has generated several successful cases of technology transfer to industry.

Consequently, the group has a wide range of imaging and processing techniques, some of which were obtained before they became commercially available. These techniques enable the group to offer advanced imaging services to internal and external research groups.

Research activity is based on 3 major lines: imaging support for clinical research, development of imaging tool technology, and biomedical research projects that require preclinical molecular imaging.



Group members

- Mónica Abella García: Postdoctoral.
- Yasser Alemán Gómez: Postdoctoral.
- Iván Balsa Lozano: Support technician.
- Diana-Ioana Bocancea: Trainee.
- Jean-Yves Bourges: Predoctoral.
- Mikael Brudfors: Predoctoral.
- Susana Carmona Cañabate: Contracted through COFUND M+Visión.
- Eva Carravilla Expósito: Support technician.
- Marta Casquero Veiga: Trainee.
- Cristina Chavarriás Navas: Postdoctoral.
- Rigoberto Chil Pérez: Predoctoral.
- Lorena Cusso Mula: Postdoctoral.
- Alexandra De Francisco López: Support technician.
- Claudia De Molina Gómez: Predoctoral.
- Manuel Desco Menéndez: Group Director.
- Esther Diez Santiago: Support technician.
- María de la Jara Felipe Maestre: Support technician.
- Cristina Garcerán Ortega: Other.
- David García García: Postdoctoral.
- David García Mato: Predoctoral.
- Inés García Barquero: Predoctoral.
- Tatiana García Díez: Other.
- Verónica García Vázquez: Predoctoral.
- Alba García Santos: Predoctoral.
- Trajana Garrido Huerta: Management.
- Pablo Gómez García: Predoctoral.
- Mª Victoria Gómez Gaviro: Postdoctoral.
- Georgios Konstantinou: Predoctoral.
- Javier Lanillos Manchón: Predoctoral.
- Rocío López Velazco: Predoctoral.
- Pedro Macías Gordaliza: Predoctoral.
- Luis Marcos Vidal: Predoctoral.
- Asier Marcos Vidal: Predoctoral.

- Eugenio Daniel Marínetto Carrillo: Predoctoral.
- Kenia Martínez Rodríguez: Postdoctoral.
- Álvaro Martínez Martínez: Predoctoral.
- Cristóbal Martínez Sánchez: Predoctoral.
- María Elena Martíño Casado: Postdoctoral.
- Paula Montesinos Suárez de la Vega: Postdoctoral.
- Arrate Muñoz Barrutia: Postdoctoral.
- Diego Muñoz Beltrán: Trainee.
- Francisco Javier Navas Sánchez: Predoctoral.
- Lucía Novoa Vázquez: Support technician.
- Aurora María Olmo Castillo: Predoctoral.
- Ana Ortega Gil: i-PFIS.
- Juan Miguel Parra Robles: Marie Curie.
- Javier Pascau González Garzón: Senior researcher.
- Santiago Peña Zalbidea: Predoctoral.
- Juan Felipe Pérez-Juste Abascal: Postdoctoral.
- Ramón Polo Cezón: Predoctoral.
- Anna Riera Guerra: Management.
- Jorge Ripoll Lorenzo: Senior researcher.
- Marco Antonio Rivas Fernández: Management.
- Elena Rodríguez Casau: Management.
- Daniel Romero Tristán: Support technician.
- Jesús Eladio Sánchez Silva: Management.
- Andrés Sánchez Dorado: Support technician.
- Carlos Sánchez-Noriega Zafra: Support technician.
- Laura Sanz Díaz: Predoctoral.
- Begoña Sesé De Lucio: Predoctoral.
- Yolanda Sierra Palomares: Support technician.
- María Silos Viu: Trainee.
- María Luisa Soto Montenegro: Miguel Servet.
- Alejandro Suñe Auñón: FPI.
- Jussi Tohka: Marie Curie.
- Juan José Vaquero López: Senior researcher.
- Tom Vettemburg: Marie Curie.
- Ana Villarejo López: Trainee.

Research projects – Competitive calls

- Principal investigator: M. Luisa Soto Montenegro
Title: Imagen molecular mediante PET/CT de meningiomas con péptidos marcados con Ga-68 en un modelo murino.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2014
- Principal investigator: Juan José Vaquero López
Title: Red Cardiovascular.
Funding body: Ministerio de Economía y Competitividad
Start date: 2013.
End date: 2016
- Principal investigator: Juan José Vaquero López
Title: Model-based preclinical development of anti-tuberculosis drug combinations (PreDiCT-TB).
Funding body: Unión Europea.
Start date: 2012.
End date: 2017
- Principal investigator: Javier Pascau González-Garzón
Title: Tecnologías para procedimientos intraoperatorios seguros y precisos. XIORT.
Funding body: Ministerio de Economía y Competitividad.
Start date: 2012.
End date: 2015
- Principal investigator: Juan José Vaquero López
Title: Detector de radiación gamma compatible con resonancia magnética (MARENGO).
Funding body: Ministerio de Ciencia e Innovación.
Start date: 2012.
End date: 2014.
- Principal investigator: Juan José Vaquero López
Title: Imagen médica multimodal avanzada en el tiempo real (ARTEMIS).
Funding body: Comunidad de Madrid.
Start date: 2010.
End date: 2014.
- Principal investigator: Javier Pascau González-Garzón
Title: Desarrollo Tecnológico Salud. "Navegación y guiado de aceleradores móviles para tratamientos de radioterapia intraoperatoria".
Funding body: Instituto de Salud Carlos III.
Start date: 2015.
End date: 2016
- Principal investigator: Manuel Desco Menéndez
Title: Infraestructura científico-tecnológica 2013 "Dotación complementaria para la Unidad de Medicina y Cirugía Experimental".
Funding body: Ministerio de Economía y Competitividad.
Start date: 2013.
End date: 2015
- Principal investigator: María Luisa Soto Montenegro
Title: Proyecto FIS 2014. "Terapias preventivas en la aparición de desarrollo de la esquizofrenia: Estudios de imagen in vivo (PET y MRI) y de comportamiento".
Funding body: Instituto de Salud Carlos III.
Start date: 2015.
End date: 2017
- Principal investigator: Manuel Desco Menéndez
Title: Brade-CM. Grupos de Investigación de la CM en Tecnologías "Ingeniería de datos inspirada en el cerebro".
Funding body: Consejería de Educación. Comunidad de Madrid.
Start date: 2014.
End date: 2018.

- Principal investigator: Manuel Desco Menéndez
Title: Brade-CM. Grupos de Investigación de la CM en Tecnologías "Ingeniería de datos inspirada en el cerebro".
Funding body: Consejería de Educación. Comunidad de Madrid.
Start date: 2014.
End date: 2018.
- Principal investigator: Manuel Desco Menéndez
Title: Estudio de Viabilidad e Innovación en Salud "Nuevo Sistema integral de radiografía".
Funding body: Fundación para la Investigación y la Prospectiva en Salud en España (FIPSE)
Start date: 2015.
End date: 2016

Theses

| Doctoral student | Title | Director | University |
|------------------------------------|--|--|-----------------------------------|
| Paula Montesinos Suárez de la Vega | Advanced acquisition and reconstruction techniques in magnetic resonance imaging | Manuel Desco Menéndez; Juan Felipe Pérez-Juste Abascal | Universidad Carlos III de Madrid |
| Yasser Alemán Gómez | Advanced morphometric techniques applied to the study of human brain anatomy | Manuel Desco Menéndez | Universidad Politécnica de Madrid |
| Cristina Chavarrías Navas | Estudios funcionales mediante resonancia magnética en pequeños animales | Manuel Desco Menéndez, Juan Felipe Pérez-Juste Abascal | Universidad Carlos III de Madrid |

Patents and intellectual property registrations

Patents:

- Title: Aparato de Tomografía Multimodalidad.
Reference: P200502612; PCT/ES2006/070160; US2009213983; EP1947835.
Owner: FIBHGM - SUINSA MEDICAL SYSTEMS, S.A.
Inventors: Manuel Desco Menéndez, Juan José Vaquero López.
- Title: Incubadora para Imagen con Radiación No Ionizante.
Reference: PCT/ES2007/070214; EP2221035; US2011125010.
Owner: FIBHGM.
Inventors: Juan José Vaquero, Manuel Desco Menéndez, Manuel Sánchez Luna.
- Title: Aparato de adquisición de datos para tomografía computerizada por emisión de radiación gamma y su funcionamiento.
Reference: P200702836.
Owner: FIBHGM-UPM.
Inventors: Juan José Vaquero López, Manuel Desco Menéndez, Pedro Guerra Gutiérrez, Andrés Santos y Lleo, Giancarlo Sportelli.
- Title: Procedimiento y dispositivo para la detección y discriminación de eventos válidos en detectores de radiación gamma.
Reference: P2011290029; PCT/ES2009/070456.
Owner: FIBHGM.
Inventors: Eduardo Lage Negro, Gustavo Tapias Gil, José Antonio Sánchez González, Javier del Pino Vaquero, Juan José Vaquero López, Manuel Desco Menéndez.
- Title: Método para visualizar la información contenida en imágenes tridimensionales del corazón.
Reference: P201000363; PCT/ES2011/000069; US20130069945.
Owner: FIBHGM-UPM.
Inventors: Esther Pérez David, Ángel Arenal Maíz, Javier Bermejo Thomas, Francisco Fernández Avilés, Manuel Desco Menéndez, Mª Jesús Ledesma Carballo, Andrés de Santos Lleó, José Luis Rubio Guivernau.

Intellectual property:

- Title: MANGOOSE.
Reference no., Registry no. 02/2010/4412.
Owner: FIBHGM.
Authors: Javier Pascau González-Garzón, Manuel Desco Menéndez, Mónica Abellá García, Alejandro Sisnega Crespo, Juan José Vaquero López.
- Title: CUSQ: CARDIO US/Quantification.
Reference no., Registry no. 16/2010/303.
Owner: FIBHGM-UPM.
Authors: Manuel Desco Menéndez, María Jesús Ledesma Carbayo, Andrés Santos Lleó.
- Title: FIRST (Fast Iterative Reconstruction Software for Tomography).
Reference: Registrado.
Reference no., Notarial registry no.: 5095.
Owner: FIBHGM.
Authors: José Manuel Udiás Moinelo, Joaquín López Herraiz, Samuel España Palomares, Manuel Desco Menéndez, Juan José Vaquero López.
- Title: QuTIS (Quantification Tool for in vivo Spectroscopy).
Reference no., Notarial registry no.: 5095.
Owner: FIBHGM.
Authors: Manuel Desco Menéndez, Juan José Vaquero.
- Title: MMWKS.
Reference: Registered.
Owner: FIBHGM.
Inventors: Manuel Desco Menéndez, Juan José Vaquero.

Publications

Total impact factor: 138.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Marcos JV; Munoz-Barrutia A; Ortiz-de-Solorzano C; Cristobal G. *Quantitative Assessment of Emphysema Severity in Histological Lung Analysis*. ANNALS OF BIOMEDICAL ENGINEERING. 2015; 43(10) 2515-2529. IF: 2.887. Quartile: 1. (Article).
- Sole CV; Calvo FA; Lizarraga S; González-Bayon L; Segundo CGS; Desco M; Garcia-Sabrido JL. *Single-Institution Multidisciplinary Management of Loco-regional Oligo-Recurrent Pelvic Malignancies: Long-Term Outcome Analysis*. ANNALS OF SURGICAL ONCOLOGY. 2015; 22. S1247-S1255. IF: 3.655. Quartile: 1. (Article).
- Vaquero JJ; Kinahan P. *Positron Emission Tomography: Current Challenges and Opportunities for Technological Advances in Clinical and Preclinical Imaging Systems*. ANNUAL REVIEW OF BIOMEDICAL ENGINEERING. 2015; 17. 385-414. IF: 10.256. Quartile: 1. (Review).
- Cuadrado-Berrocal I; Gómez-Gaviro MV; Benito Y; Barrio A; Bermejo J; Fernández-Santos ME; Sánchez PL; Desco M; Fernández-Aviles F; Fernández-Velasco M;. *A labdane diterpene exerts ex vivo and in vivo cardioprotection against post-ischemic injury: Involvement of AKT-dependent mechanisms*. BIOCHEMICAL PHARMACOLOGY. 2015; 93(4) 428-439. IF: 5.091. Quartile: 1. (Article).
- Gordaliza PM; Mateos-Pérez JM; Montesinos P; Guzmán-de-Villoria JA; Desco M; Vaquero JJ. *Development and validation of an open source quantification tool for DSC-MRI studies*. COMPUTERS IN BIOLOGY AND MEDICINE. 2015; 58. 56-62. IF: 1.521. Quartile: 2. (Article).
- Herbec A; Kauppi JP; Jola C; Tohka J; Pollick FE. *Differences in fMRI intersubject correlation while viewing unedited and edited videos of dance performance*. CORTEX. 2015; 71. 341-348. IF: 4.314. Quartile: 1. (Article).

- Rodríguez-Oroz MC; Gago B; Clavero P; Delgado-Alvarado M; García-García D; Jiménez-Urbieto H. *The Relationship Between Atrophy and Hypometabolism: Is It Regionally Dependent in Dementias?*. CURRENT NEUROLOGY AND NEUROSCIENCE REPORTS. 2015; 15(7). IF: 2.961. Quartile: 2. (Review).
- Santiago-Mozos R; Rojo-Álvarez JL; Antoranz JC; Desco M; Rodríguez-Pérez D; Yotti R; Bermejo J. *On feature extraction for noninvasive kernel estimation of left ventricular chamber function indices from echocardiographic images*. DIGITAL SIGNAL PROCESSING. 2015; 39. 63-79. IF: 1.444. Quartile: 2. (Article).
- Rapado-Castro M; Bartholomeusz CF; Castro-Fornieles J; González-Pinto A; Otero S; Baeza I; Moreno C; Graell M; Janssen J; Bargallo N; Pantelis C; Desco M; Arango C. *Gender effects on brain changes in early-onset psychosis*. EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 2015; 24(10) 1193-1205. IF: 3.339. Quartile: 1. (Article).
- Pina-Camacho L; García-Prieto J; Parellada M; Castro-Fornieles J; González-Pinto AM; Bombin I; Graell M; Paya B; Rapado-Castro M; Janssen J; Baeza I; Del Pozo F; Desco M. *Predictors of schizophrenia spectrum disorders in early-onset first episodes of psychosis: a support vector machine model*. EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 2015; 24(4) 427-440. IF: 3.339. Quartile: 1. (Article).
- Mallorqui-Baque N; Bulbena A; Roe-Velle N; Hoekzema E; Carmona S; Barba-Muller E; Fauquet J; Pailhez G; Vilarroya O. *Emotion processing in joint hypermobility: A potential link to the neural bases of anxiety and related somatic symptoms in collagen anomalies*. EUROPEAN PSYCHIATRY. 2015; 30(4) 454-458. IF: 3.912. Quartile: 1. (Article).
- Arranz A; Ripoll J. *Advances in optical imaging for pharmacological studies*. FRONTIERS IN PHARMACOLOGY. 2015; 6. IF: 4.418. Quartile: 1. (Review).
- Carmona S; Hoekzema E; Castellanos FX; García-García D; Lage-Castellanos A; Van Dijk KRA; Navas-Sánchez FJ; Martínez K; Desco M; Sepulcre J. *Sensation-to-cognition cortical streams in attention-deficit/hyperactivity disorder*. HUMAN BRAIN MAPPING. 2015; 36(7) 2544-2557. IF: 4.962. Quartile: 1. (Article).
- Martínez K; Madsen SK; Joshi AA; Joshi SH; Romaan FJ; Villalon-Reina J; Buragaleta M; Karama S; Janssen J; Marinetto E; Desco M; Thompson PM; Colom R. *Reproducibility of brain-cognition relationships using three cortical surface-based protocols: An exhaustive analysis based on cortical thickness*. HUMAN BRAIN MAPPING. 2015; 36(8) 3227-3245. IF: 4.962. Quartile: 1. (Article).
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- Sole CV; Calvo FA; Polo A; Cambeiro M; González C; Desco M; Martínez-Monge R. *Intraoperative Electron-Beam Radiation Therapy for Pediatric Ewing Sarcomas and Rhabdomyosarcomas: Long-Term Outcomes*. INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS. 2015; 92(5) 1069-1076. IF: 4.495. Quartile: 1. (Article).
- Kobylecki C; Langheinrich T; Hinz R; Vardy ERLC; Brown G; Martíño ME; Haense C; Richardson AM; Gerhard A; Anton-Rodríguez JM; Snowden JS; Neary D; Pontecorvo MJ; Herholz K. *F-18-Florbetapir PET in Patients with Frontotemporal Dementia and Alzheimer Disease*. JOURNAL OF NUCLEAR MEDICINE. 2015; 56(3) 386-391. IF: 5.849. Quartile: 1. (Article).
- Bos DJ; Merchan-Naranjo J; Martínez K; Pina-Camacho L; Balsa I; Boada L; Schnack H; Oranje B; Desco M; Arango C; Par. *Reduced Gyration Is Related to Reduced Interhemispheric Connectivity in Autism Spectrum Disorders*. JOURNAL OF THE AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY. 2015; 54(8) 668-676. IF: 7.182. Quartile: 1. (Article).
- Chavarrias C; Abascal JFPJ; Montesinos P; Desco M. *Exploitation of temporal redundancy in compressed sensing reconstruction of fMRI studies with a prior-based algorithm (PICCS)*. MEDICAL PHYSICS. 2015; 42(7) 3814-3821. IF: 2.496. Quartile: 2. (Article).
- Castellanos G; Fernández-Seara MA; Lorenzo-Betancor O; Ortega-Cubero S; Puigvert M; Uranga J; Vidorreta M; Irigoyen J; Lorenzo E; Munoz-Barrutia A; Ortiz-de-Solorzano C; Pastor P; Pastor MA. *Automated Neuromelanin Imaging as a Diagnostic Biomarker for Parkinson's Disease*. MOVEMENT DISORDERS. 2015; 30(7) 945-952. IF: 6.01. Quartile: 1. (Article).

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- López-Miranda V; Soto-Montenegro ML; Uranga-Ocio JA; Vera G; Herradon E; González C; Blas C; Martínez-Villaluenga M; López-Pérez AE; Desco M; Abalo R. *Effects of chronic dietary exposure to monosodium glutamate on feeding behavior, adiposity, gastrointestinal motility, and cardiovascular function in healthy adult rats.* NEUROGASTROENTEROLOGY AND MOTILITY. 2015; 27(11) 1559-1570. IF: 3.31. Quartile: 2. (Article).
- Soto-Montenegro ML; Vicente-Rodríguez M; Pérez-García C; Gramage E; Desco M; Herradon G. *Functional neuroimaging of amphetamine-induced striatal neurotoxicity in the pleiotrophin knockout mouse model.* NEUROSCIENCE LETTERS. 2015; 591. 132-137. IF: 2.107. Quartile: 3. (Article).
- Huttunen H; Tohka J. *Model selection for linear classifiers using Bayesian error estimation.* PATTERN RECOGNITION. 2015; 48(11) 3739-3748. IF: 3.399. Quartile: 1. (Article).
- Roman FJ; García-Rubio MJ; Privado J; Kessel D; López-Martín S; Martínez K; Shih PC; Tapia M; Serrano JM; Carretié L; Colom R. *Adaptive working memory training reveals a negligible effect of emotional stimuli over cognitive processing.* PERSONALITY AND INDIVIDUAL DIFFERENCES. 2015; 74. 165-170. IF: 1.946. Quartile: 2. (Article).
- Cal-González J; Moore SC; Park MA; Herraiz JL; Vaquero JJ; Desco M; Udías JM. *Improved quantification for local regions of interest in preclinical PET imaging.* PHYSICS IN MEDICINE AND BIOLOGY. 2015; 60(18) 7127-7149. IF: 2.811. Quartile: 1. (Article).
- Rieckher M; Kyriarissidis-Kokkinidis I; Zacharopoulos A; Kourmoulakis G; Tavernarakis N; Ripoll J; Zacharakis G. *A Customized Light Sheet Microscope to Measure Spatio-Temporal Protein Dynamics in Small Model Organisms.* PLOS ONE. 2015; 10(5). IF: 3.057. Quartile: 1. (Article).
- Jorge-Penas A; Izquierdo-Álvarez A; Aguilar-Cuenca R; Vicente-Manzanares M; García-Aznar JM; Van Oosterwyck H; De-Juan-Pardo EM; Ortiz-De-Solorzano C; Muñoz-Barrutia A. *Free Form Deformation-Based Image Registration Improves Accuracy of Traction Force Microscopy.* PLOS ONE. 2015; 10(12). IF: 3.057. Quartile: 1. (Article).
- Canales-Rodríguez EJ; Daducci A; Sotropoulos SN; Caruyer E; Aja-Fernández S; Radua J; Mendizabal JMY; Iturria-Medina Y; Melie-García L; Aleman-Gómez Y; Thiran JP; Sarro S; Pomarol-Clotet E; Salvador R. *Spherical Deconvolution of Multichannel Diffusion MRI Data with Non-Gaussian Noise Models and Spatial Regularization.* PLOS ONE. 2015; 10(10). IF: 3.057. Quartile: 1. (Article).
- Abascal JFPJ; Abella M; Sisniega A; Vaquero JJ; Desco M. *Investigation of Different Sparsity Transforms for the PICCS Algorithm in Small-Animal Respiratory Gated CT.* PLOS ONE. 2015; 10(4). IF: 3.057. Quartile: 1. (Article).
- Hadar R; Luisa Soto-Montenegro M; Gotz T; Wieske F; Sohr R; Desco M; Hamani C; Weiner I; Pascau J; Winter C. *Using a maternal immune stimulation model of schizophrenia to study behavioral and neurobiological alterations over the developmental course.* SCHIZOPHRENIA RESEARCH. 2015; 166(1-3) 238-247. IF: 4.453. Quartile: 1. (Article).
- Elvira G; García I; Gallo J; Benito M; Montesinos P; Holgado-Martín E; Ayuso-Sacido A; Penades S; Desco M; Silva A; García-Sanz JA. *Detection of mouse endogenous type B astrocytes migrating towards brain lesions.* STEM CELL RESEARCH. 2015; 14(1) 114-129. IF: 3.892. Quartile: 1. (Article).
- Valdivieso-Casique MF; Rodríguez R; Rodríguez-Bescos S; Lardies D; Guerra P; Ledesma MJ; Santos A; Ibanez P; Vidal M; Udías JM; Otaduy MA; Calama JA; López-Tarjuelo J; Santos-Miranda JA; Desco M; García-Vázquez V. *RADIANCE-A planning software for intra-operative radiation therapy.* TRANSLATIONAL CANCER RESEARCH. 2015; 4(2) 196-209. IF: 1.757. Quartile: 4. (Review).
- Ripoll J; Koberstein-Schwarz B; Ntziachristos V. *Unleashing Optics and Optoacoustics for Developmental Biology.* TRENDS IN BIOTECHNOLOGY. 2015; 33(11) 679-691. IF: 12.065. Quartile: 1. (Review).

**Publications in journals without impact factor
in Journal Citation Reports:**

- Gómez-García PA; Arranz A; Fresno M; Desco M; Mahmood U; Vaquero JJ; Ripoll J. *Fluorescence multi-scale endoscopy and its applications in the study and diagnosis of gastro-intestinal diseases: set-up design and software implementation.* BIOPHOTONICS SOUTH AMERICA. 2015; 9531. (Proceedings Paper).

| | No. | IF |
|---|-----|-------|
| Own publications | 10 | 49.2 |
| Joint publications | 24 | 89.1 |
| First-decile publications | 15 | 82.7 |
| First-quartile publications | 26 | 120.8 |
| Second-quartile publications | 6 | 13.7 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 1 | 1.8 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 35 | 138.4 |

Signal processing

Group director: **ANTONIO ARTÉS RODRÍGUEZ**

Type: In the process of consolidation

Research lines

- ▶ L1: Merging of data from monitoring devices.
- ▶ L2: Data mining in psychiatry.
- ▶ L3: Monitoring.
- ▶ L4: Ambulatory monitoring with wearable devices.
- ▶ L5: Diagnostic support in patients with heart arrhythmias.
- ▶ L6: Signal processing and application of machine learning in medicine.

The Signal Processing Group (SPG), Department of Signal Theory and Communications, Universidad Carlos III de Madrid, is carrying out research in signal processing, machine learning, and information theory by developing new methods and algorithms and by applying them to many healthcare fields. The group members have different backgrounds and maintain sustained collaborations with many academic and clinical research groups. Research activity in healthcare focuses on the following topics:

- Characterization of behavior from mobile data.
- Ambulatory monitoring using portable and wearable devices.
- Diagnostic tools for cardiac electrophysiology.
- Data mining and probabilistic modeling based on healthcare data, including electronic health records and genomic information, with emphasis on personalized medicine.

Group members

- **Ömer Deniz Akyildiz:** Trainee.
- **Antonio Artés Rodríguez:** Group Director.
- **Ángel Bravo Santos:** Senior researcher.
- **Francisco Jesús Cadenas Callejón:** Support technician.
- **Victor Elvira Arregui:** Postdoctoral.
- **Melanie Fernández Pradier:** Assistant.
- **Francisco Hernando Gallego:** Trainee.
- **Carlos Andrés Hernández Mayoral:** Support technician.
- **Tobias Koch:** Senior researcher.
- **Alejandro Lancho Gallego:** FPU.
- **José Miguel Leiva Murillo:** Senior researcher.
- **Yanfang Liu:** Trainee.
- **Pablo Martínez Olmos:** Juan de la Cierva.
- **Joaquín Míguez Arenas:** Senior researcher.
- **Alfredo Nazábal Rentería:** FPI.
- **Fernando Pérez Cruz:** Senior researcher.
- **David Ramírez García:** Senior researcher.
- **Gonzalo Ríos Muñoz:** Trainee.
- **Alberto Valera Pérez:** Trainee.
- **Gonzalo Vázquez Vilar:** Juan de la Cierva.
- **Manuel Vázquez López:** Senior researcher.
- **Grace Villacres Estrada:** Trainee.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|--------------------------------|---|--|----------------------------------|
| Francisco Jesús Rodríguez Ruiz | Bayesian nonparametrics for time series modeling | Fernando Pérez-Cruz | Universidad Carlos III de Madrid |
| Pablo García Moreno | Bayesian nonparametrics for crowdsourcing | Antonio Artés Rodríguez, Fernando Pérez-Cruz | Universidad Carlos III de Madrid |
| Eugenia Koblents Lapteva | Nonlinear Population Monte Carlo Methods for Bayesian Inference | Joaquín Míguez Arenas | Universidad Carlos III de Madrid |

Publications

Total impact factor: 29.9

Publications in journals with impact factor indexed in Journal Citation Reports:

- Salamanca L; Murillo-Fuentes JJ; Olmos PM; Pérez-Cruz F; Verdu S. *Approaching the DT Bound Using Linear Codes in the Short Blocklength Regime*. IEEE COMMUNICATIONS LETTERS. 2015; 19(2) 123-126. IF: 1.291. Quartile: 2. (Article).
- Elvira V; Martíno L; Luengo D; Bugallo MF. *Efficient Multiple Importance Sampling Estimators*. IEEE SIGNAL PROCESSING LETTERS. 2015; 22(10) 1757-1761. IF: 1.661. Quartile: 2. (Article).
- Guzmán BG; Serrano AL; Jiménez VPG. *Cooperative Optical Wireless Transmission for Improving Performance in Indoor Scenarios for Visible Light Communications*. IEEE TRANSACTIONS ON CONSUMER ELECTRONICS. 2015; 61(4) 393-401. IF: 1.12. Quartile: 2. (Article).

- Olmos PM; Urbanke RL. *A Scaling Law to Predict the Finite-Length Performance of Spatially-Coupled LDPC Codes*. IEEE TRANSACTIONS ON INFORMATION THEORY. 2015; 61(6) 3164-3184. IF: 1.737. Quartile: 2. (Article).
- Martíno L; Elvira V; Luengo D; Corander J. *An Adaptive Population Importance Sampler: Learning From Uncertainty*. IEEE TRANSACTIONS ON SIGNAL PROCESSING. 2015; 63(16) 4422-4437. IF: 2.624. Quartile: 1. (Article).
- Ramírez D; Schreier PJ; Via J; Santamaría I; Scharf LL. *Detection of Multivariate Cyclostationarity*. IEEE TRANSACTIONS ON SIGNAL PROCESSING. 2015; 63(20) 5395-5408. IF: 2.624. Quartile: 1. (Article).
- Bravo-Santos A; Djuric PM. *Detectors for Cooperative Mesh Networks With Decode-and-Forward Relays*. IEEE TRANSACTIONS ON SIGNAL PROCESSING. 2015; 63(1) 5-17. IF: 2.624. Quartile: 1. (Article).
- Luengo D; Monzon S; Trigano T; Via J; Artes-Rodríguez A. *Blind analysis of atrial fibrillation electrograms: A sparsity-aware formulation*. INTEGRATED COMPUTER-AIDED ENGINEERING. 2015; 22(1) 71-85. IF: 4.981. Quartile: 1. (Article).
- Moreno PG; Artes-Rodríguez A; Teh YW; Pérez-Cruz F. *Bayesian Nonparametric Crowdsourcing*. JOURNAL OF MACHINE LEARNING RESEARCH. 2015; 16. 1607-1627. IF: 2.45. Quartile: 1. (Article).
- Manzano M; Espinosa F; Bravo-Santos AM; Gardel-Vicente A. *Cognitive Self-Scheduled Mechanism for Access Control in Noisy Vehicular Ad Hoc Networks*. MATHEMATICAL PROBLEMS IN ENGINEERING. 2015. IF: 0.644. Quartile: 3. (Article).
- Read J; Martíno L; Olmos PM; Luengo D. *Scalable multi-output label prediction: From classifier chains to classifier trellises*. PATTERN RECOGNITION. 2015; 48(6) 2096-2109. IF: 3.399. Quartile: 1. (Article).
- Koblents E; Miguez J. *A population Monte Carlo scheme with transformed weights and its application to stochastic kinetic models*. STATISTICS AND COMPUTING. 2015; 25(2) 407-425. IF: 1.786. Quartile: 1. (Article).

Publications in journals not indexed in Journal Citation Reports:

- Vázquez-Vilar G; Martínez A and Guillen i Fabregas A. *A Derivation of the Cost-Constrained Sphere-Packing Exponent*. 2015 IEEE Int. Symp. Inf. Theory (ISIT 2015). 2015. (Proceedings Paper).
- Nazabal A; Artes-Rodriguez A. *Discriminative Spectral Learning of Hidden Markov Models for Human Activity Recognition*. 2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). 2015. (Proceedings Paper).
- Martíno L; Elvira V; Luengo D; Corander J. *Interacting Parallel Markov Adaptive Importance Sampling*. 23th European Signal Processing Conference (EUSIPCO 2015). 2015. (Proceedings Paper).
- Luengo D; Ríos-Muñoz G; Elvira V. *Causality Analysis of Atrial Fibrillation Electrograms*. 42th Computing in Cardiology. 2015. (Proceedings Paper).
- Valera I; Ruiz FJR; Svensson L and Pérez-Cruz F. *Infinite Factorial Dynamical Model*. Advances in Neural Information Processing. 2015. (Proceedings Paper).
- Valera I; Ruiz FJR; Svensson L and Pérez-Cruz F. *A Bayesian Nonparametric Approach for Blind Multiuser Channel Estimation*. European Signal Processing Conference. 2015; 2766 - 2770. (Proceedings Paper).
- Santos Velázquez I; Murillo-Fuentes JJ; Olmos PM. *Block expectation propagation equalization for ISI channels*. European Signal Processing Conference. 2015. (Proceedings Paper).
- Olmos PM; Mitchell DGM ; Daniel Costello Jr. *Analyzing the Finite-Length Performance of Generalized LDPC Codes*. IEEE 2015 International Symposium on Information Theory. 2015. (Proceedings Paper).
- Stinner M; Olmos PM. *Finite-Length Performance of Multi-Edge Protograph-Based Spatially Coupled LDPC Codes*. IEEE 2015 International Symposium on Information Theory. 2015. (Proceedings Paper).
- Elvira V; Martíno L; Luengo D; and Bugallo M. *On Sample Generation and Weight Calculation in Multiple Importance Sampling*. IEEE Conference on Signals, Systems, and Computers (ASILOMAR 2015). 2015. (Proceedings Paper).
- Dashi M; Yiu S; Siamak Yousefi; Pérez-Cruz F and Claussen H. *RSSI Localization with Gaussian Processes and Tracking*. IEEE Globecom. 2015. (Proceedings Paper).
- Martíno L; Elvira V; Luengo D; Artés-Rodríguez A; Corander J. *Smelly Parallel MCMC Chains*. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2015). 2015. (Proceedings Paper).
- Luengo D; Martíno L; Elvira V; Bugallo M. *Efficient Linear Combination of Partial Monte Carlo Estimators*. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2015). 2015. (Proceedings Paper).
- Fernández-Bes J; Elvira V; Van Vaerenbergh S. *A Probabilistic Least-Mean-Squares Filter*. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2015). 2015. (Proceedings Paper).
- Elvira V; Martíno L; Luengo D; Corander J. *A Gradient Adaptive Population Importance Sampler*. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2015). 2015. (Proceedings Paper).
- Luengo D; Martíno L; Elvira V; Bugallo M. *Bias Correction for Distributed Bayesian Estimators*. IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2015). 2015. (Proceedings Paper).
- Pérez-Cruz F and Huang H. *A Blind Nonparametric Non-line of Sight Bias Model for Accurate Localization*. Information Theory and Applications. 2015. (Proceedings Paper).
- Hacer UG; Boran A; Forlivesi C; Liekens W; Pérez-Cruz F and Kawsar F. *Sensing WiFi Network for Personal Object Analytics*. International Conference on Internet of Things. 2015. (Proceedings Paper).

- Martín-Fernández L; Ruiz DP; Torija AJ; and Míguez J. *A Bayesian Method for Model Selection in Environmental Noise Prediction*. Journal of Environmental Informatics. 2015. (Article).
- Ruiz FJR and Pérez-Cruz F. *A Generative Model for Predicting Outcomes in College Basketball*. Journal of Quantitative Analysis of Sports. 2015; Volume 11, Issue 1, Pages 39–52. (Article).
- Pradier MF; Stark S; Hyland S; Vogt JE; Rätsch G and Pérez-Cruz F. *Large-Scale Sentence Clustering from Electronic Health Records for Genetic Associations in Cancer*. NIPS Workshop on "Machine Learning for Computational Biology". 2015. (Proceedings Paper).
- Pradier MF; Karaletsos T; Stark S; Vogt JE and Pérez-Cruz F. *Bayesian Poisson Factorization for Genetic Associations with Clinical Features in Cancer*. NIPS Workshop on "Machine Learning for Healthcare Workshop". 2015. (Proceedings Paper).
- Pradier MF; and Pérez-Cruz F. *Infinite Mixture of Global Gaussian Processes*. NIPS Workshop on Bayesian Non-parametric: the Next Generation. 2015. (Proceedings Paper).
- Míguez J; Mariño IP. *A nonlinear population Monte Carlo scheme for Bayesian parameter estimation in a stochastic intercellular network model*. Proc. of IEEE CAMSAP. 2015. (Proceedings Paper).

| | No. | IF |
|---|-----|------|
| Own publications | 7 | 17.9 |
| Joint publications | 5 | 9.1 |
| First-decile publications | 2 | 8.4 |
| First-quartile publications | 7 | 20.5 |
| Second-quartile publications | 4 | 5.8 |
| Third-quartile publications | 1 | 0.6 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 25 | - |
| Total publications (including publications without IF) | 37 | 26.9 |

Computer architecture, communications, and systems

Group director: JESÚS CARRETERO PÉREZ

Type: In the process of consolidation

Research programs and lines

P1: High-performance computing

- ▶ P1.L1: Parallel processing.
- ▶ P1.L2: Optimizing performance with accelerators (GPU, Xeon PHI).
- ▶ P1.L3: Medical image processing.
- ▶ P1.L4: Large-scale physical systems simulation (energy, traffic).

P2: Intensive data computing

- ▶ P2.L1: Optimization of input/output for large-scale systems.
- ▶ P2.L2: Parallel-file and object-based systems.
- ▶ P2.L3: Efficient management of large volumes of data (scale, energy, interoperability).
- ▶ P2.L4: Optimization of intensive data application workflows.
- ▶ P2.L5: Large-scale epidemiological simulations with social data.

P3: Distributed systems

- ▶ P3.L1: Cloud computing.
- ▶ P3.L2: Large-scale distributed storage systems.
- ▶ P3.L3: Real-time system monitoring and data management.

Group members

- **Silvina Caino Lores:** FPU.
- **Alejandro Calderón Mateos:** Postdoctoral.
- **Jesús Carretero Pérez:** Group Director.
- **David Expósito Singh:** Postdoctoral.
- **Javier Fernández Muñoz:** Postdoctoral.
- **Alberto García Fernández:** FPU.
- **Félix García Carballeira:** Senior researcher.
- **Francisco Javier García Blas:** Postdoctoral.
- **José Daniel García Sánchez:** Postdoctoral.
- **Carlos Gómez Carrasco:** FPU.
- **Florín Isaila:** Postdoctoral.
- **Pablo Llopis Sanmillán:** FPU.
- **Daniel Ortiz Nieto:** FPU.
- **Francisco José Rodrigo Duro:** FPU.
- **Luis Miguel Sánchez García:** Postdoctoral.
- **Estefanía Serrano López:** FPU.
- **Rafael Sotomayor Fernández:** FPU.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|--------------------------|---|--|----------------------------------|
| Gabriel González Castañé | New simulation techniques for energy aware cloud computing environments | Jesús Carretero Pérez; Alberto Núñez Covarrubias | Universidad Carlos III de Madrid |

Publications

Total impact factor: 9.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Chessa S; Escolar S; Pelagatti S; Carretero J. *Multi-dimensional recursive routing with guaranteed delivery in Wireless Sensor Networks*. COMPUTER COMMUNICATIONS. 2015; 57. 85-99. IF: 2.099. Quartile: 1. (Article).
- Singh DE; Isaila F; García F; Carretero J. *Magio: using mobile agents to enhance parallel I/O*. COMPUTER SYSTEMS SCIENCE AND ENGINEERING. 2015; 30(2) 93-107. IF: 0.291. Quartile: 4. (Article).
- Carretero J; García-Bias J; Neytcheva MG. *Introduction to the special section on "Optimization of parallel scientific applications with accelerated high-performance computers"*. COMPUTERS & ELECTRICAL ENGINEERING. 2015; 46. 78-80. IF: 1.084. Quartile: 2. (Editorial Material).
- Serrano E; Blas JG; Carretero J. *A comparative study of an X-ray tomography reconstruction algorithm in accelerated and cloud computing systems*. CONCURRENCY AND COMPUTATION-PRACTICE & EXPERIENCE. 2015; 27(18) 5538-5556. IF: 0.942. Quartile: 3. (Article).
- Martín G; Singh DE; Marinescu MC; Carretero J. *Towards efficient large scale epidemiological simulations in EpiGraph*. PARALLEL COMPUTING. 2015; 42. 88-102. IF: 1. Quartile: 3. (Article).
- Martín G; Singh DE; Marinescu MC; Carretero J. *Enhancing the performance of malleable MPI applications by using performance-aware dynamic reconfiguration*. PARALLEL COMPUTING. 2015; 46. 60-77. IF: 1. Quartile: 3. (Article).

- Karatza HD; Carretero J. *Special issue on "Techniques and applications for sustainable ultrascale computing systems"*. SIMULATION MODELLING PRACTICE AND THEORY. 2015; 58. 1-2. IF: 1.482. Quartile: 1. (Editorial Material).
- Duro FR; Bias JG; Higuero D; Pérez O; Carretero J. *CoSMiC: A hierarchical cloudlet-based storage architecture for mobile clouds*. SIMULATION MODELLING PRACTICE AND THEORY. 2015; 50. 3-19. IF: 1.482. Quartile: 1. (Article).

Publications in journals without impact factor indexed in the Journal Citation Reports:

- Petcu D; Iuhasz G; Pop D; Talia D; Carretero J; Prodan R; Fahringer T; Grasso I; Doallo R; Martín MJ; Fraguela BB; Trobec R; Depolli M; Rodríguez FA; De Sande F; Da Costa G; Pierson JM; Anastasiadis S; Bartzokas A; Lolis C; Goncalves P; Brito F; Brown N. *ON PROCESSING EXTREME DATA*. SCALABLE COMPUTING-PRACTICE AND EXPERIENCE. 2015; 16(4) 467-489. (Article).
- Carretero J; García-Bias J; Gesing S. *INTRODUCTION TO THE SPECIAL ISSUE ON CLOUD FOR HEALTH*. SCALABLE COMPUTING-PRACTICE AND EXPERIENCE. 2015; 16(1) III-IV. (Editorial Material).

| | No. | IF |
|---|-----------|------------|
| Own publications | 8 | 9.4 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 3 | 5.1 |
| Second-quartile publications | 1 | 1.1 |
| Third-quartile publications | 3 | 2.9 |
| Fourth-quartile publications | 1 | 0.3 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 10 | 9.4 |

Nonparametric statistical and intensive computing techniques

Group director: JUAN ROMO URROZ

Type: In the process of consolidation

Research programs and lines

P1: Big data

- ▶ P1.L1: Genetic studies with massive databases.
- ▶ P1.L2: Design of genetic networks.
- ▶ P1.L3: Analysis and selection of polymorphisms.

P2: Analysis of complex data

- ▶ P2.L1: Analysis of functional data.
- ▶ P2.L2: Analysis of microarray data.
- ▶ P2.L3: Analysis of images.

P3: Survival analysis

- ▶ P3.L1: Study of the efficacy of treatment using confidence intervals.
- ▶ P3.L2: Definition of reliability measures and associated comparisons.
- ▶ P3.L3: Use of MAP models for analysis of the appearance of events.

Group members

- Carmen Aguilera Morillo: Postdoctoral.
- Ana Arribas Gil: Postdoctoral.
- Elisa Cabana Garcerán Del Vall: Predoctoral.
- Rosa Elvira Lillo Rodríguez: Senior researcher.
- Joanna Rodríguez César: Predoctoral.
- Juan Romo Urroz: Group Director.
- Carlo Sguera: Postdoctoral.

NONPARAMETRIC STATISTICAL AND INTENSIVE COMPUTING TECHNIQUES

Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------------|---|------------------------------------|----------------------------------|
| Nicola Mingotti | Functional Linear Models | Juan Romo Urroz; Rosa Elvira Lillo | Universidad Carlos III de Madrid |
| Esdras Joseph | <i>The Mahalanobis distance for functional data with applications in statistical problems</i> | Rosa Elvira Lillo | Universidad Carlos III de Madrid |
| Joanna Rodríguez César | <i>Markovian arrival processes: identifiability and extesnisons</i> | Rosa Elvira Lillo | Universidad Carlos III de Madrid |

Publications

Total impact factor: 8.0

Publications in journals with impact factor indexed in Journal Citation Reports:

- Arribas-Gil A; De la Cruz R; Lebarbier E; Meza C. *Classification of longitudinal data through a semiparametric mixed-effects model based on lasso-type estimators.* BIOMETRICS. 2015; 71(2) 333-343. IF: 1.36. Quartile: 2. (Article).
- Aguilera-Morillo MC; Aguilera AM. *P-spline Estimation of Functional Classification Methods for Improving the Quality in the Food Industry.* COMMUNICATIONS IN STATISTICS-SIMULATION AND COMPUTATION. 2015; 44(10) 2513-2534. IF: 0.397. Quartile: 4. (Article).
- Torres R; Lillo RE; Laniado H. *A directional multivariate value at risk.* INSURANCE MATHEMATICS & ECONOMICS. 2015; 65. 111-123. IF: 1.378. Quartile: 2. (Article).

- Rodríguez J; Lillo RE; Ramírez-Cobo P. *Failure modeling of an electrical N-component framework by the non-stationary Markovian arrival process.* RELIABILITY ENGINEERING & SYSTEM SAFETY. 2015; 134. 126-133. IF: 2.498. Quartile: 1. (Article).
- Arribas-Gil A; Romo J. *Discussion of "Multivariate functional outlier detection".* STATISTICAL METHODS AND APPLICATIONS. 2015; 24(2) 263-267. IF: 0.375. Quartile: 4. (Editorial Material).
- Torrado N; Lillo RE. *Likelihood ratio comparisons among spacings related to both one or two samples.* STATISTICS. 2015; 49(4) 831-841. IF: 0.53. Quartile: 4. (Article).
- Galeano P; Joseph E; Lillo RE. *The Mahalanobis Distance for Functional Data With Applications to Classification.* TECHNOMETRICS. 2015; 57(2) 281-291. IF: 1.435. Quartile: 2. (Article).

| | No. | IF |
|---|----------|------------|
| Own publications | 5 | 4.1 |
| Joint publications | 2 | 3.9 |
| First-decile publications | 1 | 2.5 |
| First-quartile publications | 1 | 2.5 |
| Second-quartile publications | 3 | 4.2 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 3 | 1.3 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 7 | 8.0 |

AREA 2

Area coordinator:
Francisco Fernández-Avilés Díaz

Cardiovascular diseases

Cardiovascular diseases constitute a major health problem in developed countries, both because of their prevalence and incidence and because of their severity; hence the importance of a research area for cardiovascular diseases in the liSGM. The Area of Cardiovascular Diseases covers all aspects of this modern epidemic, through basic research and, very importantly, clinical research, including various emerging and associated clinical groups from a variety of hospital services.

A particularly interesting characteristic of this Area is its cooperative spirit. Its main group coordinates the national Red de Investigación Cardiovascular (RIC [*Cooperative Network for Research on Cardiovascular Disease*]) for the study of cardiovascular diseases, which is funded by the Instituto de Salud Carlos III. Of particular interest, this area includes basic research groups belonging to the Universidad Complutense and envisages wide-ranging agreements with American universities for the development of an ambitious program for the generation of artificial organs (SABIO Project).

In addition to such important ongoing projects, the Area of Cardiovascular Diseases has forged an ambitious set of objectives for the coming years, including promotion of basic research laboratories, increased funding from the EU's Seventh Framework Programme for Research and Technological Development, and development of a model for the evaluation and identification of intellectual property products.

Finally, the Area of Cardiovascular Diseases places particular emphasis on undergraduate education and, importantly, training for research personnel.

Research lines and axes

Strategic axes

- ▶ A1: Consolidation of research lines in cardiovascular diseases.
- ▶ A2: Consolidation of training.
- ▶ A3: Consolidation of infrastructure.
- ▶ A4: R+D+i.

Strategic lines

Axis 1: Consolidation of research lines in cardiovascular diseases

1. Consolidation of the basic research area

Strategic objectives:

- Develop animal models for cardiovascular experimentation.
- Cryopreservation of decellularized tissue and stem cells.
- Model of cerebral ischemia and neuroprotection.

2. Leadership in national and European research projects

Strategic objectives:

- Apply for research projects in FP7.
- Become national leaders in the creation and development of clinical trials.

3. Consolidation of the translational research area of the cardiac cellular electrophysiology group

Strategic objectives:

- Run the human heart sample processing laboratory at HGUGM.
- Obtain quality assurance certification in the Pharmacology Department of the School of Medicine.

(Continued on next page)

Strategic lines (*cont.*)

4. Maintenance and consolidation of scientific output

Strategic objectives:

- Increase the number of publications from preclinical research.
- Increase participation in intramural and extramural cooperative studies.
- Perform clinical trials.
- Increase the number of publications on translational research.

5. Diversification of funding sources by consolidating several principal investigators

Strategic objectives:

- Increase participation in national cooperative studies (networks, consortia) and international cooperative studies.
- Scale applications for competitive funding calls in the National Plan.
- Apply for private financing through competitive calls.
- Obtain private funding by converging the group lines with the different private funding bodies.
- Increase funding for predoctoral staff.

Axis 2: Consolidation of training

1. Increase opportunities for postgraduate training

Strategic objective:

- Promote preparation of doctoral theses.

2. Promote temporary training periods for researchers in prestigious laboratories

Axis 3: Consolidation of infrastructure

1. Distribution and equipment of the Bioartificial Organ Laboratory

Axis 4: R+D+i

1. Development of a model for evaluating and identifying intellectual property products

2. Development of spin-off models with the hospital and the university

Groups in AREA 2

Cardiovascular diseases



- ▶ Natural history of heart disease
- ▶ Cardiovascular pathophysiology
- ▶ Cardiac cellular electrophysiology
- ▶ Cardiology and heart transplant in children
- ▶ Blood lipids and cardiovascular risk
- ▶ Acute cerebral ischemia: stroke

Natural history of heart disease

Group director: FRANCISCO FERNÁNDEZ-AVILÉS DÍAZ

Type: Consolidated

Research lines

- ▶ L1: Heart failure.
- ▶ L2: Coronary syndromes and chronic ischemic heart disease.
- ▶ L3: Valve disease.
- ▶ L4: Regenerative medicine.
- ▶ L5: Heart imaging.
- ▶ L6: Electrophysiology and arrhythmias.

Group members

- Manuel Abeytua Jiménez: Postdoctoral.
- Alejandra Acosta Ocampo: Other.
- Andrés Alonso García: Other.
- Lucía Alvaredo Olmos: Management.
- Ángel Arenal Maíz: Senior researcher.
- Felipe Atienza Fernández: Senior researcher.
- Ana Ayesta López: Other.
- Javier Bermejo Thomas: Senior researcher.
- Vanesa Bruña Fernández: Other.
- Alejandro Carta Bergaz: Other.
- Ana Casado Plasencia: Other.
- Sofía Cuenca Parra: Postdoctoral.
- Tomás Datino Romaniega: Postdoctoral.
- Sebastián De la Pava Isaza: Data management.
- Carolina Devesa Cordero: Predoctoral.
- Leonel Díaz González: Other.

- Felipe Díez Del Hoyo: Postresidency liSGM.
- Jaime Elizaga Corrales: Postdoctoral.
- María Ángeles Espinosa Castro: Other.
- Ana María Fernández Baza: Management.
- Mª Eugenia Fernández Santos: Senior researcher.
- Francisco Jesús Fernández-Avilés Díaz: Group director.
- Juan Fernández-Yáñez García-Monge: Other.
- Lucía Fuentes Arroyo: Predoctoral.
- Alejandro García Díaz: Community of Madrid-Youth Training Program.
- Jorge García Carreño: Other.
- José Antonio García Robles: Other.
- Cristina Gómez González: Other.
- Víctor Gómez Carrillo: Other.
- Ana González Mansilla: Other.
- Ángel González Pinto: Postdoctoral.
- David González Casal: Other.
- Esteban González Torrecilla: Postdoctoral.
- Hugo Orlando González Saldívar: Other.
- Enrique Gutiérrez Ibañes: Other.
- Marta Hurtado Martín: Management.
- Miriam Juárez Fernández: Other.
- Xin Li: Other.
- Alejandro Liberos Mascarell: Postdoctoral.
- Juan Carlos López García: Other.
- Gerard Álvaro Loughlin Ramírez: PFIS.
- Raquel Luna López: Other.
- Irene Martín De Miguel: Other.
- Batiste Andreu Martínez Climent: Juan de la Cierva.
- Manuel Martínez Selles: Senior researcher.

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Group members (cont.)

- Pablo Martínez-Legazpi Aguiló: Juan de la Cierva.
- Roberto Mateos Gailan: Other.
- Irene Méndez Fernández: Other.
- Teresa Mombiela Ramírez de Ganuza: Other.
- Irene Muñoz López: Data management.
- Paula Navas Tejedor: Other.
- A. Miriam Pareja Malagón: Other.
- Esther Pérez David: Postdoctoral.
- María Candelas Pérez del Villar Moro: Juan Rodes.
- Virginia Plasencia Martín: Support technician.
- Andrea Postigo Esteban: Other.
- Raquel Prieto Arévalo: Postdoctoral.
- Allan Roberto Rivera Juárez: Other.
- Pablo Miguel Ruiz Hernández: Other.
- Mª Teresa Sánchez Anegón: Other.
- Ricardo Sanz Ruiz: Other.
- Fernando Sarnago Cebada: Other.
- Olga Sobrino González: Data management.
- Javier Soriano Triguero: Other.
- Iago Sousa Casanova: Other.
- Susana Suárez Sancho: Predoctoral.
- María Amalia Tamargo Delpón: Other.
- María Jesús Valero Masa: Other.
- Alexandra Vázquez Castaño: Data management.
- María Eugenia Vázquez Álvarez: Other.
- Jesús Velásquez Rodríguez: Other.
- Samuel Antonio Veliz Tapia: Other.
- María Lourdes Vicent Alaminos: Other.
- Adolfo Villa Arranz: Other.
- Raquel Yotti Álvarez: Senior researcher.
- Eduardo Zatarain Nicolás: Other.



Research projects - Competitive calls

- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: 7th Framework Program Project. The effect of intracoronary reinfusion of Bound Marrow Derived Mononuclear Cells (BM-MNC) on all cause mortality in acute myocardial infarction.
Funding body: European Commission
Start date: 2011
End date: 2016
- Principal investigator: Raquel Yotti Álvarez
Title: Análisis de intensidad de ondas en la hipertensión pulmonar asociada a cardiopatía izquierda.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Javier Bermejo Thomas
Title: Caracterización de las propiedades diastólicas intrínsecas del ventrículo izquierdo y derecho mediante nuevos métodos de análisis de señal e imagen cardiovascular.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2016
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Red Cardiovascular.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2014.
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Proyecto CellCAM. Programa I+D Biomedicina Comunidad de Madrid. "Una nueva generación de medicamentos celulares más eficaces y seguros".
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: 7th Framework Program Project. BESTAGEING.BIOMARKER RESEARCH ALLIANCE FOR DIAGNOSING HEART DISEASE IN THE AGEING EUROPEAN POPULATION.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2017
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Estudio preclínico de la implantación de parches de tejido cardíaco bioartificial electromecánicamente entrenados en un modelo de infarto de miocardio porcino.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: Ángel Arenal Maíz
Title: Ablación del sustrato de las TVMS en un modelo porcino de cicatriz post infarto mediante terapia celular.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Proyectos RETOS 2014. Cardiac regeneration technology.
Funding body: Ministerio de Economía y Competitividad.
Start date: 2014
End date: 2016
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Evaluación funcional de una nueva mutación intrónica de KCNH2 en una familia con síndrome de QT largo. Estudio traslacional de patogenicidad en cultivo monocapa de cardiomiositos diferenciados a partir de células madre inducidas mediante técnicas de mapeo.
Funding body: Fundación Mutua Madrileña.
Start date: 2014
End date: 2016

- Principal investigator: Felipe Atienza Fernández
Title: Proyecto FIS 2014. Caracterización No-invasiva de los Mecanismos de la Fibrilación Auricular. Estudio PERSONALIZE-AF.
Funding body: Instituto de Salud Carlos III.
Start date: 2015
End date: 2017
- Principal investigator: Tomás Datino Romaniega
Title: Proyecto FIS 2014. Factores de riesgo de muerte súbita en adultos con cardiopatías congénitas. Implicaciones para la implantación de desfibriladores automáticos.
Funding body: Instituto de Salud Carlos III.
Start date: 2015
End date: 2017
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Proyecto EXPLORA 2014. "Desarrollo de computadores lógicos biológicos basados en comunicación iónica entre células cardiacas excitables y no excitables.
Funding body: Ministerio de Economía y Competitividad.
Start date: 2014
End date: 2015
- Principal investigator: Francisco Jesús Fernández-Avilés Díaz
Title: Proyecto RETOS 2015. "Terapia celular basada en progenitores cardíacos para tratamiento taquicardia ventricular (CPCs-TV)".
Funding body: Ministerio de Economía y Competitividad (MINECO).
Start date: 2015.
End date: 2019.

Clinical practice guidelines

| Authors | Title | Publication |
|--|--|---|
| Datino T; Rexach L; Vidan MT; Alonso A; Gandara A; Ruiz-García J; Fontecha B; Martínez-Selles M | Guidelines on the management of implantable cardioverter defibrillators at the end of life | REVISTA CLINICA ESPAÑOLA |
| Kohl P; Windecker S; Alfonso F; Collet JP; Cremer J; Falk V; Filippatos G; Hamm C; Head SJ; Juni P; Kapstein AP; Kastrati A; Knuuti J; Landmesser U; Laufer G; Neumann FJ; Richter DJ; Schauerte P; Uva MS; Stefanini GG; Taggart DP; Torracca L; Valgimigli M; Wijns W; Witkowski A; Zamorano JL; Achenbach S; Baumgartner H; Bax JJ; Bueno H; Dean V; Deaton C; Erol C; Fagard R; Ferrari R; Hasdai D; Hoes AW; Kirchhof P; Knuuti J; Kohl P; Lance洛tti P; Linhart A; Nihoyannopoulos P; Piepoli MF; Ponikowski P; Sirnes PA; Tamargo JL; Tendera M; Torbicki A; Wijns W; Windecker S; Uva MS; Achenbach S; Pepper J; Anyanwu A; Badimon L; Bauersachs J; Baumbach A; Beygui F; Bonaros N; De Carlo M; Deaton C; Dobrev D; Dunning J; Eeckhout E; Gielen S; Hasdai D; Kirchhof P; Luckraz H; Mahrholdt H; Montalescot G; Paparella D; Rastan AJ; Sanmartin M; Sergeant P; Silber S; Tamargo J; ten Berg J; Thiele H; van Geuns RJ; Wagner HO; Wassmann S; Wendler O; Zamorano JL | 2014 ESC/EACTS Guidelines on myocardial revascularization | EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY |

Patents and intellectual property

- Title: Método para visualizar la información contenida en imágenes tridimensionales del corazón.
Reference: P201000363, PCT/ES2011/000069.
Owner: FIBHGM-UPM.
Inventors: Esther Pérez David, Ángel Arenal Maíz, Javier Bermejo Thomas, Francisco Fernández Avilés, Manuel Desco Menéndez, MªJesús Ledesma Carballo, Andrés de Santos Lleó, José Luis Rubio Guivernau.
- Title: Catéter y método para la detección de actividad eléctrica en un órgano.
Reference: P201431315.
Owner: FIBHGM-UP Valencia-Univ. Michigan.
Inventors: Andreu Martínez, Felipe Atienza, Miguel Rodrigo, Mª Salud Guillen, Omer Berenfeld.
- Title: Dispositivo de localización de arritmias cardíacas.
Reference: P201431597.
Owner: FIBHGM-UPV.
Inventors: Andreu Martínez, Felipe Atienza Fernández, Ángel Arenal, Francisco Fernández Avilés y María S. Guillem.

Publications

Total impact factor: 391.4

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 - López-Sendon J; González-Juanatey JR; Pinto F; Castillo JC; Badimon L; Dalmau R; Torrecilla EG; López-Minguez JR; Maceira AM; Pascual-Figal D; Moya-Prats JLP; Sionis A; Zamorano JL. *Quality Markers in Cardiology. Main Markers to Measure Quality of Results (Outcomes) and Quality Measures Related to Better Results in Clinical Practice (Performance Metrics)*. REVISTA ESPANOLA DE CARDIOLOGIA. 2015; 68(11) 976. IF: 4.596. Quartile: 1. (Editorial Material).
 - Martínez-Selles M; Almenar L; Paniagua-Martín MJ; Segovia J; Delgado JF; Arizon JM; Ayesta A; Lage E; Brossa V; Manito N; Pérez-Villa F; Díaz-Molina B; Rabago G; Blasco-Peiro T; Galan LD; Pascual-Figal D; González-Vilchez F. *Donor/recipient sex mismatch and survival after heart transplantation: only an issue in male recipients? An analysis of the Spanish Heart Transplantation Registry*. TRANSPLANT INTERNATIONAL. 2015; 28(3) 305-313. IF: 2.835. Quartile: 1. (Article).
- Publications in journals without impact factor indexed in Journal Citation Reports:**
- Rodrigo M; Climent AM; Liberos A; Fernández-Aviles F; Berenfeld O; Atienza F; Guillem MS. *Atrial Sources Identification by Causality Analysis during Atrial Fibrillation*. 2015 37TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY (EMBC). 2015; 3783-3786. (Proceedings Paper).
 - Atienza F; Climent AM; Guillem MS; Berenfeld O. *Frontiers in no-ninvasive cardiac mapping rotors in atrial fibrillation-body surface frequency-phase mapping*. Cardiac electrophysiology clinics. 2015; 7(1) 59-69. (Article).
 - Pocock S; Bueno H; Licour M; Medina J; Zhang L; Annemans L; Danchin N; Huo Y; Van de Werf F. *Predictors of one-year mortality at hospital discharge after acute coronary syndromes: A new risk score from the EPICOR (long-term follow up of antithrombotic management patterns In acute CORonary syndrome patients) study*. EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE. 2015; 4(6) 509-517. (Article).
 - Uribarri A; Bueno H; Pérez-Castellanos A; Loughlin G; Sousa I; Viana-Tejedor A; Fernández-Aviles F. *Impact of time to cooling initiation and time to target*

temperature in patients treated with hypothermia after cardiac arrest. EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE. 2015; 4(4) 365-372. (Article).

- Lancellotti P; Price S; Edvardsen T; Cosyns B; Neskovic AN; Dulgheru R; Flachskampf FA; Hassager C; Pasquet A; Gargani L; Galderisi M; Cardim N; Haugaa KH; Ancion A; Zamorano JL; Donal E; Bueno H; Habib G. *The use of echocardiography in acute cardiovascular care: Recommendations of the European Association of Cardiovascular Imaging and the Acute Cardiovascular Care Association.* EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE. 2015; 4(1) 3-5. (Article).
- Sinnaeve PR; Zeymer U; Bueno H; Danchin N; Medina J; Sánchez-Covisa J; Licour M; Annemans L; Jukema JW; Pocock S; Storey RF; Van de Werf F. *Contemporary inter-hospital transfer patterns for the management of acute coronary syndrome patients: Findings from the EPICOR study.* EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE. 2015; 4(3) 254-262. (Article).
- Viana-Tejedor A; Loughlin G; Fernández-Aviles F; Bueno H. *Temporal trends in the use of reperfusion therapy and outcomes in elderly patients with first ST elevation myocardial infarction.* EUROPEAN HEART JOURNAL-ACUTE CARDIOVASCULAR CARE. 2015; 4(5) 461-467. (Article).
- Carbone J; Palomo J; Fernández-Yanez J; Sarmiento E. *Subcutaneous immunoglobulin replacement therapy in a heart transplant recipient with severe recurrent infections.* Heart, lung and vessels. 2015; 7(3) 256-9. (Article).
- Diez-del Hoyo F; Gutiérrez-Ibanes E; Loughlin G; Sanz-Ruiz R; Vázquez-Álvarez ME; Sarnago-Cebada F; Angulo-Llanos R; Casado-Plasencia A. *Coronary physiology assessment in the catheterization laboratory.* WORLD JOURNAL OF CARDIOLOGY. 2015; 7(9) 525-538. (Review).
- Nunez García A; Sanz-Ruiz R; Fernández Santos ME; Fernández-Aviles F. *Second-generation stem cells for cardiac repair.* World journal of stem cells. 2015; 7(2) 352-67. (Review).

Letters (not included in the IF):

- Micozzi S; Pinto C; Seoane M; Carbone J; Tornero P. *Giant cell myocarditis in hypersensitivity reactions: is an early diagnose possible?* ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY. 2015; 115(3) 247-248. IF: 3.475. Quartile: 2. (Letter).
- Amat-Santos IJ; Messika-Zeitoun D; Eltchaninoff H; Kapadia S; Lerakis S; Cheema AN; Gutiérrez-Ibanes E; Munoz A; Pan M; Webb JG; Herrmann H; Kodali S; Nombela-Franco L; Tamburino C; Jilaihawi H; Masson JB; de Brito FS; Ferreira MC; Lima VC; Mangione JA; I. *Response to Letters Regarding Article, "Infective Endocarditis After Transcatheter Aortic Valve Implantation: Results From a Large Multicenter Registry".* CIRCULATION. 2015; 132(23) e372-e374. IF: 17.047. Quartile: 1. (Letter).
- Munoz P; Kestler M; Bermejo J; Bouza E. *Echocardiography in Patients With Enterococcal Bacteremia Reply.* CLINICAL INFECTIOUS DISEASES. 2015; 61(1) 133-135. IF: 8.736. Quartile: 1. (Letter).
- Sousa-Casasnovas I; González-Saldivar H; Diez-Villanueva P; Fernández-Aviles F. *Cardiogenic shock due to dynamic left ventricular outflow tract obstruction in a woman with Takotsubo syndrome.* EMERGENCIAS. 2015; 27(2) 140-140. IF: 2.917. Quartile: 1. (Letter).
- Ruiz-Salas A; Datino T; Pena-Hernández J; Calvo D; Alzueta J. *Inappropriate shock due to late dislocation of electrode.* INTERNATIONAL JOURNAL OF CARDIOLOGY. 2015; 199: 229-231. IF: 4.638. Quartile: 1. (Letter).
- Barge-Caballero E; Segovia-Cubero J; González-Vilchez F; Delgado-Jiménez J; Pérez-Villa F; Almenar-Bonet L; Prado JLAD; Lage-Galle E; De la Fuente-Galan L; Manito-Lorite N; Sanz-Julve M; Villa-Arranz A; Rodríguez JLL; Brossa-Loidi V; Pascual-Figal D; Muni. *Evaluation of the preoperative vasoactive-inotropic score as a predictor of postoperative outcomes in patients undergoing heart transplantation.* INTERNATIONAL JOURNAL OF CARDIOLOGY. 2015; 185: 192-194. IF: 4.638. Quartile: 1. (Letter).
- Yotti R; Bermejo J; Gutiérrez-Ibanes E; del Villar CP; Mombiela T; Elizaga J; Benito Y; González-Mansilla A; Barrio A; Rodrigue. *REPLY: Aortic Stiffness*

- Complex Evaluation But Major Prognostic Significance Before TAVR.* JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY. 2015; 66(13) 1522-1523. IF: 17.759. Quartile: 1. (Letter).
- Hernández PMR; Loughlin G; Arenal A. *Elimination of All Inducible Ventricular Tachycardias as the Endpoint for Ablation.* JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY. 2015; 66(22) 2576-2576. IF: 17.759. Quartile: 1. (Letter).
 - Yotti R; Bermejo J; Gutiérrez-Ibáñez E; del Villar CP; Mombiela T; Elizaga J; Benito Y; González-Mansilla A; Barrio A; Rodrigue. *REPLY: High Flow Velocity and Low Systolic Pressure Compliance of the Aortic Wall or Venturi Effect Within.* JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY. 2015; 66(5) 596-597. IF: 17.759. Quartile: 1. (Letter).
 - Martínez-Legazpi P; Bermejo J; Benito Y; Yotti R; del Villar CP; González-Mansilla A; Barrio A; Villacorta E; Sánchez PL; *REPLY: Comments on Defining the Contribution of Diastolic Vortex Ring to Left Ventricular Filling.* JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY. 2015; 65(23) 2574-2575. IF: 17.759. Quartile: 1. (Letter).
 - Diez-del Hoyo F; Sousa I; Diez-Villanueva P; Juárez M; Fernández-Aviles F. *Atropine overdose mimicking anoxic encephalopathy during cardiopulmonary resuscitation.* REVISTA CLINICA ESPANOLA. 2015; 215(6) 360-361. IF: 0.76. Quartile: 3. (Letter).

- Martínez-Selles M. *Guidelines on the: Management of Implantable Cardioverter-defibrillators at the End of Life.* REVISTA ESPAÑOLA DE CARDIOLOGIA. 2015; 68(11) 1044-1044. IF: 4.596. Quartile: 1. (Letter).
- Rodriguez-Roda J; Cuerpo G; Rodriguez-Abella H; Ruiz M; Elizaga J; González-Pinto A. *Transapical Valve-in-valve Implantation in Failed Mitral Bioprostheses.* REVISTA ESPAÑOLA DE CARDIOLOGIA. 2015; 68(9) 810-811. IF: 4.596. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|-------|
| Own publications | 25 | 192.8 |
| Joint publications | 31 | 198.6 |
| First-decile publications | 16 | 245.0 |
| First-quartile publications | 44 | 369.0 |
| Second-quartile publications | 6 | 14.3 |
| Third-quartile publications | 3 | 4.4 |
| Fourth-quartile publications | 3 | 3.6 |
| Nonindexed publications/No IF | 23 | - |
| Total publications (including publications without IF) | 79 | 391.4 |

Cardiovascular pathophysiology

Group director: **VICTORIA CACHOFEIRO RAMOS**

Type: **Consolidated**

Research lines

- ▶ L1: Metabolic syndrome and obesity.
- ▶ L2: Hypertension and other cardiovascular risk factors.

This group is formed by lecturers and researchers from the Universidad Complutense de Madrid who have been working for several years on the translational and integrated study of the mechanisms involved in cardiovascular damage associated with various risk factors (eg, hypertension, obesity, dyslipidemia, aging, and diabetes). The group is a pioneer in the study of endothelial function.

One of the group's key areas is its translational and integrated approach to the study of the impact of various risk factors on the cardiovascular system. During the last 15 years, its range of interest has expanded to include cardiac damage assessed through experimentation and by participating in various clinical studies. Its most noteworthy recent collaborations were with the University of São Paulo (Brazil), Inserm (Nancy, France), Instituto de Cardiología de Bucaramanga

(Colombia), Universidad Autónoma de Madrid, Hospital Clínico San Carlos, and ICCC-CSIC Sant Pau (Barcelona, Spain), as well as with other groups from the IISGM. The fruits of this cooperation can be seen in the numerous publications in prestigious journals both within and outside the field of cardiovascular disease (eg, Atherosclerosis, Thrombosis, and Vascular Biology; International Journal of Cardiology; Cardiovascular Research; Journal of Hypertension; British Journal of Pharmacology; Endocrinology; and Kidney International).

In addition to belonging to the IISGM, the members of the group have been part of the RIS network of the ISCIII since 2006.

Group members

- **María Visitación Bartolomé Pascual:** Postdoctoral.
- **Victoria Cachofeiro Ramos:** Group director.
- **Roberto Cañas Martín:** Support technician.
- **Raquel Jurado López:** Support technician.
- **Gema Marín Royo:** Predoctoral.
- **Encarnación Muñoz Ferrero:** Support technician.

Research projects - Competitive calls

- Principal investigator: Victoria Cachofeiro Ramos
Title: "Fortalecimiento de Unidad Cultivos Celulares y Desarrollo Modelo Animal en Fisiopatología Vascular".
Funding body: Ministerio de Economía y Competitividad (MINECO).
Start date: 2015.
End date: 2017

Publications

Total Impact Factor: 34.0

Publications in journals with impact factor indexed in Journal Citation Reports:

- Hernanz R; Martínez-Revelles S; Palacios R; Martín A; Cachofeiro V; Aguado A; García-Redondo L; Barrus MT; de Batista PR; Briones AM; Salaices M; Alonso MJ. *Toll-like receptor 4 contributes to vascular remodelling and endothelial dysfunction in angiotensin II-induced hypertension.* BRITISH JOURNAL OF PHARMACOLOGY. 2015; 172(12) 3159-3176. IF: 5.259. Quartile: 1. (Article).
- Miana M; Galan M; Martínez-Martínez E; Varona S; Jurado-López R; Bausa-Miranda B; Antequera A; Luaces M; Martínez-González J; Rodríguez C; Cachofeiro V. *The lysyl oxidase inhibitor beta-aminopropionitrile reduces body weight gain and improves the metabolic profile in diet-induced obesity in rats.* DISEASE MODELS & MECHANISMS. 2015; 8(6) 543-551. IF: 4.316. Quartile: 1. (Article).
- Martínez-Martínez E; Calvier L; Fernández-Celis A; Rousseau E; Jurado-López R; Rossoni LV; Jaisser F; Zannad F; Rossignol P; Cachofeiro V; López-Andrés N. *Galectin-3 Blockade Inhibits Cardiac Inflammation and Fibrosis in Experimental Hyperaldosteronism and Hypertension.* HYPERTENSION. 2015; 66(4) 767-775. IF: 6.294. Quartile: 1. (Article).
- Martínez-Martínez E; López-Andrés N; Jurado-López R; Rousseau E; Bartolome MV; Fernández-Celis A; Rossignol P; Islas F; Antequera A; Prieto S; Luaces M; Cachofeiro V. *Galectin-3 Participates in Cardiovascular Remodeling Associated With Obesity.* HYPERTENSION. 2015; 66(5) 961-969. IF: 6.294. Quartile: 1. (Article).
- Calvier L; Martínez-Martínez E; Miana M; Cachofeiro V; Rousseau E; Sadaba JR; Zannad F; Rossignol P; López-Andrés N. *The Impact of Galectin-3 Inhibition on Aldosterone-Induced Cardiac and Renal Injuries.* JACC-HEART FAILURE. 2015; 3(1) 59-67. IF: 7.218. Quartile: 1. (Article).
- Martínez-Martínez E; Cachofeiro V; Rousseau E; Álvarez V; Calvier L; Fernández-Celis A; Leroy C; Miana M; Jurado-López R; Briones AM; Jaisser F; Zannad F; Rossignol P; López-Andrés N. *Interleukin-33/ST2 system attenuates aldosterone-induced adipogenesis and inflammation.* MOLECULAR AND CELLULAR ENDOCRINOLOGY. 2015; 411(C) 20-27. IF: 3.859. Quartile: 2. (Article).
- Torres A; Cachofeiro V; Millan J; Lahera V; Nieto ML; Martín R; Bello E; Álvarez-Sala LA. *Red wine intake but not other alcoholic beverages increases total antioxidant capacity and improves pro-inflammatory profile after an oral fat diet in healthy volunteers.* REVISTA CLINICA ESPANOLA. 2015; 215(9) 486-494. IF: 0.76. Quartile: 3. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 2 | 10.6 |
| Joint publications | 5 | 23.4 |
| First-decile publications | 4 | 25.1 |
| First-quartile publications | 5 | 29.4 |
| Second-quartile publications | 1 | 3.9 |
| Third-quartile publications | 1 | 0.8 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 7 | 34.0 |

Cardiac cellular electrophysiology

Group director: **EVA DELPÓN MOSQUERA**

Type: **Consolidated**

Research lines

- ▶ L1: Electrical remodeling in chronic atrial fibrillation.
- ▶ L2: Comparison of electrical remodeling in the left and right atria.
- ▶ L3: Role of endogenous mediators and receptors in the control of electrical activity and remodeling of atrial fibrillation.
- ▶ L4: Identification of therapeutic targets for the treatment of atrial fibrillation.
- ▶ L5: Molecular determinants underlying block of inwardly rectifying K channels (Kir).
- ▶ L6: Molecular determinants underlying voltage-dependent channel block.
- ▶ L7: Modulation by endogenous mediators (eg, cannabinoids, nitric oxide) and miRNAs of human cardiac ion channel activity.

Group members

- **Silvia Alfayate Gallego:** Predoctoral.
- **Ricardo Caballero Collado:** Senior researcher.
- **Eva Delpón Mosquera:** Group Director.
- **Raquel García Utrilla:** FPI.
- **Marcos Matamoros Campos:** FPI.
- **Paloma Nieto Marín:** Predoctoral.
- **Lorena Ondo Martín:** Support technician.
- **Marta Pérez-Hernández Durán:** Predoctoral ISCIII.
- **Ana Sandra Sacristán González:** Support technician.
- **Juan Tamargo Menéndez:** Senior researcher.
- **David Tinaquero Faura:** Predoctoral.
- **Paloma Vaquero López:** Data management.

Research projects - Competitive calls

- Principal investigator: Ricardo Caballero Collado
Title: Sulfonylureas to treat Cantú syndrome.
Funding body: Instituto de Salud Carlos III (ISCIII)
Start date: 2015
End date: 2018.
- Principal investigator: Juan Tamargo Menéndez
Title: "Refuerzo de las Actividades Técnicas de Investigación del Laboratorio de Electrofisiología Cardiaca".
Funding body: Ministerio de Economía y Competitividad (MINECO).
Start date: 2015.
End date: 2017



Clinical practice guidelines

| Authors | Title | Publication |
|--|--|--|
| Habib G, Lancellotti P, Antunes MJ, Bongiorni MG, Casalta JP, Del Zotti F, Dulgheru R, El Khoury G, Erba PA, Iung B, Miro JM, Mulder BJ, Plonska-Gosciniak E, Price S, Roos-Hesselink J, Snygg-Martín U, Thuny F, Tornos Mas P, Vilacosta I, Zamorano JL; Document Reviewers, Erol Ç, Nihoyannopoulos P, Aboyans V, Agewall S, Athanassopoulos G, Aytekin S, Benzer W, Bueno H, Broekhuizen L, Carerj S, Cosyns B, De Backer J, De Bonis M, Dimopoulos K, Donal E, Drexel H, Flachskampf FA, Hall R, Halvorsen S, Hoen B, Kirchhof P, Lainscak M, Leite-Moreira AF, Lip GY, Mestres CA, Piepoli MF, Punjabi PP, Rapezzi C, Rosenhek R, Siebens K, Tamargo J, Walker DM | 2015 ESC Guidelines for the management of infective endocarditis: The Task Force for the: Management of Infective Endocarditis of the European Society of Cardiology (ESC). Endorsed by: European Association for Cardio-Thoracic Surgery (EACTS), the European Association of Nuclear Medicine (EANM) | Eur Heart J. 2015 Nov 21;36(44): 3075-128. |
| Rosano GM, Lewis B, Agewall S, Wassmann S, Vitale C, Schmidt H, Drexel H, Patak A, Torp-Pedersen C, Kjeldsen KP, Tamargo J | Gender differences in the effect of cardiovascular drugs: a position document of the Working Group on Pharmacology and Drug Therapy of the ESC | Eur Heart J. 2015 Oct 21;36(40): 2677-80. |

Publications**Total Impact Factor: 33.7*****Publications in journals with impact factor indexed
in Journal Citation Reports:***

- Tamargo J; Duarte J; Ruilope LM. *New Antihypertensive Drugs Under Development.* CURRENT MEDICINAL CHEMISTRY. 2015; 22(3) 305-342. IF: 3.455. Quartile: 1. (Article).
- Tamargo J; Caballero R; Delpon E. *Cancer Chemotherapy and Cardiac Arrhythmias: A Review.* DRUG SAFETY. 2015; 38(2) 129-152. IF: 3.206. Quartile: 1. (Review).
- Rosano GM; Lewis B; Agewall S; Wassmann S; Vitale C; Schmidt H; Drexel H; Patak A; Torp-Pedersen C; Kjeldsen KP; Tamargo J. *Gender differences in the effect of cardiovascular drugs: a position document of the Working Group on Pharmacology and Drug Therapy of the ESC.* European heart journal. 2015; 36(40) 2677-80. IF: 15.064. Quartile: 1. (Article).
- Tamargo J; Le Heuzey JY; Mabo P. *Narrow therapeutic index drugs: a clinical pharmacological consideration to flecainide.* EUROPEAN JOURNAL OF CLINICAL PHARMACOLOGY. 2015; 71(5) 549-567. IF: 2.71. Quartile: 2. (Review).
- Camm AJ; Manolis A; Ambrosio G; Daly C; Komajda M; de Sa EL; López-Sendon JL; Mugelli A; Muggli F; Tamargo J. *Unresolved issues in the management of chronic stable angina.* INTERNATIONAL JOURNAL OF CARDIOLOGY. 2015; 201: 200-207. IF: 4.638. Quartile: 1. (Review).

- Tamargo J; Castellano JM; Fuster V. *The Fuster-CNIC-Ferrer Cardiovascular Polypill: a polypill for secondary cardiovascular prevention.* INTERNATIONAL JOURNAL OF CARDIOLOGY. 2015; 201: S15. IF: 4.638. Quartile: 1. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 6 | 33.7 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 1 | 15.1 |
| First-quartile publications | 5 | 31.0 |
| Second-quartile publications | 1 | 2.7 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 6 | 33.7 |

Cardiology and heart transplant in children

Group director: CONSTANCIO MEDRANO LÓPEZ

Type: Emerging

Research programs

- ▶ P1: Heart transplant in children.
- ▶ P2: Cardiomyopathy in children.
- ▶ P3: Respiratory infections and congenital heart disease.
- ▶ P4: Drugs in pediatric cardiology.
- ▶ P5: Cardiac rehabilitation in children.
- ▶ P6: Cell therapy in pediatric cardiology.
- ▶ P7: Innovation in interventional approaches in congenital heart disease and in infants.
- ▶ P8: Innovation in surgical approaches in congenital heart disease and in infants.

The major research lines of this group include respiratory infection and respiratory syncytial virus, the continuation of the CIVIC study with the CIVIC5 study and Risk21, which will be developed during the next few years. They also include the line of echocardiography based on specialized techniques (Speckle Tracking, 3D) in myocardopathy, transplantation, and structural heart disease, as well as the line associated with cardiovascular drugs and transplantation.

Finally, it is noteworthy that this group has initiated a new research line in cell therapy in children with hypoplastic left heart syndrome. A key element of work in this field has been the group's collaboration with specialists in adult cardiology, pediatric hematology-oncology, cell regeneration, and infant heart surgery.

The Pediatric Cardiology group has developed its main research lines in the fields of familial cardiomyopathy and cardiopathy through the MyEstela project implemented during 2010-2012 with a FIS grant. This project has led to collaborations with other research groups. Of note, the group recently cooperated with the Centro Nacional de Investigaciones Cardiovasculares (CNIC [*National Center for Cardiovascular Research*]) in a high-impact publication in *Nature Medicine*. The group also recently joined the Red Cardiovascular as a differentiated group (the only one working on pediatric cardiology). The network has partially funded the work of a postgraduate for 4 years.

Group members

- Reyes Álvarez García-Rovés: Predoctoral.
- Teresa Álvarez Martín: Predoctoral.
- Olga Arroyo Riaño: Predoctoral.
- Fernando Ballesteros Tejerizo: Predoctoral.
- Manuela Camino López: Predoctoral.
- Inmaculada Carchenilla Pulido: Support technician.
- Miriam Centeno Jiménez: Predoctoral.
- Susana Cobos Hinojal: Postdoctoral.
- Alejandra Cuenca Yuste: Predoctoral.
- Ángeles Fuertes Moure: RETIC.
- Nuria Gil Villanueva: Predoctoral.
- Juan Miguel Gil Jaurena: Predoctoral.
- María Teresa González López: Predoctoral.
- Enrique Maroto Álvaro: Postdoctoral.
- Constancio Medrano López: Group director.
- Esther Panadero Carlavilla: Predoctoral.
- Gloria Isabel Pinero Díaz: Postdoctoral.
- Ana M^a Pita Fernández: Predoctoral.
- Cristina Relaño García: Postdoctoral.
- Alejandro Rodríguez Ogando: Predoctoral.
- Adolfo Sobrino Baladrón: Postresidency FIBHGM.
- Samantha Wilkinson: Support technician.
- José Luis Zunzunegui Martínez: Predoctoral.



Research projects - Competitive calls

- Principal investigator: Constancio Medrano López
Title: Sildenafil en el postoperatorio de cirugía cardiaca en niños: estudio Ivory.
Funding body: Instituto de Salud Carlos III (ISCIII).
Start date: 2013.
End date: 2015

Publications

Total Impact Factor: 9.9

Publications in journals with impact factor indexed in Journal Citation Reports:

- Gil-Jaurena JM; González-López MT; Pérez-Caballero R; Pita A. Atrioventricular valve repair along with Fontan completion. CARDIOLOGY IN THE YOUNG. 2015; 25(7) 1421-1424. IF: 0.825. Quartile: 4. (Article).
- González-López MT; Pita-Fernández AM; Gil-Jaurena JM; Pérez-Caballero-Martínez R; Sánchez-Valenzuela D; Las CJ. Modified Fontan Conversion: An Alternative Technique for Adult Patients. JOURNAL OF CARDIAC SURGERY. 2015; 30(7) 605-607. IF: 0.783. Quartile: 4. (Article).
- González-López MT; Pérez-Caballero-Martínez R; Amoros-Rivera C; Zamorano-Serrano J; Pita-Fernández AM; Gil-Jaurena JM. Orthotopic Heart Transplantation in an Adult Patient with Heterotaxy Syndrome: Surgical Implications. JOURNAL OF CARDIAC SURGERY. 2015; 30(12) 910-912. IF: 0.783. Quartile: 4. (Article).
- González-López MT; Gil-Jaurena JM; Zunzunegui-Martínez JL; Álvarez-García-Roves R. Aortopulmonary window due to transcatheter pulmonary valve implantation after arterial switch operation: Where is the limit?. JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY. 2015; 149(3) E38-E39. IF: 3.494. Quartile: 1. (Editorial Material).
- Gil-Jaurena JM; Zunzunegui JL; Pérez-Caballero R; Pita A; González-López MT; Ballesteros F; Rodríguez A; Medrano C. Surgical Management of Vascular Stents in Pediatric Cardiac Surgery: Clues for a Staged Partnership. PEDIATRIC CARDIOLOGY. 2015; 36(8) 1685-1691. IF: 1.452. Quartile: 3. (Article).

- Sainz T; Álvarez-Fuente M; Fernández-Jiménez R; González-Tome MI; de José MI; Ramos JT; Navarro ML; Martínez J; García-Hortelano M; Medrano C; Muñoz-Fernández MA; Mellado MJ. Cardiac Function in Vertically HIV-infected Children and Adolescents in the Era of Highly Active Antiretroviral Therapy. PEDIATRIC INFECTIOUS DISEASE JOURNAL. 2015; 34(5) E125-E131. IF: 2.587. Quartile: 1. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Martínez JLZ; Tejerizo FB; Ogando AR. Advances in interventionalism for the treatment of congenital heart disease. Can we be treated without surgery?. BOLETIN DE PEDIATRIA. 2015; 55(232) 54-60. (Article).

Letters (not included in the IF):

- Moore AF; Jiménez MC; García-Roves RA; Villanueva NG; López CM. Propionic acidemia and long QT syndrome: A potentially serious combination. ANALES DE PEDIATRIA. 2015; 83(4) 281-282. IF: 0.773. Quartile: 4. (Letter).

| | No. | IF |
|--|-----|-----|
| Own publications | 5 | 7.3 |
| Joint publications | 1 | 2.6 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 2 | 6.1 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 1.5 |
| Fourth-quartile publications | 3 | 2.4 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 8 | 9.9 |

Blood lipids and cardiovascular risk

Group director: LUIS ANTONIO ÁLVAREZ-SALA WALTHER

Type: Emerging

Research lines

- ▶ L1: Epidemiology of cardiovascular risk.

Group members

- Luis Antonio Álvarez-Sala Walther: Group director.
- Elena Bello Martínez: Postdoctoral.
- Francisco Javier Cabrera Aguilar: Predoctoral.
- Pedro Conthe Gutiérrez: Postdoctoral.
- José M^a de Miguel Yanes: Postdoctoral.
- Jesús Millán Núñez-Cortés: Senior researcher.
- Carlos Pérez de Oteyza: Postdoctoral.
- Gloria Pérez Rus: Predoctoral.
- Carlos Recarte García-Andrade: Predoctoral.
- Jorge del Toro Cervera: Predoctoral.
- Ana Torres do Rego: Postdoctoral.
- Inés Valdés Gross: Data management.



Research projects - Competitive calls

- Principal investigator: Luis Antonio Álvarez-Sala Walther
Title: Utilidad de los micrornas circulantes en la detección de dilataciones subaneurismáticas de aorta y relación con la aldosterona en pacientes hipertensos.
Funding body: SOMIMACA.
Start date: 2014
End date: 2015

Publications

Total Impact Factor: 34.6

Publications in journals with impact factor indexed in Journal Citation Reports:

- Trujillo-Santos J; Lozano F; Lorente MA; Adarraga D; Hirmerova J; Del Toro J; Mazzolai L; Barillari G; Barron M; Montreal M. *A Prognostic Score to Identify Low-risk Outpatients with Acute Deep Vein Thrombosis in the Lower Limbs.* AMERICAN JOURNAL OF MEDICINE. 2015; 128(1). IF: 5.61. Quartile: 1. (Article).
- Aguiar C; Alegria E; Bonadonna RC; Catapano AL; Cosentino F; Elisaf M; Farnier M; Ferrieres J; Filardi PP; Hancu N; Kayikcioglu M; Silva AME; Millan J; Reiner Z; Tokgozoglu L; Valensi P; Viigimaa M; Vrablik M; Zambon A; Zamorano JL; Ferrari R. *A review of the evidence on reducing macrovascular risk in patients with atherogenic dyslipidaemia: A report from an expert consensus meeting on the role of fenofibrate-statin combination therapy.* ATHEROSCLEROSIS SUPPLEMENTS. 2015; 19. IF: 3.356. Quartile: 2. (Review).
- Humanes B; Jado JC; Camano S; López-Parra V; Torres AM; Álvarez-Sala LA; Cercenado E; Tejedor A; Lazaro A. *Protective Effects of Cilastatin against Vancomycin-Induced Nephrotoxicity.* BIOMED RESEARCH INTERNATIONAL. 2015;. IF: 2.134. Quartile: 3. (Article).
- López-de-Andrés A; Jiménez-Trujillo I; Jiménez-García R; Hernández-Barrera V; de Miguel-Yanes JM; Méndez-Bailon M; Pérez-Farinós N; Salinero-Fort MA; Carrasco-Garrido P. *National trends in incidence and outcomes of abdominal aortic aneurysm among elderly type 2 diabetic and non-diabetic patients in Spain (2003-2012).* CARDIOVASCULAR DIABETOLOGY. 2015; 14. IF: 4.534. Quartile: 1. (Article).
- de Miguel-Yanes JM; Méndez-Bailon M; Jiménez-García R; Hernández-Barrera V; Pérez-Farinós N; López-de-Andrés A. *Trends in sepsis incidence and outcomes among people with or without type 2 diabetes mellitus in Spain (2008-2012).* DIABETES RESEARCH AND CLINICAL PRACTICE. 2015; 110(3) 266-275. IF: 3.045. Quartile: 2. (Article).
- Méndez-Bailon M; Barba-Martín R; de Miguel-Yanes JM; Zapatero-Gaviria A; Calvo-Porqueras B; Osuna MFZ; Nunez-Fernández C; Muñoz-Rivas N; Canteli SP; Marco-Martínez J. *Hyponatremia in hospitalised patients with heart failure in internal medicine: Analysis of the Spanish national minimum basic data set (MBDS) (2005-2011).* EUROPEAN JOURNAL OF INTERNAL MEDICINE. 2015; 26(8) 603-606. IF: 2.591. Quartile: 1. (Article).
- Toro R; Segura E; Nunez-Cortes JM; Pedro-Botet JC; Quezada-Feijoo M; Mangas A. *Relationship between lipoprotein (a) and micro/macro complications in type 2 diabetes mellitus: a forgotten target.* JOURNAL OF GERIATRIC CARDIOLOGY. 2015; 12(2) 93-99. IF: 1.393. Quartile: 3. (Article).
- Madridano O; del Toro J; Lorenzo A; Martín M; Cerezo JG; Hernández L; Prandoni P; Montreal M. *Subsequent arterial ischemic events in patients receiving anticoagulant therapy for venous thromboembolism.* JOURNAL OF VASCULAR SURGERY-VENOUS AND LYMPHATIC DISORDERS. 2015; 3(2) 135. IF: 0.833. Quartile: 4. (Article).
- Demelo-Rodríguez P; del Toro-Cervera J. *Platypnea-orthodeoxia syndrome and Budd-Chiari syndrome: An unreported association.* MEDICINA CLINICA. 2015; 144(2) 94-95. IF: 1.267. Quartile: 2. (Editorial Material).
- Nunez-Cortes JM; Morato TM; Toro R; Pérez JM; Rojas AM. *METABOLIC SYNDROME IN PATIENTS WITH CLINICAL PHENOTYPE "HYPERTRIGLYCERIDEMIC WAIST".* NUTRICION HOSPITALARIA. 2015; 32(3) 1145-1152. IF: 1.497. Quartile: 4. (Article).

- Llanos JPS; Ferrer MF; Álvarez-Sala-Walther L; Bray BG; González LM; Lesmes IB; Esteban BM. *Protein malnutrition incidence comparison after gastric bypass versus biliopancreatic diversion.* NUTRICION HOSPITALARIA. 2015; 32(1) 80-86. IF: 1.497. Quartile: 4. (Article).
- Muñoz-Rivas N; Méndez-Bailon M; Hernández-Barrera V; de Miguel-Yanes JM; Jiménez-García R; Esteban-Hernández J; Jiménez-Trujillo I; Álvaro-Meca A; Carrasco-Garrido P; de Miguel-Diez J; López-de-Andrés A. *Time Trends in Ischemic Stroke among Type 2 Diabetic and Non-Diabetic Patients: Analysis of the Spanish National Hospital Discharge Data (2003-2012).* PLOS ONE. 2015; 10(12). IF: 3.057. Quartile: 1. (Article).
- Gordo-Remartinez S; Calderon-Moreno M; Fernández-Herranz J; Castuera-Gil A; Gallego-Alonso-Colmenares M; Puertas-López C; Nuevo-González JA; Sánchez-Sendin D; García-Gamiz M; Sevillano-Fernández JA; Álvarez-Sala LA; Andueza-Lillo JA; de Miguel-Yanes JM. *Usefulness of Midregional Proadrenomedullin to Predict Poor Outcome in Patients with Community Acquired Pneumonia.* PLOS ONE. 2015; 10(6). IF: 3.057. Quartile: 1. (Article).
- Torres A; Cachofeiro V; Millan J; Lahera V; Nieto ML; Martín R; Bello E; Álvarez-Sala LA. *Red wine intake but not other alcoholic beverages increases total antioxidant capacity and improves pro-inflammatory profile after an oral fat diet in healthy volunteers.* REVISTA CLINICA ESPANOLA. 2015; 215(9) 486-494. IF: 0.76. Quartile: 3. (Article).

Letters (not included in the IF):

- Almagro P; Cabrera FJ; Diez-Manglano J; Boixeda R; Recio J; Mercade J; Yun S; Soriano JB. *Comorbidome and short-term prognosis in hospitalised COPD patients: the ESMI study.* EUROPEAN RESPIRATORY JOURNAL. 2015; 46(3) 850-853. IF: 8.332. Quartile: 1. (Letter).
- de Miguel-Yanes JM; Méndez-Bailon M; López-de-Andrés A. *Long-Term Outcomes of Abdominal Aortic Aneurysm Repair.* NEW ENGLAND JOURNAL OF MEDICINE. 2015; 373(21) 2088-2088. IF: 59.558. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 5 | 9.6 |
| Joint publications | 9 | 25.0 |
| First-decile publications | 1 | 5.6 |
| First-quartile publications | 5 | 18.8 |
| Second-quartile publications | 3 | 7.7 |
| Third-quartile publications | 3 | 4.3 |
| Fourth-quartile publications | 3 | 3.8 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 16 | 34.6 |

Acute cerebral ischemia. Stroke

Group director: **ANTONIO GIL NÚÑEZ**

Type: Associated clinical

Research lines

- ▶ L1: Epidemiologic, clinical, and therapeutic aspects of cerebral ischemic disease.
- ▶ L2: Development of WEBICTUS II for quality assurance in the management of acute stroke.
- ▶ L3: Diagnosis and therapy in cardioembolic cerebral ischemia.
- ▶ L4: Management of carotid near-occlusion stenosis.
- ▶ L5: Neurologic intervention in acute stroke.
- ▶ L6: Validation of etiologic scales.
- ▶ L7: Implementation of telestroke.

The Acute Cerebral Ischemia and Stroke Group is characterized by a solid research history that began in the 1970s, with participation at both national and international level and early publications in the field. Growing interest in cerebrovascular disease culminated in the creation of the Stroke Unit in 2000.

During this time, several multidisciplinary relationships have been developed with areas such as vascular neurologic intervention and neuroradiology, peripheral vascular surgery, cardiology, neurosurgery, and intensive care. Technical preparation has improved in recent years, with the creation of the neurosonology laboratory, which made it possible to meet the requirements of the Plan de Atención al Ictus de la Comunidad de Madrid (*Madrid Regional Stroke Plan*). The Stroke Group played a key role in the development of this laboratory.

Despite the enormous caseload of this group, interest in teaching and research has been growing and has resulted in the development of individual projects, as well as leadership of and participation in multicenter projects, mainly through Proyecto Ictus of GEECV-SEN and the Stroke Network of Madrid, which is part of the Stroke Forum of the Asociación Madrileña de Neurología (*Madrid Neurology Association*).

The enthusiasm and efforts of many in the field of teaching and research have led the group to become part of the IiSGM, with the aim of becoming a consolidated group.

Group members

- **Fernando Díaz Otero:** Predoctoral.
- **Yolanda Fernández Bullido:** Predoctoral.
- **Andrés García Pastor:** Predoctoral.
- **Antonio Gil Núñez:** Group director.
- **Ana María Iglesias Mohedano:** Postresidency FIBHGM.
- **Mª Paz Martín Torres:** Data management.
- **Pilar Vázquez Alén:** Predoctoral.
- **José Antonio Villanueva Osorio:** Predoctoral.

Publications**Total Impact Factor: 16.2*****Publications in journals with impact factor indexed in Journal Citation Reports:***

- Pastor AG; Otero FD; Navarro SG; Cuello JP; García PS; Arratibel AG; Mohedano AMI; Alen PV; Bullido YF; Osorio JAV; *Vascular Imaging Before Intravenous Thrombolysis: Consequences of In-Hospital Delay in Applying Two Diagnostic Procedures.* JOURNAL OF NEUROIMAGING. 2015; 25(3) 397-402. IF: 1.625. Quartile: 3. (Article).
- García-Pastor A; Díaz-Otero F; Funes-Molina C; Benito-Conde B; Grandes-Velasco S; Sobrino-García P; Vázquez-Alen P; Fernández-Bullido Y; Villanueva-Osorio JA; Gil-N. *Tissue plasminogen activator for acute ischemic stroke: calculation of dose based on estimated patient weight can increase the risk of cerebral bleeding.* JOURNAL OF THROMBOSIS AND THROMBOLYSIS. 2015; 40(3) 347-352. IF: 1.884. Quartile: 3. (Article).
- González AM; Cuello JP; Cruz PMR; Mohedano AMI; Rubio RD; Delgado FR; Pastor AG; Lebiedziewski JGD; García PF; Martínez JR; Echevarri DE. *Spontaneous spinal epidural haematoma: A retrospective study of a series of 13 cases.* NEUROLOGIA. 2015; 30(7) 393-400. IF: 1.79. Quartile: 3. (Article).
- de Andrés-Nogales F; Mora JV; Hernández FJB; Otero FD; Esteban LI; Ortega-Casarrubios MA; Moreno LC; Rico AXC; Torres MPM; Escobar CIGE; González CT; de Salas-Cansado M; Gómez MAC; Álvarez JS; Gil-Núñez A. *Use of healthcare resources and costs of acute cardioembolic stroke management in the Region of Madrid: The CODICE Study.* NEUROLOGIA. 2015; 30(9) 536-544. IF: 1.79. Quartile: 3. (Article).
- Fuentes B; de Lecinana MA; Ximenez-Carrillo A; Martínez-Sánchez P; Cruz-Cu-lebras A; Zapata-Wainberg G; Ruiz-Ares G; Frutos R; Fandino E; Caniego JL; Fernández-Prieto A; Méndez JC; Barcena E; Marín B; García-Pastor A; Díaz-Otero F; Gil-N. *Futile Interhospital Transfer for Endovascular Treatment in Acute Ischemic Stroke The Madrid Stroke Network Experience.* STROKE. 2015; 46(8) 2156-2161. IF: 5.787. Quartile: 1. (Article).

- Rafales NR; Mohedano AI; Pastor AG; Alen PV; Gines MLM; Osorio JAV; Bullido YF; Gil-Núñez AC; Otero FD. *Ischemic stroke and brachiocephalic artery thrombosis: Do we know the acute management?* CEREBROVASCULAR DISEASES. 2015; 39. 32-32. IF: 3.359. Quartile: 1. (Proceedings paper).

Letters (not included in the IF):

- de Lecinana MA; Díaz-Guzman J; Egido JA; Pastor AG; Martínez-Sánchez P; Vivancos J; Diez-Tejedor E. *Reflections on endovascular treatment for ischaemic stroke. A stroke care plan for the Region of Madrid.* NEUROLOGIA. 2015; 30(9) 591-592. IF: 1.79. Quartile: 3. (Letter).
- Iglesias-Mohedano AM; García-Pastor A; Contreras-Chicote A; Villanueva-Osorio JA. *Is the fogging effect related to futile recanalisation?* NEUROLOGIA. 2015; 30(7) 447-449. IF: 1.79. Quartile: 3. (Letter).

| | No. | IF |
|---|----------|-------------|
| Own publications | 4 | 7.1 |
| Joint publications | 2 | 9.1 |
| First-decile publications | 1 | 5.8 |
| First-quartile publications | 2 | 9.1 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 4 | 7.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 8 | 16.2 |

AREA 3

*Area coordinator:
Celso Arango López*

Neuroscience and mental health

One of the main research lines in the area of neuroscience is the study of the etiology and pathogenesis of neurodevelopmental disorders, such as autism spectrum disorders, schizophrenia, and other psychotic disorders. The psychiatry group of this Area participates and collaborates in national and international multicenter projects on environmental and genetic risk factors, functional and structural imaging studies, and intermediate mechanisms such as the search for endophenotypes and the biological bases of neuropsychology. The relevance of the work carried out resides in part in the group's ability to perform longitudinal studies of unusual types of patient, such as those with early-onset first episode psychosis or children and adolescents at risk of severe psychiatric disease. Research to date has been multidisciplinary and translational and oriented toward resolving findings associated with the clinical activity of these diseases. In fact, currently established clinical programs for these diseases are being investigated and benefiting from close coordination between clinical practice and research. One of the main associated research lines concerns developmental neuropsychopharmacology, which includes projects on pharmacogenetics and pharmacovigilance, as well as phase II/III clinical trials financed using competitive public funds and private funds. Finally, a further 2 lines of interest for this group are research on the empirical evaluation of psychotherapeutic approaches during early-onset first episode psychosis and research into quality of services and evaluation of programs. The success of the group has been particularly apparent in recent European calls for projects and in its coordination of the Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM [*Networked Center for Biomedical Research in Mental Health*]).

Furthermore, activity in neuroscience and mental health has been increasing in several emerging groups in fields such as neuroimmunology and movement disorders.

Research lines and axes

Strategic axes

- ▶ A1: Consolidation of research networks and alliances in neuroscience.
- ▶ A2: Consolidation of research lines in neuroscience.
- ▶ A3: Consolidation of the teaching program in neuroscience.
- ▶ A4: Consolidation of infrastructure.

Strategic lines

Axis 1: Consolidation of research networks and alliances in neuroscience

1. Consolidation of a network for the study of the pathophysiologic continuum between autism spectrum disorders and schizophrenia spectrum disorders

Strategic objectives:

- Ensure convergence of programs on schizophrenia and other psychoses and neurodevelopmental disorders.
- Merge databases.
- Study common markers.

2. More efficient integration of basic research at UCM and clinical practice at HGUGM by means of collaborative projects and animal models

Strategic objectives:

- Collaborate with the Department of Physiology (Animal Physiology II), School of Biology, Universidad Complutense de Madrid.
- Collaborate with the Department of Pharmacology, School of Medicine, Universidad Complutense de Madrid.

3. Increase the capacity and complementarity of our group within CIBERSAM to ensure extension of the samples necessary to reach significant results in collaborative studies

Strategic objectives:

- Promote translational and collaborative research.
- Continue current collaborative studies and develop new collaborative studies.
- Adapt our resources to ensure that they are suitable for joint projects within CIBERSAM.

(Continued on next page)

Strategic lines (cont.)

Axis 2: Consolidation of research lines in neuroscience

1. Consolidation of a line of functional neuroimaging in the children of patients with schizophrenia and bipolar disorder

Strategic objectives:

- Obtain necessary funding.
- Develop protocols for evaluation and for functional neuroimaging that are applicable to these populations.
- Collaborate with the Experimental Medicine and Surgery Service.

2. Creation of a clinical research unit for Parkinson's disease

Strategic objectives:

- Establish agreements between the IISGM and pharmaceutical companies.
- Collaborate with potentially synergistic groups (medical imaging, engineering, Instituto Ramón y Cajal).

3. Extension of additional sources of funding: autonomous, national, and international

Strategic objectives:

- Participate in calls for consolidated groups within the Comunidad de Madrid.
- Participate in European calls within the H2020 Program.
- Consolidate emerging researchers with their own funding lines: promotion of participation in public and private calls.

4. Increase in scientific output in the neurodevelopment disorders program

Strategic objectives:

- Lead research in the autism spectrum disorders line with particular emphasis on the neurobiological aspects of these diseases.
- Promote the development of publications in the field of quality of service and evaluation of programs.
- Develop and validate specific instruments for evaluation and neuroimaging techniques for diagnosis and follow-up.

5. Increase in scientific output in basic research

Strategic objectives:

- Expand the number of publications from the basic science laboratory. Lead and develop new collaborative studies.
- Increase participation in intramural and extramural cooperative studies.

(Continued on next page)

Strategic lines (cont.)

6. Continuation and promotion of transnational and collaborative research in schizophrenia and other psychoses

Strategic objectives:

- Continue and complete current studies.
- Lead and develop new collaborative studies.
- Promote collaboration with specific national and international consortia in this field of research in schizophrenia.

7. Completion of lines in progress in the ALS-Neuromuscular Unit and increase in multicenter collaboration for the study of this disease (included within "Rare Diseases") as a group linked to CIBERNED

Strategic objectives:

- Complete the use of data obtained during the first 5 years of the Unit and provide stable care in the Unit.
- Lead and develop new collaborative studies.

Axis 3: Consolidation of the teaching program for neuroscience

1. Consolidation of the group's teaching program with a stable offer of courses, training placements, and preparation of doctoral theses

Strategic objectives:

- Obtain certification of courses from the Continuing Training Committee.
- Participate in and publish the training offered by CIBERSAM/HGUGM.
- Collaborate with the Academic Council and persons responsible for training of medical residents at HGUGM.
- Obtain funding for predoctoral staff.
- Promote preparation of doctoral theses.
- Continue the work of training medical residents in neurology in our hospital and other centers.

Axis 4: Consolidation of infrastructure

1. Extension of laboratory structures and equipment; consolidation of the Psychiatry Laboratory

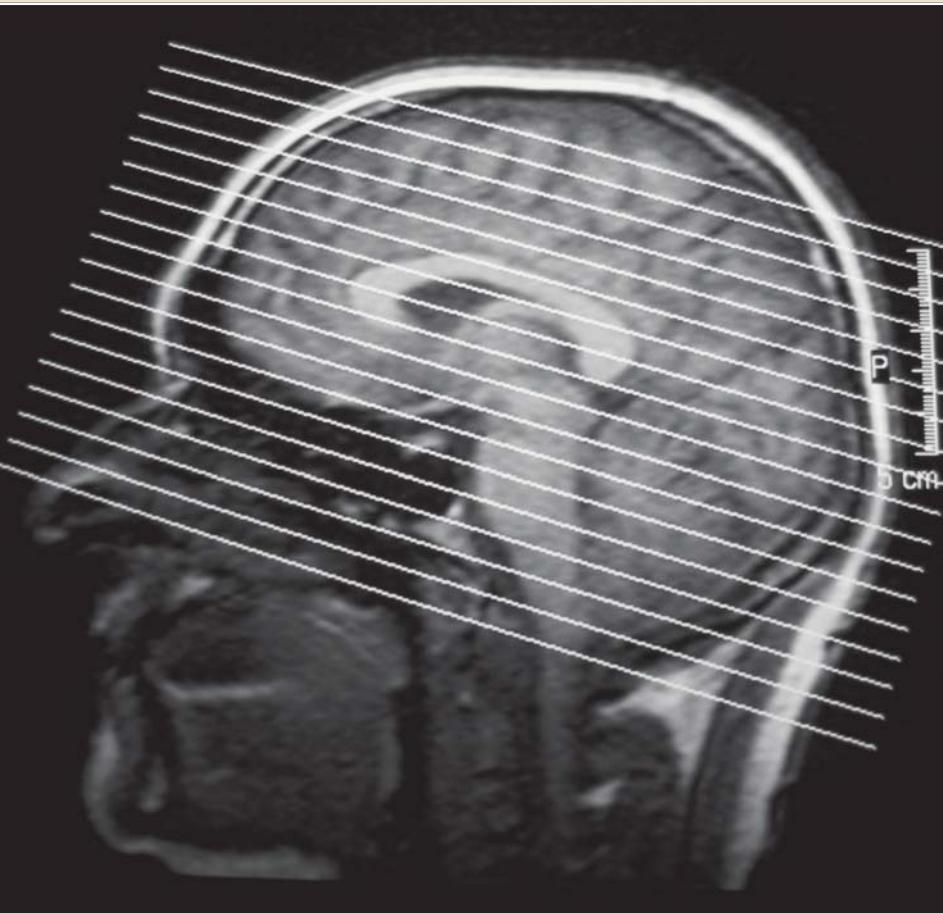
Strategic objectives:

- Increase personnel: participate in calls from human resources for support technicians and postdoctoral staff.
- Incentivize basic research in order to identify new therapeutic targets.
- Increase our technical equipment: agreements with the Experimental Medicine and Surgery Laboratory.
- Order the technical equipment and consumables set out in the project financial reports

2. Extension of structures and resources of the ALS-Neuromuscular Unit

Groups in AREA 3

Neuroscience and mental health



- ▶ Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders
- ▶ Neurological diseases
- ▶ Biology of inflammation

Psychological and neurobiological bases of mental disorders. Neurodevelopmental disorders

Group director: CELSO ARANGO LÓPEZ

Type: Consolidated

Research programs and lines

P1: Schizophrenia and other psychotic disorders

- ▶ L1: First-episode psychosis.
- ▶ L2: Cognition in psychiatric disorders.
- ▶ L3: Neuroimaging of mental disorders.
- ▶ L4: Efficacy of psychological interventions.
- ▶ L5: Markers of vulnerability in risk populations.

P2. Neurodevelopmental disorders

- ▶ L1: Autistic spectrum disorders.
- ▶ L2: Neuropathophysiological basis of mental disorders with onset during infancy and adolescence.
- ▶ L3: Neuropsychopharmacology of development.

The group "Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders", which is led by Dr. Celso Arango, has had prolific research activity in collaboration with national and international centers during the last few years and is an international leader in the field of early-onset schizophrenia. The group's scientific output is reflected in the number of externally evaluated projects financed through public competitive funding and private funding (Instituto de Salud Carlos III, Ministry of Education, NARSAD, Fundación Mutual Madrileña, Fundación Alicia Koplowitz, and industry-sponsored clinical trials), in the researchers contracted and trainees sponsored through competitive calls for human resources, in publications, and in agreements and joint projects with other scientific institutions. The group also works with other hospital services and research groups belonging to IISGM. It places particular emphasis on a synergistic approach and on the development of translational research (cardiology, biochemistry, genetics, nutrition, medical imaging, and experimental medicine).

The research team has broad experience in preparing researchers by means of a systematic training program. The team is also integrated in the quality assurance program of the Child and Adolescent Psychiatry Service "Nivel +500 puntos Modelo EFQM de Excelencia". During recent years, various members have participated in—and continue to participate in—9 projects funded by the Seventh Framework Program of the European Union, a project funded by the "Network of European Funding for Neuroscience Research (ERANET-NEURON)", a project funded by the Innovative Medicines Call of Horizonte 2000, and a project funded by the United States National Institute of Mental Health (NIMH).



Group members

- **Celso Arango López:** Group director.
- **Manuel Jovino Arango Victoria:** Data management.
- **Bárbara Arias Samperiz:** Postdoctoral.
- **Miguel Ángel Barcenilla González:** Support technician.
- **Leticia Boada Muñoz:** Predoctoral.
- **Marta Bravo Sánchez:** Predoctoral.
- **Ana Belén Calvo Calvo:** Postdoctoral.
- **Lourdes Cerezo Román:** Predoctoral.
- **Javier Conejo Galindo:** Predoctoral.
- **Azucena Corral Zarapuz:** Support technician.
- **Pedro Cuadrado Calleja:** Postdoctoral.
- **Mario De Matteis:** Predoctoral.

- **Enrique De Portugal Fernández Del Rivero:** Postdoctoral.
- **Ángel Luis Del Rey Mejías:** Predoctoral.
- **Carlos Delgado Lacosta:** Predoctoral.
- **María Luisa Dorado Martínez:** Predoctoral.
- **Álvaro Esguevillas Cuesta:** Predoctoral.
- **Ana Espliego Felipe:** Predoctoral.
- **Belén Fernández Castilla:** Data management.
- **David Fraguas Herraez:** Predoctoral.
- **Beatrice Garce Estolino:** Nonremunerated grant.
- **Elisa García Martínez:** Predoctoral.
- **Enrique García Bernardo:** Predoctoral.
- **Alicia García Alcón:** Predoctoral.
- **Ainhoa Garibi Pérez:** Predoctoral.
- **Alexandra Gárriz Luis:** Nonremunerated grant.
- **Santiago Gil Molina:** Predoctoral.
- **Emiliano González Vioque:** Postdoctoral.
- **Julia Harari Hobson:** Remunerated grant.
- **Patricia Hernández Jusdado:** Predoctoral.
- **Joost Janssen Jeucken:** Ramón y Cajal.
- **Lara Kehrmann Irisarri:** Predoctoral.
- **Alejandra Teresa Laorden Nieto:** Predoctoral.
- **Cloe Llorente Sarabia:** Predoctoral.
- **Gonzalo López Montoya:** Postdoctoral.
- **Kenia Martínez Rodríguez:** Juan de la Cierva.
- **María Covadonga Martínez Díaz-Caneja:** Predoctoral.
- **María Mayoral Aragón:** Postdoctoral.
- **Jessica Merchan Naranjo:** CIBER.
- **Susana Merchan Ribera:** Data management.
- **Purificación Morán Moya:** CIBER.

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Group members (cont.)

- Carmen Moreno Ruiz: Postdoctoral.
- M^a Dolores Moreno Pardillo: Postdoctoral.
- María Goretti Morón Nozaleda: Predoctoral, collaborator.
- Estrella Munilla Suárez: Predoctoral.
- María Soledad Olmeda García: Postdoctoral.
- M^a José Parellada Redondo: Intensified.
- María José Penzol Alonso: Predoctoral.
- Laura Pina Camacho: Predoctoral.
- María José Ramos Rodríguez: Predoctoral.
- Marta Rapado Castro: Sara Borrell.
- Sandra Recio Lamparero: CIBER.
- Eva Rivas Cambronero: Predoctoral.
- José Juan Rodríguez Solano: Postdoctoral.
- Pamela Rodríguez Latorre: CIBER.

- Alberto Rodríguez Quiroga: CIBER.
- Elisa Rodríguez Toscano: PFIS.
- Laura Roldán Díaz: Predoctoral.
- José Romo Villa: Predoctoral.
- Enrique Sainz Corton: Postdoctoral.
- Petra Sánchez Mascaraque: Predoctoral.
- Teresa Sánchez Gutiérrez: Postdoctoral.
- Beatriz Sánchez González: Predoctoral.
- Emilio Ignacio Sánchez Díaz: Predoctoral.
- Elena Serrano Drozdowskyj: Río Hortega.
- Cecilia Tapia Casellas: CIBER.
- Lucía Torres Jiménez: Postdoctoral.
- Isabel Vicente Sánchez: Predoctoral.
- Jorge Vidal De La Fuente: Predoctoral.
- Cristina Vilares Oliveira: Postdoctoral.

Research projects – Competitive calls

- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. EU-GEI. "The EU joint national schizophrenia networks for the identification of gene-environment interactions". (HEALTH-F2-2010-241909).
Funding body: European Commission.
Start date: 2010
End date: 2015
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. OPTIMISE. "Optimization of treatment in the management in schizophrenia".
Funding body: European Commission
Start date: 2010
End date: 2016
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. PERS. "Paediatric european risperidone studies".
Funding body: European Commission
Start date: 2010
End date: 2015
- Principal investigator: Celso Arango López
Title: Estudio neurologico de la perdida de sustancia gris cerebral en primeros episodios psicóticos de inicio temprano.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2016
- Principal investigator: Celso Arango López
Title: Proyecto AGES. Programa I+D Biomedicina Comunidad de Madrid. "Ambiente y genes en esquizofrenia-grupos de investigación de la Comunidad de Madrid".
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015
- Principal investigator: Celso Arango López
Title: Valor pronóstico y bases etiopatogénicas de los cambios cerebrales a los 5 años en primeros episodios psicóticos en niños y adolescentes.
Funding body: F. Koplowitz.
Start date: 2013
End date: 2015
- Principal investigator: Mª José Parellada Redondo
Title: Diet-gut-brain paywhay autismo. Estudio de la hipótesis digestivo-inflamatoria de los trastornos del espectro autista.
Funding body: F. Koplowitz
Start date: 2013
End date: 2015
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. Bestageing. Biomarker research alliance for diagnosing heart disease in the ageing european population.
Funding body: European Commission
Start date: 2013
End date: 2017
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. Aggression subtyping for improved insight and treatment innovation in psychiatric disorders.
Funding body: European Commission
Start date: 2013
End date: 2018.
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. MATRICS. Multidisciplinary Approaches to Translational Research In Conduct Syndromes.
Funding body: European Commission.
Start date: 2014
End date: 2019.
- Principal investigator: Celso Arango López
Title: European Project, 7th Framework Program. METSY. Neuroimaging platform for characterisation of metabolic co-morbidities in psychotic disorders.

Funding body: European Commission

Start date: 2013

End date: 2017

- Principal investigator: María Mayoral Arangón
Title: Estudio longitudinal de primeros episodios psicóticos en la infancia y adolescencia, seguimiento a 10 años.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: David Fraguas Herráez
Title: Proyecto FIS 2014. "Envejecimiento celular en primeros episodios psicóticos de inicio temprano".
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017
- Principal investigator: Joost Jansen Jeucken
Title: Proyecto FIS 2014. "Desarrollo de una matriz global y multimodal de conectividad cerebral y su aplicación al estudio de trastornos del espectro autista (TEA) y de trastornos del espectro en esquizofrenia (TEE)".
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017
- Principal investigator: Carmen Moreno Ruiz
Title: Proyecto FIS 2014. "Mecanismos etiopatológicos comunes y diferenciales en el trastorno bipolar y la depresión mayor de inicio temprano".
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017
- Principal investigator: Mª José Parellada Redondo
Title: Proyecto FIS 2014. "Estudio de vías fisiopatológicas diferenciales asociadas a fenotipos distintivos en una muestra de 200 pacientes con trastornos del espectro autista".
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Clinical practice guidelines

| Authors | Title | Publication |
|---|--|-----------------------------|
| Wykes T; Haro JM; Belli SR; Obradors-Tarrago C; Arango C; Ayuso-Mateos JL; Bitter I; Brunn M; Chevreul K; Demotes-Mainard J; Elfeddali I; Evans-Lacko S; Fiorillo A; Forsman AK; Hazo JB; Kuepper R; Knappe S; Leboyer M; Lewis SW; Linszen D; Luciano M; Maj M; McDaid D; Miret M; Papp S; Park AL; Schumann G; Thornicroft G; van der Feltz- Cornelis C; van Os J; Wahlbeck K; Walker-Tilley T; Wittchen HU | Mental health research priorities for Europe | Lancet Psychiatry |
| Coordinadoras: Ana María Ruiz Sancho, María Mayoral Aragón. Colaboradores: Ana Belén Calvo Calvo, Lara Kehrmann Irisarri, Carmen Moreno Ruiz, Miguel Moreno Íñiguez, Marta Rapado Castro, Teresa Sánchez Gutiérrez | PIENSA: Guía para adolescentes y familias que quieren entender y afrontar la psicosis | ISBN: 978-84- 606-6643-1 |
| Coordinadores: Celso Arango, David Fraguas, Josefina Castro-Fornieles. Colaboradores: Dra. Inmaculada Baeza, Sara Barbeito, Montserrat Dolz, Alberto Fernández Jaén, Aranzazu Fernández Rivas, Montserrat Graell, Carlos Ímaz Roncero, Carmen Moreno Ruiz, Beatriz Payá González, Sonia Ruiz de Azúa | Guía clínica y terapéutica para primeros episodios psicóticos en la infancia y adolescencia. | ISBN: 978-84- 606-6300-3 |
| Editor: Carlos Delgado. Colaboradores: María Mayoral, Ana Espiego, Lucía Torres, Begoña Cerón, Laura Roldán, Ana Calvo, Lara Kehrmann, Elisa Rodríguez, María Reche | Guia ATraPA: Acciones para el Tratamiento de la Personalidad en la Adolescencia | ISBN: 978-84- 606-8374-2 |

Publication**Total Impact Factor: 178.3*****Publications in journals with impact factor indexed in Journal Citation Reports***

- Thomson D; Berk M; Dodd S; Rapado-Castro M; Quirk SE; Ellegaard PK; Berk L; Dean OM. *Tobacco Use in Bipolar Disorder*. CLINICAL NEUROPSYCHOPHARMACOLOGY AND NEUROSCIENCE. 2015; 13(1) 1-11. IF: 1.5. Quartile: 4. (Review).
- Pina-Camacho L; García-Prieto J; Parellada M; Castro-Fornieles J; González-Pinto AM; Bombin I; Graell M; Paya B; Rapado-Castro M; Janssen J; Baeza I; Del Pozo F; Desco M; *Predictors of schizophrenia spectrum disorders in early-onset first episodes of psychosis: a support vector machine model*. EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 2015; 24(4) 427-440. IF: 3.339. Quartile: 1. (Article).
- Del Rey-Mejias A; Fraguas D; Diaz-Caneja CM; Pina-Camacho L; Castro-Fornieles J; Baeza I; Espliego A; Merchan-Naranjo J; González-Pinto A; de la Serna E; Paya B; Graell M; *Functional deterioration from the premorbid period to 2 years after the first episode of psychosis in early-onset psychosis*. EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 2015; 24(12) 1447-1459. IF: 3.339. Quartile: 1. (Article).
- Rapado-Castro M; Bartholomeusz CF; Castro-Fornieles J; González-Pinto A; Otero S; Baeza I; Moreno C; Graell M; Janssen J; Bargallo N; Pantelis C; Desco M; Arango C. *Gender effects on brain changes in early-onset psychosis*. EUROPEAN CHILD & ADOLESCENT PSYCHIATRY. 2015; 24(10) 1193-1205. IF: 3.339. Quartile: 1. (Article).
- Arango C. *Present and future of developmental neuropsychopharmacology*. EUROPEAN NEUROPSYCHOPHARMACOLOGY. 2015; 25(5) 703-712. IF: 4.409. Quartile: 1. (Article).
- Persico AM; Arango C; Buitelaar JK; Correll CU; Glennon JC; Hoekstra PJ; Moreno C; Vitiello B; Vorstman J; Zuddas A. *Unmet needs in paediatric psychopharmacology: Present scenario and future perspectives*. EUROPEAN NEUROPSYCHOPHARMACOLOGY. 2015; 25(10) 1513-1531. IF: 4.409. Quartile: 1. (Review).
- Sole B; Bonnin C; Mayoral M; Amann BL; Torres I; González-Pinto A; Jiménez E; Crespo J; Colom F; Tabares-Seisdedos R; Reinares M; Ayuso-Mateos JL; Soria S; García-Portilla MP; Ibáñez A; Vieta E; Martínez-Aran A; Torrent C. *Functional remediation for patients with bipolar II disorder: Improvement of functioning and subsyndromal symptoms*. EUROPEAN NEUROPSYCHOPHARMACOLOGY. 2015; 25(2) 257-264. IF: 4.409. Quartile: 1. (Article).
- Dervic K; García-Amador M; Sudol K; Freed P; Brent DA; Mann JJ; Harkavy-Friedman JM; Oquendo MA. *Bipolar I and II versus unipolar depression: Clinical differences and impulsivity/aggression traits*. EUROPEAN PSYCHIATRY. 2015; 30(1). IF: 3.912. Quartile: 1. (Article).
- Martínez K; Madsen SK; Joshi AA; Joshi SH; Romaan FJ; Villalon-Reina J; Burgaleta M; Karama S; Janssen J; Marinetto E; Desco M; Thompson PM; Colom R. *Reproducibility of brain-cognition relationships using three cortical surface-based protocols: An exhaustive analysis based on cortical thickness*. HUMAN BRAIN MAPPING. 2015; 36(8) 3227-3245. IF: 4.962. Quartile: 1. (Article).
- García-Bueno B; Bioque M; MacDowell KS; Santabarbara J; Martínez-Centgotitabengoa M; Moreno C; Saiz PA; Berrocoso E; Gasso P; Barcones MF; González-Pinto A; Parellada M; Bobes J; Mico JA; Bernardo M; Leza JC. *Pro-/Antiinflammatory Dysregulation in Early Psychosis: Results from a 1-Year Follow-Up Study*. INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY. 2015; 18(2). IF: 4.333. Quartile: 1. (Article).
- Sánchez-Gistau V; Baeza I; Arango C; González-Pinto A; de la Serna E; Parellada M; Graell M; Paya B; Llorente C; Castro-Fornieles J. *The affective dimension of early-onset psychosis and its relationship with suicide*. JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY. 2015; 56(7) 747-755. IF: 6.615. Quartile: 1. (Article).
- Parellada M; Castro-Fornieles J; González-Pinto A; Pina-Camacho L; Moreno D; Rapado-Castro M; Otero S; de la Serna E; Moreno C; Baeza I; Graell M; Arango C. *Predictors of Functional and Clinical Outcome in Early-Onset First-Episode Psychosis: The Child and Adolescent First Episode of Psychosis (CAFEPS) Study*. JOURNAL OF CLINICAL PSYCHIATRY. 2015; 76(11) E1441. IF: 5.408. Quartile: 1. (Article).

- García-Amador M; Merchan-Naranjo J; Tapia C; Moreno C; Castro-Fornieles J; Baeza I; de la Serna E; Alda JA; Muñoz D; Nestares PA; Cantarero CM; Arango C. *Neurological Adverse Effects of Antipsychotics in Children and Adolescents*. JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY. 2015; 35(6) 686-693. IF: 3. Quartile: 2. (Article).
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- Arango C. *A integral treatment for attention deficit hyperactivity disorder in Europe*. REVISTA DE PSIQUIATRIA Y SALUD MENTAL. 2015; 8(4) 197-198. IF: 1.65. Quartile: 3. (Editorial Material).
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- Arango C. *First-Episode Psychosis Research: Time to Move Forward (by Looking Backwards)*. SCHIZOPHRENIA BULLETIN. 2015; 41(6) 1205-1206. IF: 7.757. Quartile: 1. (Editorial Material).

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 - Munoz-Negro JE; Ibanez-Casas I; de Portugal E; Ochoa S; Dolz M; Haro JM; Ruiz-Veguilla M; del Castillo JDL; Cervilla JA. *A dimensional comparison between delusional disorder, schizophrenia and schizoaffective disorder.* SCHIZOPHRENIA RESEARCH. 2015; 169(3-4) 248-254. IF: 4.453. Quartile: 1. (Article).
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- Letters (not included in the IF):**
- Waterdrinker A; Berk M; Venugopal K; Rapado-Castro M; Turner A; Dean OM. *Effects of N-Acetyl Cysteine on Suicidal Ideation in Bipolar Depression.* JOURNAL OF CLINICAL PSYCHIATRY. 2015; 76(5) E665-E665. IF: 5.408. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|-------|
| Own publications | 16 | 79.8 |
| Joint publications | 19 | 98.5 |
| First-decile publications | 18 | 117.2 |
| First-quartile publications | 29 | 166.8 |
| Second-quartile publications | 3 | 6.7 |
| Third-quartile publications | 2 | 3.3 |
| Fourth-quartile publications | 1 | 1.5 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 36 | 178.3 |

Neurological diseases

Group director: **FRANCISCO GRANDAS PÉREZ**

Type: **Emerging**

This group consists of the former groups 3.02 Parkinson's disease and movement disorders, 3.03 Clinical neurology, 3.04 Clinical and etiologic-pathogenic aspects of neuromuscular diseases, and 3.06 Neuroimmunology

Research lines

- ▶ L1: Parkinson's disease and movement disorders:
 - L1.1: New pharmacological therapy for Parkinson's disease.
 - L1.2: Deep brain stimulation for movement disorders.
 - L1.3: Biological markers of Parkinson's disease.
 - L1.4: Pathophysiology of dystonia.
 - L1.5: Balance and gait disorders.
 - L1.6: Hereditary spastic paraparesis.
- ▶ L2: Clinical and etiologic-pathogenic aspects of neuromuscular diseases:
 - L2.1: Biomarkers and etiology-pathogenesis of amyotrophic lateral sclerosis: gene expression in lymphocytes and behavior of stem cells from the olfactory neuroepithelium.
 - L2.2: System for identification and quantification of human endogenous retroviruses (HERVs) in the brain of patients with amyotrophic lateral sclerosis.
- ▶ L3: Neuroimmunology:
 - L3.1: Involvement of the immune system in the pathogenesis and treatment of multiple sclerosis.
 - L3.2: Autoimmune optical neuritis and myelitis.
- ▶ L4: Clinical neurology:
 - L4.1: Cognitive impairment.
 - L4.2: Dementia.

Group members

- **Irene Catalina Álvarez:** Predoctoral.
- **Ana Contreras Chicote:** Predoctoral.
- **Juan Pablo Cuello:** Predoctoral.
- **Clara De Andrés Frutos:** Predoctoral.
- **Beatriz De La Casa Fages:** Postdoctoral.
- **Ángel Esteban García:** Postdoctoral.
- **Carlos Fernández Carballal:** Predoctoral.
- **María Pilar Fernández García:** Predoctoral.
- **José Manuel García Domínguez:** Predoctoral.
- **Haydee Goicoechea Briceño:** Support technician.
- **Francisco Javier Grandas Pérez:** Group director.
- **Juan Adán Guzmán De Villoria Lebiedziewski:** Postdoctoral.
- **Yolanda Higuera Hernández:** Postdoctoral.
- **María Rosario Jiménez Bautista:** Support technician.
- **María Luisa Martínez Gines:** Predoctoral.
- **Andreu Massot Tarrus:** Postdoctoral.
- **Rosario Moratalla Villalba:** Senior researcher.
- **Roberto Moure Romano:** Support technician.
- **Adriana Muñoz González:** Predoctoral.
- **José Luis Muñoz Blanco:** Predoctoral.
- **Francisco Javier Olazarán Rodríguez:** Postdoctoral.
- **Javier Ricardo Pérez Sánchez:** Predoctoral.
- **Julio Ignacio Prieto Montalvo:** Postdoctoral.
- **Ángela Puche Torres:** Support technician.
- **Fernando Romero Delgado:** Predoctoral.
- **Julia Romero Martínez:** Predoctoral.
- **Amanda Rotger Regí:**
- **Alfredo Traba López:** Predoctoral.
- **José Miguel Velázquez Pérez:** Predoctoral.

Research projects – Competitive calls

- Principal investigator: Francisco Javier Grandas Pérez
Title: Biopsia de la mucosa olfatoria: posible biomarcador de la enfermedad de Parkinson.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: José Manuel García Domínguez
Title: Determinación de la expresión de SMAD7 en la esclerosis múltiple y su papel como biomarcador.
Funding body: Fundación GEMCINE
Start date: 2015
End date: 2017

Publications

Total Impact Factor: 57.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Villar LM; Costa-Frossard L; Masterman T; Fernández O; Montalban X; Casanova B; Izquierdo G; Coret F; Tumani H; Saiz A; Arroyo R; Fink K; Leyva L; Espejo C; Simó-Castello M; García-Sánchez MI; Lauda F; Llufrí S; Alvarez-Lafuente R; Olascoaga J; Prada A;. *Lipid-Specific Immunoglobulin M Bands in Cerebrospinal Fluid Are Associated with a Reduced Risk of Developing Progressive Multifocal Leukoencephalopathy during Treatment with Natalizumab*. ANNALS OF NEUROLOGY. 2015; 77(3) 447-457. IF: 9.638. Quartile: 1. (Article).
- Canto E; Tintore M; Villar LM; Costa C; Nurtdinov R; Alvarez-Cermeno JC; Arrambide G; Reverter F; Deisenhammer F; Hegen H; Khademi M; Olsson T; Tumani H; Rodríguez-Martin E; Piehl F; Bartos A; Zimova D; Kotoucova J; Kuhle J; Kappos L; García-Merino JA; Sa. *Chitinase 3-like 1: prognostic biomarker in clinically isolated syndromes*. BRAIN. 2015; 138. 918-931. IF: 10.103. Quartile: 1. (Article).

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- Tamargo J; Caballero R; Delpon E. *Cancer Chemotherapy and Cardiac Arrhythmias: A Review*. DRUG SAFETY. 2015; 38(2) 129-152. IF: 3.206. Quartile: 1. (Review).
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- Olazaran J; Gil-de-Gómez L; Rodríguez-Martín A; Valenti-Soler M; Frades-Payo B; Marin-Munoz J; Antunez C; Frank-García A; Acedo-Jiménez C; Morlan-García L; Petidier-Torregrossa R; Guisasola MC; Bermejo-Pareja F; Sánchez-Ferro A; Pérez-Martínez DA; *A Blood-Based, 7-Metabolite Signature for the Early Diagnosis of Alzheimer's Disease*. JOURNAL OF ALZHEIMERS DISEASE. 2015; 45(4) 1157-1173. IF: 3.92. Quartile: 2. (Article).
- Pastor AG; Otero FD; Navarro SG; Cuello JP; García PS; Arratibel AG; Mohedano AMI; Alen PV; Bullido YF; Osorio JAV;. *Vascular Imaging Before Intravenous Thrombolysis: Consequences of In-Hospital Delay in Applying Two Diagnostic Procedures*. JOURNAL OF NEUROIMAGING. 2015; 25(3) 397-402. IF: 1.625. Quartile: 3. (Article).
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- Lopez AJV; Carballal CF; Useros TP; González CA; Vidorreta JMG; Rodriguez-Varela RG. *Anterior and anterolateral approach in the treatment of thoracic and lumbar vertebral metastasis causing spinal cord compression*. NEUROCIRUGIA. 2015; 26(3) 126-136. IF: 0.41. Quartile: 4. (Article).

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- de Andres C; Teijeiro R; Saiz A; Fernández P; Sánchez-Ramon S. *Changes in B and T-cell subsets and NMO-IgG levels after immunoglobulins and rituximab treatment for an acute attack of neuromyelitis optica.* NEUROLOGIA. 2015; 30(5) 276-282. IF: 1.79. Quartile: 3. (Article).
- Alcolea D; Martínez-Lage P; Sánchez-Juan P; Olazaran J; Antunez C; Izagirre A; Ecay-Torres M; Estanga A; Clerigue M; Guisasola MC; Ruiz DS; Munoz JM; Calero M; Blesa R; Clarimon J; Carmona-Iragui M; Morenas-Rodríguez E; Rodríguez-Rodríguez E; Higu. *Amyloid precursor protein metabolism and inflammation markers in preclinical Alzheimer disease.* NEUROLOGY. 2015; 85(7) 626-633. IF: 8.166. Quartile: 1. (Article).
- Tejera-Alhambra M; Casrouge A; de Andres C; Seyfferth A; Ramos-Medina R; Alonso B; Vega J; Fernández-Paredes L; Albert ML; Sánchez-Ramon S. *Plasma Biomarkers Discriminate Clinical Forms of Multiple Sclerosis.* PLOS ONE. 2015; 10. IF: 3.057. Quartile: 1. (Article).
- Rafales NR; Mohedano AI; Pastor AG; Alen PV; Gines MLM; Osorio JAV; Bullido YF; Gil-Nunez AC; Otero FD. *Ischemic stroke and brachiocephalic artery thrombosis: Do we know the acute management?* CEREBROVASCULAR DISEASES. 2015; 39. 32-32. IF: 3.359. Quartile: 1. (Proceedings paper).

Letters (not included in the IF):

- Dols-Icardo O; Nebot I; Gorostidi A; Ortega-Cubero S; Hernandez I; Rojas-García R; García-Redondo A; Povedano M; Llado A; Alvarez V; Sánchez-Juan P; Pardo J; Jerico I; Vázquez-Costa J; Sevilla T; Cardona F; Indakoechea B; Moreno F; Fernández-Torron R; Mun. *Analysis of the CHCHD10 gene in patients with frontotemporal dementia and amyotrophic lateral sclerosis from Spain.* BRAIN. 2015; 138. E400-U24. IF: 10.103. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 3 | 10.1 |
| Joint publications | 11 | 47.3 |
| First-decile publications | 3 | 27.9 |
| First-quartile publications | 8 | 46.3 |
| Second-quartile publications | 2 | 5.4 |
| Third-quartile publications | 3 | 5.2 |
| Fourth-quartile publications | 1 | 0.4 |
| Nonindexed publications/No IF | 4 | - |
| Total publications (including publications without IF) | 18 | 57.4 |

Biology of inflammation

Group director: M^a CONCEPCIÓN GUIASOLA ZULUETA
Type: Associated clinical

Research lines

- ▶ L1: Inflammatory mediators in degeneration of the knee joint.
- ▶ L2: Inflammatory markers of Alzheimer's disease in serum (Raman Project) and CSF (Signal Project).
- ▶ L3: Heat shock proteins and cardiovascular disease.

The biology of inflammation group is an associated group of the IISGM that focuses on the biology of inflammation, which is defined as the response of an organism's immune system to the damage to its vascularized tissue and cells caused by biological, chemical, physical, or mechanical agents.

The group's research history is a continuation of the work of the Cellular Biology Laboratory of the Experimental Medicine and Surgery Unit created in 1994 by Dr. García-Barreno to study the biology of heat shock proteins, which are induced as part of the cellular response to insult. Its objectives were later extended with the study of the tissue response and inflammatory mediators, especially cytokines (interleukins, lymphokines, interferons, chemokines, colony stimulating factors, and growth factors); hence its new name, Biology of Inflammation.

In order to develop its research lines, this group collaborates with the Child and Adolescent Psychiatry Service of HGUGM (which belongs to CIBERSAM), the Neurology Service of HGUGM (cooperative CIBERNED project), the Artificial Circulation Laboratory of IISGM, and the Orthopedic Surgery Service of HGUGM as part of a multicenter project with Universidad San Pablo, CEU (Instituto de Medicina Molecular Aplicada [*Institute of Applied Molecular Medicine*], and the Orthopedic Surgery Service).



Group members

- **Beatriz Bravo Molina:** Postdoctoral.
- **Elena Dulin Íñiguez:** Postdoctoral.
- **María Concepción Guisasola Zulueta:** Postdoctoral.

Research projects - Competitive calls

- Principal investigator: M^a Concepción Guisasola Zulueta
Title: Metaloproteinasas y sus inhibidores en la degeneración articular de la rodilla.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016

Patents

- Title: Procedimiento mejorado para evaluar el riesgo cardiovascular.
Reference: P200901923 (familia con 2 patentes).
Owner: FIBHGM.
Inventor(s): María Concepción Guisasola, Elena Dulin.

Publications

Total Impact Factor: 13.5

Publications in journals with impact factor indexed in Journal Citation Reports:

- Olazaran J; Gil-de-Gomez L; Rodríguez-Martin A; Valenti-Soler M; Frades-Payo B; Marin-Munoz J; Antunez C; Frank-García A; Acedo-Jiménez C; Morlan-García L; Petidier-Torregrossa R; Guisasola MC; Bermejo-Pareja F; Sánchez-Ferro A; Pérez-Martínez DA;.A Blood-Based, 7-Metabolite Signature for the Early Diagnosis of Alzheimer's Disease. JOURNAL OF ALZHEIMERS DISEASE. 2015; 45(4) 1157-1173. IF: 3.92. Quartile: 2. (Article).

- Alcolea D; Martínez-Lage P; Sánchez-Juan P; Olazaran J; Antunez C; Izagirre A; Ecay-Torres M; Estanga A; Clerigue M; Guisasola MC; Ruiz DS; Muñoz JM; Calero M; Blesa R; Clarimon J; Carmona-Iragui M; Morenas-Rodríguez E; Rodríguez-Rodríguez E; Higu. Amyloid precursor protein metabolism and inflammation markers in preclinical Alzheimer disease. NEUROLOGY. 2015; 85(7) 626-633. IF: 8.166. Quartile: 1. (Article).
- Guisasola MC; Ortiz A; Chana F; Alonso B; Vaquero J. Early inflammatory response in polytraumatized patients: Cytokines and heat shock proteins. A pilot study. ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH. 2015; 101(5) 607-611. IF: 1.393. Quartile: 3. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 1 | 1.4 |
| Joint publications | 2 | 12.1 |
| First-decile publications | 1 | 8.2 |
| First-quartile publications | 1 | 8.2 |
| Second-quartile publications | 1 | 3.9 |
| Third-quartile publications | 1 | 1.4 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 3 | 13.5 |

AREA 4

Area coordinator:
Emilio Bouza Santiago

Infectious diseases and AIDS

Despite considerable advances in our knowledge of infectious diseases in recent years, infection continues to be the main health problem facing society today. The spectrum of infection has changed with the emergence of new infectious diseases, the increase in the number of immunosuppressed patients with their corresponding opportunistic infections, resistance to antibiotics, and the increased frequency of severe fungal infections. Hence the need for a priority research area in infectious diseases and AIDS at the liSGM. Essentially, this area carries out its research around 2 consolidated groups that generate considerable activity both in clinical practice and in laboratory research. In particular, the groups of the area form part of the Centro de Investigación Biomédica Enfermedades Respiratorias (CIBERES [*Networked Center for Biomedical Research in Respiratory Disease*]), promote and lead cooperative networks in transplantation (RESITRA), and manage different multicenter cohorts in the field of AIDS (GESIDA [*AIDS Study Group*]).

The fact that the area runs several research lines covering the broad spectrum of infectious diseases has not prevented it from generating considerable scientific and academic output during the last 5 years. In fact, a key strength of this area is its ability to obtain human resources through competitive calls.

Undoubtedly, the future of the *Infectious Diseases and AIDS* area is based on the maintenance of those aspects of translational research that have characterized its activity to date. Basic research in the laboratory has increased, and new molecular epidemiology systems based on direct sample analysis have been implemented. The area has also promoted cooperative epidemiological studies aimed at analyzing aspects such as the extent of antifungal resistance or at optimizing the treatment of infectious complications in transplant recipients.

In summary, the *Infectious Diseases and AIDS* area maintains the commitment to research that has marked its history. This commitment is based on the conviction that no medical activity of excellence can be envisaged without a structured approach to the most pressing issues affecting daily clinical practice.

Research lines and axes

Strategic axes

- ▶ A1: Consolidation of research networks and collaborations in infectious diseases and AIDS.
- ▶ A2: Consolidation of research lines in infectious diseases and AIDS.
- ▶ A3: Training.
- ▶ A4: Infrastructure.

Strategic lines

Axis 1: Consolidation of research networks and joint projects in infectious diseases and AIDS

1. Integration in research networks in the Infectious diseases and AIDS area

Strategic objectives:

- Ensure integration of the Area in the European Network for the study of *Clostridium difficile* infection.
- Become a core group in the AIDS Research Network at the next call.

2. Promote alliances and collaborations in the Infectious diseases and AIDS area

Strategic objectives:

- Increase participation and collaboration in intramural and extramural cooperative studies.
- Collaborate with other hospital services and other research groups from the IISGM.
- Collaborate with international centers.

Axis 2: Consolidation of research lines in infectious diseases and AIDS

1. Scientific continuity in the microbiology research line

Strategic objectives:

- Develop new molecular epidemiology systems based on direct sample analysis.
- Perform systematic characterization of clonal complexity in *Mycobacterium tuberculosis* infection.
- Establish the genetic significance of microevolution in *Mycobacterium tuberculosis*.
- Evaluate the mechanisms involved in differential infectivity by *Mycobacterium tuberculosis*.

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Strategic lines (cont.)

2. Scientific continuity in the research line of immunodepressed patients and invasive mycoses

Strategic objectives:

- Investigate the molecular diagnosis of invasive mycoses and characterization of isolates.
- Perform studies on antifungal resistance and pharmacokinetics of antifungal agents.
- Optimize the diagnosis and treatment of invasive mycosis in a general hospital.
- Perform a multicenter study of antifungal resistance in hospitals in Madrid.
- Assess resistance to azoles in clinical and environmental isolates of *Aspergillus* species.
- Perform a multicenter study of transplant recipients admitted to the intensive care unit.
- Optimize the management of infectious complications in solid organ recipients.

3. Consolidation of the *Clostridium difficile* research line

Strategic objectives:

- Consolidate research into diagnostic methods in *Clostridium difficile* infection.
- Consolidate research into the molecular epidemiology of *Clostridium difficile*.

4. Consolidate the research line dedicated to susceptibility to new antibiotics and resistance mechanisms in gram-positive microorganisms

5. Consolidate the cardiovascular infection research line

Strategic objectives:

- Optimize rapid diagnosis of ventilator-associated pneumonia.
- Perform a multicenter study of nosocomial pneumonia and pneumonia requiring admission to hospital.
- Examine the role of viral pathogens in severe nosocomial pneumonia.
- Investigate new mechanisms of alert in sepsis.
- Investigate the molecular diagnosis of bloodstream infections caused by fungi and bacteria.
- Establish more effective diagnosis and treatment of catheter-related sepsis.
- Evaluate new diagnostic and therapeutic approaches in endocarditis.

6. Maintenance of clinical trial activity (HIV, HCV, opportunistic infections, tumors)

7. Maintenance of scientific output (impact factor)

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Strategic lines (cont.)

8. Maintenance and diversification of funding sources

Strategic objectives:

- Maintain public and private financial support.
- Enter into agreements with R&D&ti companies.
- Participate and obtain funding in calls for publicly funded projects.
- Participate and obtain funding in calls for privately financed projects.
- Obtain private funding for trials with new antibiotics in gram-positive cocci.
- Maintain the number of researchers contracted.
- Diversify and increase the number of principal investigators who can successfully compete in the calls of the National Plan.

Axis 3: Training

1. Increase possibilities for training

Strategic objectives:

- Promote contracting of clinical research staff.
- Develop undergraduate training in the laboratory.

Axis 4: Improve and increase the physical space available for research in infectious diseases and AIDS

Strategic objectives:

- Create a hepatitis C research laboratory for implementation of the group's basic research area.

Groups in AREA 4

Infectious diseases and AIDS



- ▶ Infectious diseases
- ▶ Biological insult after heart surgery
- ▶ Clinical and epidemiological aspects of HIV and associated conditions

Infectious diseases

Group director: EMILIO BOUZA SANTIAGO
Type: Consolidated

Research programs and lines

P1: Cardiovascular infection

- ▶ L1: Endocarditis.
- ▶ L2: Bacteremia.
- ▶ L3: Catheters.

P2: Nosocomial infection

- ▶ L1: Ventilator-associated pneumonia.
- ▶ L2: *Clostridium difficile*.
- ▶ L3: Non-ventilator-associated nosocomial pneumonia.

P3: Infection in immunodepressed patients

- ▶ L1: Invasive mycosis.
- ▶ L2: BK virus.
- ▶ L3: Infections in transplant recipients.

P4: Mycobacterial infection

- ▶ L1: Tuberculosis and molecular epidemiology.
- ▶ L2: Development of new molecular diagnostic techniques.

P5: Bone and joint infection

- ▶ L1. Prosthesis infection

P6: Antimicrobials and antimicrobial resistance mechanisms



Group members

- **Estefanía Abascal Saiz:** Veterinary surgeon.
- **Iván Adan Rodríguez:** Administration.
- **Luis Alcalá Hernández:** Predoctoral.
- **Beatriz Alonso Fernández:** Biochemistry graduate-CAM Contract.
- **Roberto Alonso Fernández:** Postdoctoral.
- **Emilio Bouza Santiago:** Group director.
- **Almudena Burillo Albizu:** Postdoctoral.
- **María Carcelén Labrador:** Predoctoral-Trainee UAM.
- **Emilia Cercenado Mansilla:** Predoctoral.
- **Raquel Cruces Fernández:** Support technician-Miguel Servet.
- **Nadire María Díaz Pérez:** Technician CAM.
- **Pilar Escribano Martos:** Miguel Servet I.
- **Alia Eworo Ndongo:** Predoctoral.
- **Ana Elisa Fernández Cruz:** Postdoctoral.
- **Rocío Fernández Rey:** Administration.
- **Alicia Galar Recalde:** Postdoctoral.
- **Beatriz Gama Ahijado:** Support technician.
- **Paula García Morales:** Support technician.
- **Rocío García Rubio:** Predoctoral biologist.
- **Dario García De Viedma Del Álamo:** Senior researcher.
- **Paloma Gijón Vidaurreta:** Postdoc.
- **Leire Godostidi Arenas:** Biotechnology graduate.
- **Ana Gómez Nuñez:** Technician-Miguel Servet.
- **Marcela González Del Vequio:** Postresidency FIBHGM.
- **Mª José Goyanes Galán:** Predoctoral.
- **María Guembe Ramírez:** Miguel Servet.
- **Jesús Vicente Guinea Ortega:** Miguel Servet II.
- **Marta Herranz Martín:** Ciber.
- **Angel Iglesias Bautista:** Support technician.



- **Cristina Iglesias Arribas:** Ciber.
- **Santiago Izco Esteban:** Predoctoral.
- **Laura Jiménez Navarro:** Technician.
- **Martha Jeannette Kestler Hernandez:** Postdoctoral.
- **Laura Judith Marcos Zambrano:** FPIS.
- **María De Las Mercedes Marín Arriaza:** Postdoctoral.
- **Gabriel Mariscal Vázquez:** Predoctoral.
- **Adoración Martín López:** Postdoctoral.
- **Andrea Martínez Lozano:** Technician-CAM.
- **Carmen Martínez Jiménez:** Postdoctoral.
- **Pablo Martín-Rabadán Caballero:** Predoctoral.
- **Carmen Martos Díaz:** Postresidency FIBHGM.

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Group members (cont.)

- **Patricia Muñoz García-Paredes:** Postdoctoral.
- **Raquel Navarro Rodríguez:** Biologist.
- **Yurena De Los Ángeles Navarro García:** Other.
- **Raffaela Onori:** Biotechnology.
- **Belén Padilla Ortega:** Predoctoral.
- **Mª Teresa Peláez García de la Rasilla:** Postdoctoral.
- **Laura Pérez García:** Postdoctoral.
- **Maria Jesús Pérez Granda:** Intensified IISGM 2015.
- **Elena Manuela Reigadas Ramírez:** Postdoctoral.
- **Cristina Rincón Sanz:** State Registered Nurse.
- **Belen Rodríguez Sánchez:** Miguel Servet.
- **Sara Rodríguez Fernández:** State Registered Nurse.
- **Adrián Ruiz Rodríguez:** Support technician-Miguel Servet.
- **María Jesús Ruiz Serrano:** Predoctoral.
- **Mar Sánchez Somolinos:** Predoctoral.
- **Sheila Santantonón Garrido:** Technician.
- **Olalla Sierra Tomillo:** Technician.
- **Maricela Valerio Minero:** Postdoctoral.
- **Antonio Vena:** Rio Hortega 2016.



Research projects - Competitive calls

- Principal investigator: Dario García de Viedma del Álamo
Title: Integración de estrategias de secuenciación de genoma completo (WGS) para avanzar en el conocimiento de aspectos clave en la infección por Mycobacterium tuberculosis: virulencia, transmisión, capacidad de adaptación y adquisición de variabilidad.
Funding body: Instituto de Salud Carlos III
Start date: 2012
End date: 2016
- Principal investigator: Patricia Muñoz García-Paredes
Title: PROMULGA II: Validación de la eficacia de un "bundle" de medidas en la incidencia, diagnóstico rápido, tratamiento y mortalidad de la infección fungica nosocomial.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: M^a Teresa Peláez García de la Rasilla
Title: Evaluación de la resistencia a azoles de los aislados de Aspergillus spp. en la Comunidad de Madrid. Primer proyecto multicéntrico.
Funding body: Instituto de Salud Carlos III
Start date: 2014.
End date: 2016
- Principal investigator: Emilio Bouza Santiago
Title: Evolución de la prevalencia, diagnóstico, caracterización fenotípica y genotípica de la infección por C. difficile (ICD) en España. Factores de riesgo de recurrencia y valor del PET-TAC en la ICD.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: María Guembe Ramírez
Title: Proyecto de Investigación asociado a Miguel Servet tipo I.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: Emilio Bouza Santiago
Title: Estudio randomizado para evaluar el sellado de catéteres venosos periféricos con heparina vs. suero salino en pacientes ingresados en medicina interna.
Funding body: FEMI
Start date: 2015
End date: 2018
- Principal investigator: Maricela Valerio Minero
Title: Optimización del manejo de la infección fungica invasora en el paciente transplantado y en el paciente oncológico, mortalidad y coste hospitalario.
Funding body: F. Mutua Madrileña
Start date: 2015
End date: 2018
- Principal investigator: Belén Rodríguez Sánchez
Title: Estudio Randomizado para evaluar el sellado de catéteres venosos periféricos con heparina vs. suero salino en pacientes ingresados en Medicina Interna. Proyecto de investigación asociado a Miguel Servet tipo I.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017
- Principal investigator: Jesús Vicente Guinea Ortega
Title: Proyecto FIS 2014. Impacto clínico de la integración de la triada compuesta por datos de farmacocinética, farmacodinamia y patogenicidad de Candida en el pronóstico del paciente con candidemia.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------------------------|---|--|-----------------------------------|
| Martha Jeannette Kestler Hernández | Estudio games de endocarditis infecciosa en España | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid |
| Maricela Valerio Minero | Implementación de un programa para el control del uso de antifúngicos en un hospital general universitario "Antifungal stewardship" | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid |
| Carmen Martínez Jiménez | Evaluación de biomarcadores serológicos de candidiasis invasiva para su aplicación clínica | Emilio Bouza Santiago, Patricia Muñoz García | Universidad Complutense de Madrid |
| Helena Reigadas | Estudio de la infección por Clostridium difficile: incidencia, epidemiología, características clínicas, factores de riesgo, de gravedad y recurrencia | Emilio Bouza Santiago | Universidad Complutense de Madrid |
| Mª Jesús Pérez Granda | Prevención de la neumonía asociada a ventilación mecánica en el post-operatorio de cirugía cardiaca | Emilio Bouza Santiago | Universidad Complutense de Madrid |

Clinical practice guidelines

| Authors | Title | Publication |
|--|--|--|
| Valerio M; Vena A; Bouza E; Reiter N; Viale P; Hochreiter M; Giannella M; Munoz P | How much European prescribing physicians know about invasive fungal infections management? | BMC Infectious Diseases |
| Gudiol F; Aguado JM; Almirante B; Bouza E; Cercenado E; Dominguez MA; Gasch O; Lora-Tamayo J; Miro JM; Palomar M; Pascual A; Pericas JM; Pujol M; Rodríguez-Bano J; Shaw | Diagnosis and treatment of bacteremia and endocarditis due to <i>Staphylococcus aureus</i> . A clinical guideline from the Spanish Society of Clinical Microbiology and Infectious | Enfermedades Infecciosas y Microbiología Clínica |
| Vidal E; Cervera C; Cordero E; Arminanzas C; Carratala J; Cisneros JM; Farinas MC; Lopez-Medrano F; Moreno A; Munoz P; Origuen J; Sabe N; Valerio M; Torre-Cisneros J | Management of urinary tract infection in solid organ transplant recipients: Consensus statement of the Group for the Study of Infection in Transplant Recipients (GESITRA) of | Enfermedades Infecciosas y Microbiología Clínica |
| Vidal E; Cervera C; Cordero E; Arminanzas C; Carratala J; Cisneros JM; Farinas MC; Lopez-Medrano F; Moreno A; Munoz P; Origuen J; Sabe N; Valerio M; Torre-Cisneros J | Executive summary. Management of urinary tract infection in solid organ transplant recipients: Consensus statement of the Group for the Study of Infection in Transplant | Enfermedades Infecciosas y Microbiología Clínica |

Patents and intellectual property registrations

- Title: Dispositivo para prevenir la neumonía asociada a ventilación mecánica
Reference: U201430814
Owner: FIBHGM
Inventor(s): Juan Francisco del Cañizo, Emilio Bouza, M^a Jesús Pérez
- Title: Dispositivo aplicador de antifúngico coloreado
Reference: P201430751
Owner: FIBHGM
Inventor(s): Pablo Martín-Rabadán
- Title: Portaobjetos
Reference: U201430943
Owner: FIBHGM
Inventor(s): Pablo Martín-Rabadán
- Title: Estudio de impacto clínico de un plan docente de formación continuada sobre las infecciones asociadas a dispositivos intravasculares
Reference: Registry No.: M-003545/2013
Owner: FIBHGM
Inventor(s): Emilio Bouza, María Guembe, Patricia Muñoz, M^a Jesús Pérez, M^a del Mar San Segundo
- Title: Recomendaciones sobre el manejo de Infecciones Fúngicas Invasoras (IFIs)
Reference: Registry No.: 16/2014/5265
Owner: FIBHGM
Inventor(s): Patricia Muñoz, Emilio Bouza, María Sanjurjo, Carmen Rodríguez, Maricela Valerio
- Title: Material docente para la infección relacionada con el catéter
Reference: Registry No.: 16/2014/6113
Owner: FIBHGM
Inventor(s): María Guembe, Emilio Bouza, María Jesús Pérez
- Title: Optimización en el Diagnóstico Microbiológico de los Reservorios Totalmente Implantables
Reference: Registry No.: 16/2015/2094
Owner: FIBHGM
Inventor(s): María Guembe, Pablo Martín-Rabadán, Emilio Bouza, M^a Luisa Rivera, Teresa Vicente
- Title: Tolerancia cero a la bacteriemia relacionada con el catéter: optimización de la prevención con nuevos sistemas de vigilancia de las vías endovasculares
Reference: Registry No.: 16/2015/2983
Owner: FIBHGM
Inventor(s): María Guembe, Emilio Bouza, M^a Jesús Pérez Granda.
- Title: Documento de registro para vigilancia durante la inserción y el mantenimiento de los catéteres intravasculares
Reference: Registry No.: 16/2015/2984
Owner: FIBHGM
Inventor(s): María Guembe, Emilio Bouza, M^a Jesús Pérez Granda.

Publications

Total Impact Factor: 244.6

Publications in journals with impact factor indexed in Journal Citation Reports

- Saugar JM; Merino FJ; Martin-Rabadan P; Fernandez-Soto P; Ortega S; Garate T; Rodríguez E. *Application of real-time PCR for the detection of Strongyloides spp. in clinical samples in a reference center in Spain.* ACTA TROPICA. 2015; 142. 20-25. IF: 2.38. Quartile: 2. (Article).
- Granda MJP; Cruces R; Martin-Rabadan P; Bouza E; Guembe M. *Stickers used for the identification of intravenous lines could be a portal of entry of microorganisms through the catheter: Results from a clinical study.* AMERICAN JOURNAL OF INFECTION CONTROL. 2015; 43(8) 895-899. IF: 1.995. Quartile: 2. (Article).

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Publications in journals without impact factor indexed in Journal Citation Reports:

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- Pelaez T; Monteiro M C; García-Rubio R; Bouza E; Gomez-Lopez A; Mellado E. *First detection of Aspergillus fumigatus azole-resistant strain due to Cyp51A TR46/Y121F/T289A in an azole-naïve patient in Spain*. New microbes and new infections. 2015; 6. 33-4. (Article).

Letters (not included in the impact factor):

- Munoz P; Kestler M; Bermejo J; Bouza E. *Echocardiography in Patients With Enterococcal Bacteremia Reply*. CLINICAL INFECTIOUS DISEASES. 2015; 61(1) 133-135. IF: 8.736. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|-------|
| Own publications | 40 | 132.7 |
| Joint publications | 27 | 111.8 |
| First-decile publications | 10 | 67.4 |
| First-quartile publications | 31 | 158.7 |
| Second-quartile publications | 24 | 67.5 |
| Third-quartile publications | 11 | 17.3 |
| Fourth-quartile publications | 1 | 1.0 |
| Nonindexed publications/No IF | 6 | - |
| Total publications (including publications without IF) | 73 | 244.6 |

Clinical and epidemiological aspects of HIV and associated conditions

Group director: JUAN BERENGUER BERENGUER

Type: Consolidated

Research programs and lines

P1: HIV infection

- ▶ L1: Epidemiology of HIV infection.
- ▶ L2: Natural history of HIV infection.
- ▶ L3: Immunopathology of HIV infection.
- ▶ L4: Treatment of HIV infection.
- ▶ L5: Vaccines against HIV.
- ▶ L6: Strategies for the eradication of HIV.

P2. Comorbid conditions associated with HIV infection

- ▶ L1: Liver complications in HIV-infected patients.
- ▶ L2: Malignancy in HIV-infected patients.
- ▶ L3: Cardiovascular complications in HIV-infected patients.
- ▶ L4: Renal complications in HIV-infected patients.
- ▶ L5: Metabolic complications in HIV-infected patients.
- ▶ L6: Neurocognitive impairment in HIV-infected patients.
- ▶ L7: HIV and aging.

Group members

- **M^a Teresa Aldamiz-Echevarría Lois:** Postdoctoral.
- **Juan Berenguer Berenguer:** Group director.
- **Ana María Carrero Gras:** Postdoctoral.
- **Cristina Díez Romero:** Postdoctoral.
- **Isabel Gutiérrez Cuéllar:** Research nurse.
- **Juan Carlos López Bernaldo De Quiros:** Senior researcher.
- **Leire López Latorre:** Postdoctoral.
- **Pilar Miralles Martín:** Predoctoral.
- **Francisco Parras Vázquez:** Postdoctoral.
- **Margarita Ramírez Schacke:** Research nurse.
- **Pablo Ryan Murua:** Postdoctoral.
- **Francisco Tejerina Picado:** Predoctoral.

Research projects - Competitive calls

- Principal investigator: Juan Berenguer Berenguer
Title: Fiabilidad de la elastografía de transición para predecir eventos hepáticos y supervivencia en pacientes coinfectados con VIH y VHC
Funding body: Gilead Sciences S.L.
Start date: 2014
End date: 2015
- Principal investigator: Juan Berenguer Berenguer
Title: Proyecto FIS 2014. Efectos de la erradicación del VHC en pacientes con cirrosis avanzada por VHC una aproximación traslacional.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017



Theses

| Doctoral student | Title | Supervisor(s) | University |
|-------------------------------|---|--|-----------------------------------|
| Guillermo Maestro de la Calle | Estudio comparativo a largo plazo de la función renal en pacientes con infección VIH tratados con tenofovir disoproxil fumarato | Juan Carlos López Bernaldo de Quirós | Universidad Complutense de Madrid |
| Ana Luisa Vargas | Marcadores predictivos de fibrosis y de respuesta al tratamiento frente al virus de la hepatitis C (VHC) en pacientes coinfectados por VIH y VHC | Juan Berenguer Berenguer | Universidad Complutense de Madrid |
| Sari M Arponen | Efecto del tratamiento antirretroviral en la respuesta virológica a interferón pegilado y ribavirina en pacientes coinfectados por el virus de la inmunodeficiencia humana y el virus de la hepatitis c | Juan Berenguer Berenguer, Juan González García, Rafael Bañares Cañizares | Universidad Complutense de Madrid |

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF HIV AND ASSOCIATED CONDITIONS

Clinical practice guidelines

| Authors | Title | Publication |
|---|---|---|
| Berenguer J; Polo R; Aldeguer JL; Lozano F; Aguirrebengoa K; Arribas JR; Blanco JR; Boix V; Casado JL; Clotet B; Crespo M; Domingo P; Estrada V; García F; Gatell JM; Gonzalez-García J; Gutiérrez F; Iribarren JA; Knobel H; Llibre JM; Locutura J; Lopez JC; Miro JM; Moreno S; Podzamczer D; Portilla J; Pulido F; Ribera E; Riera M; Rubio R; Santos J; Sanz-Moreno J; Sanz J; Tellez MJ; Tuset M; Rivero A | Executive summary of the GESIDA/National AIDS Plan Consensus Document on antiretroviral therapy in adults infected by the human immunodeficiency virus (updated January 2015) | Enfermedades Infecciosas y Microbiología Clínica |
| Juan Berenguer Berenguer | Documento del II Consenso español sobre tratamiento de la hepatitis C | Asociación Española para el Estudio del Hígado (AEEH) |
| Mª Luisa Montes, Javier Murillas, Enrique Ortega, Juan A Pineda, Carmen Quereda, Antonio Rivero, Antoni Rimola, Ignacio de los Santos, Ma Jesús Téllez, Cristina Tural, Eva van den Eynde | Manejo de las hepatitis virales en pacientes infectados por el VIH. Guía de Práctica Clínica de GeSIDA | GESIDA |
| Juan Berenguer, Rosa Polo | Documento de consenso de GeSIDA/Plan Nacional sobre el Sida respecto al tratamiento antirretroviral en adultos con infección por el virus de la inmunodeficiencia humana | GESIDA |

Publications

Total Impact Factor: 61.8

Publications in journals with impact factor indexed in Journal Citation Reports

- Baptista MJ; García O; Morgades M; Gonzalez-Barca E; Miralles P; Lopez-Guillermo A; Abella E; Moreno M; Sancho JM; Feliu E; Ribera JM; Navarro JT. *HIV-infection impact on clinical-biological features and outcome of diffuse large B-cell lymphoma treated with R-CHOP in the combination antiretroviral therapy era.* AIDS. 2015; 29(7) 811-818. IF: 4.407. Quartile: 1. (Article).
- Pineda-Tenor D; Berenguer J; Jiménez-Sousa MA; Carrero A; García-Alvarez M; Aldamiz-Echevarria T; García-Broncano P; Diez C; Guzman-Fulgencio M; Fernandez-Rodríguez A; Resino S. *rs7903146 Polymorphism at Transcription Factor 7 Like 2 Gene Is Associated with Total Cholesterol and Lipoprotein Profile in HIV/Hepatitis C Virus-Coinfected Patients.* AIDS RESEARCH AND HUMAN RETROVIRUSES. 2015; 31(3) 326-334. IF: 1.949. Quartile: 3. (Article).
- Aldamiz-Echevarria T; Gonzalez-García J; Von Wichmann MA; Crespo M; Lopez-Aldeguer J; Quereda C; Tellez MJ; Galindo MJ; Sanz J; Santos I; Guardiola JM; Bellon JM; Montes M; Berenguer J. *Association of baseline CD4+cell count and HIV-RNA on sustained virologic response to interferon-ribavirin in HIV/HCV coinfecting patients.* ANNALS OF HEPATOLOGY. 2015; 14(4) 464-469. IF: 1.811. Quartile: 4. (Article).
- Pacheco YM; Jarrin I; Rosado I; Campins AA; Berenguer J; Iribarren JA; Rivero M; Munoz-Medina L; Bernal-Morell E; Gutiérrez F; Leal M. *Increased risk of non-AIDS-related events in HIV subjects with persistent low CD4 counts despite cART in the CoRIS cohort.* ANTIVIRAL RESEARCH. 2015; 117. 69-74. IF: 4.909. Quartile: 1. (Article).
- Berenguer J; Zamora FX; Aldamiz-Echevarria T; Von Wichmann MA; Crespo M; Lopez-Aldeguer J; Carrero A; Montes M; Quereda C; Tellez MJ; Galindo MJ; Sanz J; Santos I; Guardiola JM; Barros C; Ortega E; Pulido F; Rubio R; Mallol. *Comparison of the Prognostic Value of Liver Biopsy and FIB-4 Index in Patients Coinfected With HIV and Hepatitis C Virus.* CLINICAL INFECTIOUS DISEASES. 2015; 60(6) 950-958. IF: 8.736. Quartile: 1. (Article).

- Soriano V; Berenguer J. *Extrahepatic comorbidities associated with hepatitis C virus in HIV-infected patients.* CURRENT OPINION IN HIV AND AIDS. 2015; 10(5) 309-315. IF: 4.378. Quartile: 1. (Review).
- Blasco AJ; Libre JM; Berenguer J; Gonzalez-García J; Knobel H; Lozano F; Podzamczer D; Pulido F; Rivero A; Tuset M; Lazaro P; Gatell JM. *Costs and cost-efficacy analysis of the 2014 GESIDA/Spanish National AIDS Plan recommended guidelines for initial antiretroviral therapy in HIV-infected adults.* ENFERMEDADES INFECCIOSAS Y Microbiología CLINICA. 2015; 33(3) 156-165. IF: 1.53. Quartile: 3. (Article).
- Berenguer J; Polo R; Aldeguer JL; Lozano F; Aguirrebengoa K; Arribas JR; Blanco JR; Boix V; Casado JL; Clotet B; Crespo M; Domingo P; Estrada V; García F; Gatell JM; Gonzalez-García J; Gutiérrez F; Iribarren JA; Knobel H; Libre JM; Locutura J; Lopez JC; *Executive summary of the GESIDA/National AIDS Plan Consensus Document on antiretroviral therapy in adults infected by the human immunodeficiency virus (updated January 2015).* ENFERMEDADES INFECCIOSAS Y Microbiología CLINICA. 2015; 33(8) 544-556. IF: 1.53. Quartile: 3. (Article).
- Guzman-Fulgencio M; Berenguer J; Jiménez-Sousa MA; Micheloud D; García-Alvarez M; Bellon JM; Aldamiz-Echevarria T; García-Broncano P; Catalán P; Diez C; Pineda-Tenor D; Resino S. *IL7RA polymorphisms predict the CD4+recovery in HIV patients on cART.* EUROPEAN JOURNAL OF CLINICAL INVESTIGATION. 2015; 45(11) 1192-1199. IF: 2.687. Quartile: 1. (Article).
- Guzman-Fulgencio M; Berenguer J; Pineda-Tenor D; Jiménez-Sousa MA; García-Alvarez M; Aldamiz-Echevarria T; Carrero A; Diez C; Tejerina F; Vázquez S; Briz V; Resino S. *Association between IL7RA polymorphisms and the successful therapy against HCV in HIV/HCV-coinfected patients.* EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES. 2015; 34(2) 385-393. IF: 2.857. Quartile: 2. (Article).
- Martinez E; Ribera E; Clotet B; Estrada V; Sanz J; Berenguer J; Rubio R; Pulido F; Larrousse M; Curran A; Negredo E; Arterburn S; Ferrer P; Alvarez ML. *Switching from zidovudine/lamivudine to tenofovir/emtricitabine improves fat distribution as measured by fat mass ratio.* HIV MEDICINE. 2015; 16(6) 370-374. IF: 3.341. Quartile: 2. (Article).
- Fernandez-Rodríguez A; Berenguer J; Jiménez-Sousa MA; García-Alvarez M; Aldamiz-Echevarria T; Pineda-Tenor D; Diez C; de la Barrera J; Bellon JM; Briz V; Resino S. *Toll-like receptor 8 (TLR8) polymorphisms are associated with non-progression of chronic hepatitis C in HIV/HCV coinfected patients.* INFECTION GENETICS AND EVOLUTION. 2015; 36: 339-344. IF: 2.591. Quartile: 2. (Article).
- Pineda-Tenor D; Berenguer J; García-Alvarez M; Guzman-Fulgencio M; Carrero A; Aldamiz-Echevarria T; Tejerina F; Diez C; Jiménez-Sousa MA; Fernández-Rodríguez A; Mun. *Single Nucleotide Polymorphisms of CXCL9-11 Chemokines Are Associated With Liver Fibrosis in HIV/HCV-Coinfected Patients.* JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2015; 68(4) 386-395. IF: 3.806. Quartile: 1. (Article).
- Walmsley S; Baumgarten A; Berenguer J; Felizarta F; Florence E; Khuong-Josse MA; Kilby JM; Lutz T; Podzamczer D; Portilla J; Roth N; Wong D; Granier C; Wynne B; Pappa K. *Dolutegravir Plus Abacavir/Lamivudine for the Treatment of HIV-1 Infection in Antiretroviral Therapy-Naive Patients: Week 96 and Week 144 Results From the SINGLE Randomized Clinical Trial.* JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2015; 70(5) 515-519. IF: 3.806. Quartile: 1. (Article).
- Santos JR; Blanco JL; Masia M; Gutiérrez F; Pérez-Elias MJ; Iribarren JA; Force L; Antela A; Knobel H; Salavert M; De Quiros JCLB; Pino M; Paredes R; Clotet B. *Virological failure to raltegravir in Spain: incidence, prevalence and clinical consequences.* JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY. 2015; 70(11) 3087-3095. IF: 4.919. Quartile: 1. (Article).
- Jiménez-Sousa MA; Rallon N; Berenguer J; Pineda-Tenor D; Lopez JC; Soriano V; Guzman-Fulgencio M; Cosin J; Retana D; García-Alvarez M; Miralles P; Benito JM; Resino S. *TLR3 polymorphisms are associated with virologic response to hepatitis C virus (HCV) treatment in HIV/HCV coinfected patients.* JOURNAL OF CLINICAL VIROLOGY. 2015; 65: 62-67. IF: 2.647. Quartile: 2. (Article).
- Guzman-Fulgencio M; Berenguer J; Jiménez-Sousa MA; Pineda-Tenor D; Aldamiz-Echevarria T; García-Broncano P; Carrero A; García-Alvarez M; Tejerina F; Diez C; Vázquez-Moron S; Resino S. *Association between IL7R polymorphisms*

and severe liver disease in HIV/HCV coinfected patients: a cross-sectional study.
JOURNAL OF TRANSLATIONAL MEDICINE. 2015; 13. IF: 3.694. Quartile: 1. (Article).

- Mills A; Garner W; Pozniak A; Berenguer J; Speck R; Bender R; Thai N. *Patient-Reported Symptoms Over 48 Weeks in a Randomized, Open-Label, Phase IIIb Non-Inferiority Trial of Adults with HIV Switching to Co-Formulated Elvitegravir, Cobicistat, Emtricitabine, and Tenofovir DF versus Continuation of Non-Nucleoside Reverse Transcriptase PATIENT-PATIENT CENTERED OUTCOMES RESEARCH.* 2015; 8(4) 359-371. IF: 2.227. Quartile: 2. (Article).

Letters (not included in the impact factor):

- Sánchez-Conde M; Pérez-Latorre L; Rincon D; Miralles P; Catalina MV; Lopez JC; Banares R; Berenguer J. *Effect of Eradication of HCV on Hepatic Venous Pressure Gradient in HIV-Infected Patients With Compensated HCV-Related Cirrhosis.* JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2015; 69(4) E142-E144. IF: 3.806. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 4 | 16.5 |
| Joint publications | 14 | 45.4 |
| First-decile publications | 3 | 18.6 |
| First-quartile publications | 9 | 41.3 |
| Second-quartile publications | 5 | 13.7 |
| Third-quartile publications | 3 | 5.0 |
| Fourth-quartile publications | 1 | 1.8 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 19 | 61.8 |

Biological insult after heart surgery

Group director: FRANCISCO JAVIER HORTAL IGLESIAS

Type: Associated clinical

Research lines

- ▶ L1: Risk scales in heart surgery.
- ▶ L2: Infections in immunodepressed patients.

Group members

- José Miguel Álvarez Valdivieso: Predoctoral.
- Mónica Barranco Benito: Predoctoral.
- Francisco Javier Hortal Iglesias: Group director.

Publications

Total Impact Factor: 2.1

*Publications in journals with impact factor indexed
in Journal Citation Reports*

- Morillas-Sendin P; Delgado-Baeza E; Delgado-Martos MJ; Barranco M; del Canizo JF; Ruiz M; Quintana-Villamandos B. *Effects of Sevoflurane and Propofol on Organ Blood Flow in Left Ventricular Assist Devices in Pigs*. BIOMED RESEARCH INTERNATIONAL. 2015;. IF: 2.134. Quartile: 3. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 1 | 2.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 1 | 2.1 |

AREA 5

*Area coordinator:
Eduardo Fernández-Cruz Pérez*

Diseases of the immune system

Immunology could be considered the medical discipline in which the most relevant advances have been made in recent years. These advances are evidenced by the many Nobel Prizes awarded to researchers in the field. It is no surprise, therefore, that the IISGM has a dedicated immunology research area. In addition to its scientific and social relevance, the importance of this area within the Institute can be seen in its cutting edge scientific output, the wide variety of its research lines, and its collaborations with other research areas, such as basic and clinical immunology, rheumatology, allergology, dermatology, gynecology and obstetrics, cardiology, pneumology, pharmacogenetics, hematology, and neurology.

The participation of this Area in numerous publications by groups belonging to other areas of the Institute clearly highlights its philosophy of cooperative research, the cornerstone of any health research institute. There can be no doubt that the Area is perfectly situated for setting down strategic lines to ensure its continued growth. As a result, collaboration agreements have been proposed with prestigious international institutions, groups from the IISGM itself, and groups from outside the IISGM (Madrid Science and Technology Park, FHL Study Group, Transfusion Center of Comunidad de Madrid), the School of Medicine of Universidad Complutense de Madrid (Department of Microbiology I), and companies active in the field (Binding Site, Izasa, Inmunotek, Grifols).

The area has set itself the strategic objectives of expanding the core activity of its more clinical groups, training undergraduate and postgraduate staff in order to consolidate and improve scientific output, and expanding the number of principal investigators able to successfully apply for competitive calls.

Research lines and axes

Strategic axes

- ▶ A1: Promotion of alliances and collaborations in immunology.
- ▶ A2: Consolidation of research lines in immunology.
- ▶ A3: Training.
- ▶ A4: Quality assurance.

Strategic lines

Axis 1: Promotion of alliances and collaborations in immunology

1. Consolidation of the INSIGHT agreement in the field of transplant immunology

Strategic objectives:

- Report on collaboration with INSIGHT.

2. National and international collaboration for the immunology-based diagnosis of patients included in therapy protocol HLH-2004 (Institut Pasteur, Paris; Hospital Charité, Berlin)

3. Cooperation with clinical groups in oncology

Strategic objectives:

- Participation in established cooperative research structures.
- Biomedicina/2010 CM Programa NEOPLASBIM.

4. Cooperation with clinical groups in rheumatology

Strategic objectives:

- Participation in stable cooperative research structures.
- Biomedicina/2010 CM Programa REUMATOLOGÍA.

(Continued on next page)

Strategic lines (cont.)

Axis 2: Consolidation of research lines in immunology

1. Development of new diagnostic procedures in immunoallergy: component-based diagnosis

Strategic objectives:

- Develop diagnostic tests for the response to aeroallergens.
- Develop diagnostic tests for the response to food allergens.

2. Design and development of a phase II multicenter clinical trial with the company Inmunotek

Strategic objectives:

- Develop a personalized bacterial vaccine for the immunomodulation of patients with recurrent infections.

3. Validation of laboratory procedures for the quantification of serum levels of *Salmonella typhi* antibodies in the evaluation of immunodeficiencies (multicenter clinical trial on production of antibodies)

4. Consolidation of research lines with public or private funding

Strategic objectives:

- Apply for funding from the National Plan.
- Apply for funding from private institutions.
- Promote research agreements and contracts with public and private institutions (national and international).

5. Continuing improvement in scientific output

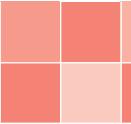
Strategic objectives:

- Maintain collaborations with groups of scientific excellence.
- Favor research lines in human disease.

6. Expansion of the basic activity of the rheumatology group

7. Design, introduction, maintenance, and utilization of national and international registries of immunodeficiencies

(Continued on next page)



Strategic lines (*cont.*)

Axis 3: Training

1. Consolidation and improvement of the scientific output of trainees

Strategic objectives:

- Publish results from basic and clinical research.
- Encourage participation of medical residents and trainees in the preparation of manuscripts.
- Promote preparation of doctoral theses.

Axis 4: Quality assurance

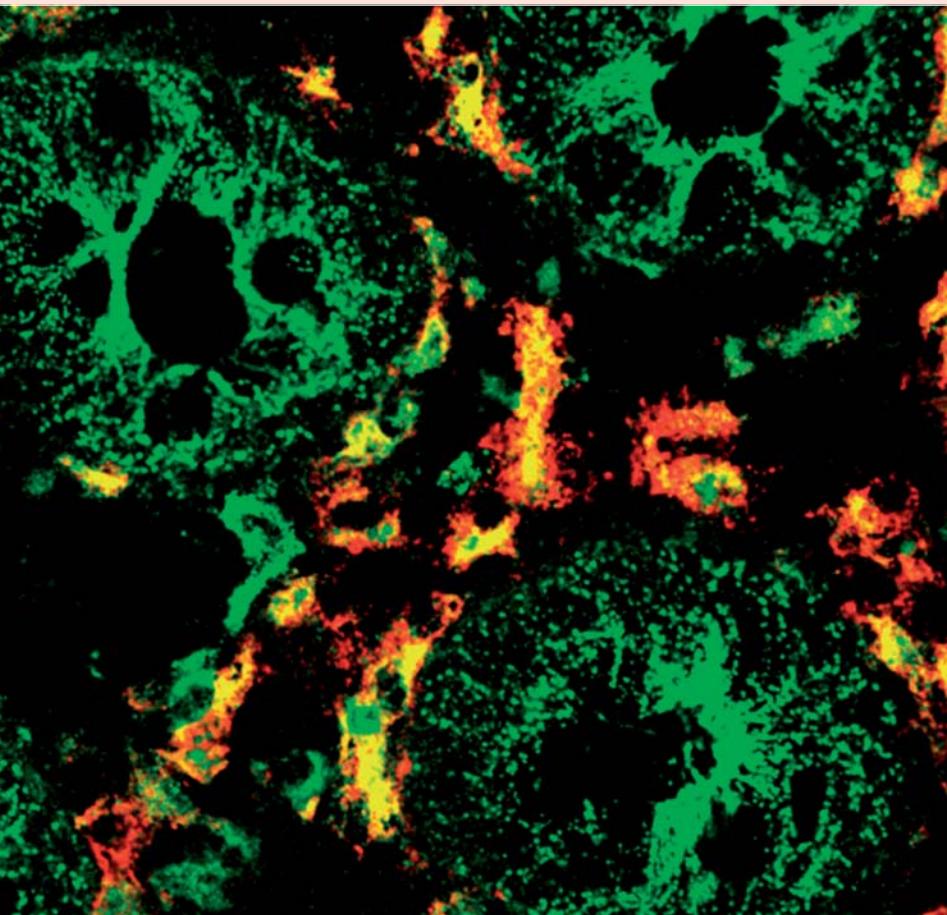
1. Certification of the laboratory by ENAC. Standard UNE-EN-ISO 15189 (maintenance and extension of the scope of the certification)

Strategic objectives:

- Re-evaluation of the laboratory.
- Certification by category; flexible scope.
- Promotion of activity so that the laboratory can be used to perform clinical trials.

Groups in AREA 5

Diseases of the immune system



- ▶ Pathophysiology and clinical research of chronic inflammatory and immune diseases
- ▶ Molecular biology of HIV
- ▶ Systemic autoimmune diseases
- ▶ Immuno-oncology
- ▶ Pathogenesis of the immunoallergic response
- ▶ Immune homeostasis and regulation in diseases associated with the immune system
(previously Immunology of HIV infection in pediatric patients)
- ▶ Infection in pediatric patients
- ▶ Allergic diseases in pediatric patients

Pathophysiology and clinical research of chronic inflammatory and immune diseases

Group director: EDUARDO FERNÁNDEZ-CRUZ PÉREZ

Type: Consolidated

Research programs and lines

P1: Immunomodulation and reconstitution of the immune response to viral and bacterial infections

- ▶ L1: Study of the immunomodulatory response to a personalized vaccine in patients with recurrent infection.
- ▶ L2: Study of the response of *Salmonella typhi* antibodies for evaluation of immunodeficiencies.

P2: Primary immunodeficiencies: pathogenesis, classification, and treatment

- ▶ L1: Study, functional characterization, and treatment of primary immunodeficiencies.
- ▶ L2: Classification and segregation of familial primary immunodeficiencies.
- ▶ L3: Impact of the polymorphism C77G in exon 4 of the CD45 gene on hemophagocytic lymphohistiocytosis.

P3: Molecular immunogenetics of immune diseases

- ▶ L1: Characterization of genetic variants, susceptibility single-nucleotide polymorphisms (SNPs), and molecular diagnosis in immunodeficiencies and immune diseases.

P4: Transplant immunology

- ▶ L1: Immunology of infections and rejection in solid organ recipients.

P5: Neuroimmunology of multiple sclerosis

- ▶ L1: Immunoregulation and immunomodulation in multiple sclerosis.

P6: Immunology of autoimmune chronic inflammatory diseases

- ▶ L1: Study of the role of anticitrullinated peptide antibodies in chronic autoimmune inflammatory diseases (rheumatoid arthritis).

P7: Reproductive immunology

- ▶ L1: Quantitative and functional study of lymphocyte subpopulations and immunogenetic study of diseases of the reproductive system (recurrent miscarriage, IVF, obstetric antiphospholipid antibody syndrome): immunomodulation.

P8: Standardization of immunochemical laboratory procedures in monoclonal gammopathy and allergy

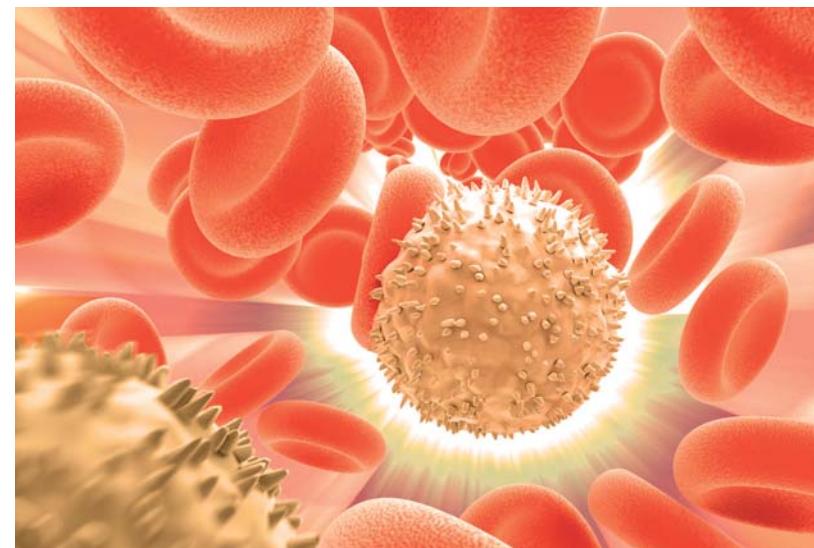
- ▶ L1: Implementation of new analytic procedures in allergy: component-resolved diagnosis.

Group members

- **Antonio Arnaiz Villena:** Senior researcher.
- **Javier Alberto Carbone Campoverde:** Senior researcher.
- **Eduardo Fernández-Cruz Pérez:** Group director
- **Juana Gil Herrera:** Senior researcher.
- **Narcisa Martínez Quiles:** Senior researcher.
- **Joaquín Navarro Caspistegui:** Postdoctoral.
- **Carmen Rodríguez Sainz:** Postdoctoral.
- **Juan José Rodríguez Molina:** Postdoctoral.
- **Elizabeth Angélica Sarmiento Marchese:** Postdoctoral.
- **Ricardo Suárez Fernández:** Senior researcher.

Research projects - Competitive calls

- Principal investigator: Juana Gil Herrera
Title: Perfiles inmunogenéticos en la linfohistiocitosis hemofagocítica (HLH) aplicados al diagnóstico rápido de los casos familiares (FHL) de la enfermedad.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Eduardo Fernández-Cruz Pérez
Title: Evaluación de la respuesta a un inmunógeno polivalente administrado vía mucosa sublingual en la prevención de infecciones recurrentes en pacientes con EPOC.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015



Theses

| Doctoral student | Title | Supervisor(s) | University |
|--------------------------------|--|---|-------------------------|
| Maria Eugenia Meiler Rodriguez | Estudio de la proteína Cortactina en la adhesión celular y de la familia de proteínas adaptadoras Crk en la formación del pedestal de actina por Escherichia coli enteropatógena | Narcisa Martinez Quiles | Universidad Complutense |
| Reda Mohamed Mohamed Salem | Nuevos fitocompuestos naturales para el tratamiento y prevención de las diarreas infecciosas | Narcisa Martinez Quiles. Codirectores: Carmina Rodriguez Fdez y Vicente Sinisterra Gago | Universidad Complutense |

Publications

Total Impact Factor: 48.1

Publications in journals with impact factor indexed in Journal Citation Reports:

- Horcajada-Reales C; Barchino-Ortiz L; Conde-Montero E; Suarez-Fernandez R. *Acrodermatitis enteropathica in an adult.* AUSTRALIAN FAMILY PHYSICIAN. 2015; 44(5) 299-300. IF: 0.759. Quartile: 3. (Editorial Material).
- Janta I; Martinez-Estupinan L; Valor L; Montoro M; Rodriguez OB; Aragues IH; Bello N; Hernandez-Floz D; Hinojosa M; Martinez-Barrio J; Niet. *Comparison between full and tapered dosages of biologic therapies in psoriatic arthritis patients: clinical and ultrasound assessment.* CLINICAL RHEUMATOLOGY. 2015; 34(5) 935-942. IF: 2.042. Quartile: 3. (Article).
- Horcajada-Reales C; Rodriguez-Soria VJ; Suarez-Fernandez R. *Allergic contact dermatitis caused by timolol with cross-sensitivity to levobunolol.*

- CONTACT DERMATITIS. 2015; 73(6) 368-369. IF: 5.692. Quartile: 1. (Editorial Material).
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 - Garcillan B; Marin AVM; Jimenez-Reinoso A; Briones AC; Munoz-Ruiz M; Garcia-Leon MJ; Gil J; Allende LM; Martinez-Naves E; Toribio ML; Regueiro JR. *gamma delta T lymphocytes in the diagnosis of human T cell receptor immunodeficiencies.* FRONTIERS IN IMMUNOLOGY. 2015; 6. IF: 5.695. Quartile: 1. (Editorial Material).
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 - Saez-Martin LC; Garcia-Martinez L; Roman-Curto C; Sanchez-Hernandez MV; Suarez-Fernandez RM. *Negative pressure and nanocrystalline silver dressings for nonhealing ulcer: A randomized pilot study.* WOUND REPAIR AND REGENERATION. 2015; 23(6) 948-952. IF: 2.628. Quartile: 1. (Article).
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- Carbone J; Palomo J; Fernandez-Yanez J; Sarmiento E. *Subcutaneous immunoglobulin replacement therapy in a heart transplant recipient with severe recurrent infections.* Heart, lung and vessels. 2015; 7(3) 256-9. (Article).

Letters (not included in the impact factor):

- Arriaran L; Gil J; Fernandez-Cruz E; Carbone J. *Audit of the use of intravenous immunoglobulin for antibody deficiencies in a Clinical Immunology Unit.* ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2015; 43(2) 220-222. IF: 1.689. Quartile: 4. (Letter).
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- Pulido-Perez A; Gomez-Recuero L; Lozano-Masdemont B; Suarez-Fernandez R. *Rickettsia sibirica mongolimoniae infection in two immunocompetent adults.* ENFERMEDADES INFECTIOSAS Y MICROBIOLOGIA CLINICA. 2015; 33(9) 635-636. IF: 1.53. Quartile: 3. (Letter).

- Sarmiento E; Carbone J. *Challenges associated with immunological scores for the prediction of the risk of infection after transplant.* TRANSPLANT INFECTIOUS DISEASE. 2015; 17(1) 156-157. IF: 1.459. Quartile: 3. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 11 | 34.6 |
| Joint publications | 4 | 13.5 |
| First-decile publications | 4 | 22.6 |
| First-quartile publications | 8 | 37.0 |
| Second-quartile publications | 1 | 2.7 |
| Third-quartile publications | 5 | 7.0 |
| Fourth-quartile publications | 1 | 1.4 |
| Nonindexed publications/No IF | 5 | - |
| Total publications (including publications without IF) | 20 | 48.1 |

Molecular biology of HIV

Group director: M^a ÁNGELES MUÑOZ FERNÁNDEZ

Type: Consolidated

Research programs and lines

P1: HIV infection

- ▶ L1: Immunology and virology of HIV.
- ▶ L2: Cellular and molecular biology of HIV.

P2: Neonatology and pediatrics

P3: Nanomedicine: Cell and gene therapy

P4: Biobank

- ▶ L1: Coordination of the biobank.
- ▶ L2: Technical aspects of the biobank.
- ▶ L3: Biobank support.

P5: Management

- ▶ L1: Laboratory management.
- ▶ L2: Database management.

Group members

- **Susana Álvarez Losada:** Postdoctoral.
- **Rafael Ceña Díez:** Predoctoral.
- **Irene Consuegra Fernández:** RETICS.
- **Jorge Luis Gallego de la Fuente:** Support technician.
- **Dolores García Alonso:** Support technician.
- **Isabel María García Merino:** RETICS.
- **Coral Gómez Rico:** Support technician.
- **Manuel Alejandro González-Serna Martín:** Sara Borrell.
- **Carlos Guerrero Beltrán:** Predoctoral.
- **José Luis Jiménez Fuentes:** Stabilized.
- **Santiago Jiménez de Ory:** RETICS.
- **M^a Ángeles Muñoz Fernández:** Group director.
- **Paula Palau Concejo:** RETICS.
- **Miguel Reloso Cereceda:** Miguel Servet.
- **Raquel Rodríguez Llorente:** RETICS.
- **Laura Salinas Muñoz:** Intramural IISGM.
- **Begoña Santiago García:** Rio Hortega.
- **Daniel Sepúlveda Crespo:** Predoctoral.
- **M^a Jesús Serramía Lobera:** Support technician.

Research projects - Competitive calls

- Principal investigator: Marjorie Pion
Title: Descapsidación de viriones VIH-1 y tráfico hacia P-bodies como mecanismo de restricción de las primeras etapas del ciclo viral en linfocitos.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date 2015
- Principal investigator: Mª Ángeles Muñoz Fernández
Title: Desarrollo y mecanismo de acción de dendrímeros como microbicidas para frenar la infección por el VIH por transmisión sexual (vaginal y anal): prueba de concepto.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: Mª Ángeles Muñoz Fernández
Title: Proyecto INDISNET. Programa I+D Comunidad de Madrid. "Redes moleculares y celulares en enfermedades inflamatorias".
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015
- Principal investigator: José Luis Jiménez Fuentes
Title: Proyecto NANODENDMED. Programa I+D Comunidad de Madrid. "Nanosistemas dendríticos como agentes y vectores terapéuticos en distintas aplicaciones biomédicas".
Funding body: Comunidad de Madrid
Start date: 2012
End date 2015
- Principal investigator: Miguel Reloso Cereceda
Title: Mecanismos de la regulación hormonal en la diferenciación y reprogramación de los neutrófilos N1 y N-MDSC.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date 2016

- Principal investigator: Miguel Reloso Cereceda
Title: Búsqueda de marcadores diferenciadores de neutrófilos intratumorales inflamatorios y antiinflamatorios para su uso en el pronóstico del cáncer de mama y su reprogramación.
Funding body: F. Mutua Madrileña
Start date: 2014
End date 2017
- Principal investigator: Mª Ángeles Muñoz Fernández
Title: European Project, 7th Framework Program. "EU-Belarus-Russia Network in Nanomaterials-Driven Anti-Cancer Gene Therapy". (NANOGENE).
Funding body: European Commission
Start date: 2014
End date: 2016
- Principal investigator: José Luis Jiménez Fuentes
Title: Proyecto FIS 2014. "Prevención de la transmisión del IVH mediante el uso de la nanotecnología dirigida frente a proteínas virales, receptores celulares y DC-SIGN". Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Theses

| Doctoral student | Title | Supervisor(s) | University |
|--------------------------------|---|--|--------------------------------|
| Rosa María Rodríguez Fernández | Bronquiolitis por virus respiratorio sincitial: estudio prospectivo de la evolución temporal de los marcadores inmunológicos de infección y su relación con las sibilancias recurrentes | Teresa Hernández Sanpelayo; M. Ángeles Muñoz Fernández | Universidad Autónoma de Madrid |

Clinical practice guidelines

| Authors | Title | Publication |
|--|--|--|
| José T Ramos, Rosa Polo, Pablo Rojo, José Antonio Couceiro, María A. Muñoz-Fernández; Carmen Muñoz-Almagro, África Holguín, Maribel González Tomé, Sara Guillén, Lola Martínez Nuñez | Documento de consenso del CEVIHP/SEIP/AEP/SPNS respecto al tratamiento antirretroviral en niños y adolescentes infectados por el VIH. Panel de expertos del Colaborativo | Sociedad Española de Infectología Pediátrica (SEIP) de la Asociación Española de Pediatría (AEP) y Secretaría del Plan nacional del Sida |

Patents and intellectual property registrations

- Title: Dendrímeros carboxilos catiónicos obtenidos mediante «click chemistry», su preparación y sus usos
Reference: P201130804
Owner: FIBHGM-UAH, Instituto Científico y Tecnológico de Navarra, S.A.
Inventor(s): Francisco Javier De La Mata, Rafael Gómez Ramírez, Eduardo Arnaiz Garrido, Sandra García Gallego, José Luis Copa Patiño, Juan Soliveri De Carranza, José Manuel Hernández Ros, Mª Ángeles Muñoz-Fernández, Verónica Briz Sebastián, Mª Jesús Serramía Lobera, Conchita Tros de llarduya.
- Title: Dendrímeros carbosilanos con un núcleo polifenólico y su uso como antivirales
Reference: P201030450
Owner: UAH - HGUGM
Inventor(s): Francisco Javier De La Mata, Rafael Gómez Ramírez, Javier Sánchez-Nieves Fernández, Paula Ortega López, Mª Ángeles Muñoz-Fernández, Louis Chonco Jiménez, Mª Jesús Serramía Lobera.
- Title: Dendrímeros carbosilanos y su uso como antivirales
Reference: P201030233 (Family with 8 patents).
Owner: UAH - HGUGM
Inventor(s): Francisco Javier De La Mata, Rafael Gómez Ramírez, Mª Ángeles Muñoz-Fernández, Javier Sánchez-Nieves Fernández, Beatriz Rasines Moreno, Louis Chonco Jiménez, Eduardo Arnaiz Garrido, Mª Jesús Serramía Lobera.

- Title: Compuestos dendríticos carbosilanos homo y hetero-funcionalizados
Reference: P201231187 (Family with 2 patents).

Owner: UAH - HGUGM

Inventor(s): Francisco Javier de la Mata, Rafael Gómez Ramírez, Mª Ángeles Muñoz-Fernández, Javier Fernández Sánchez-Nieves, José Luis Jiménez Fuentes, Silvia Fernández Soriano, Marta Galán Herranz, Raquel Lorente Rodríguez, Elena Fuentes Paniagua, Javier Sánchez Rodríguez, Cornelio Peña González, Mª Jesús Serramía Lobera, Rosa Reguera.

- Title: Nanopartículas metálicas estabilizadas con dendrones carbosilano y sus usos
Reference: P201500669

Owner: Universidad de Alcalá de Henares - FIBHGM

Inventor(s): Francisco Javier de la Mata, Rafael González, Javier Sánchez-Nieves, Cornelio Peña, José Luis Copa, Juan Soliveri, Jorge Pérez, Mª Ángeles Muñoz, José Luis Jiménez, Pilar García

Technology-based companies

- Company name: **AMBIOX BIOTECH, S.L.**

Description: Ambiox Biotech is characterized by its entrepreneurial spirit, capacity for innovation, and social commitment. Its mission is to apply innovative developments in nanotechnology to the field of biomedicine, thus bringing added value to society that can be appreciated at international level. The creativity and innovation of Ambiox Biotech are developed for application in human health care, thus forging a link between science and the market. The company was created as a spin-off at Universidad de Alcalá de Henares. Its team includes Mª Ángeles Muñoz, Director of the HIV Molecular Biology Group of the IISGM.

- **SIMCOSMETIC BIOTECH, S.L.**

SimCosmetic Biotech develops new dermocosmetics using natural ingredients. Its biotechnology platforms are designed to combine natural ingredients in order to generate new protected high-quality dermocosmetics with synergistic activity.

The company was the fruit of a joint venture between Hospital Gregorio Marañón, Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC),

and the University of Freiburg (Germany), as well as with leading companies in the field of natural ingredients and development of cosmetics. SimCosmetic's key advantage in developing new dermocosmetic and skin care products is its ability to cooperate with various public and private organizations.

- **NATURE 4D**

Nature 4D designs, develops, and sets up advanced imaging devices tailored to the needs of the client. These devices have multiple applications in the field of biomedicine and basic research.

Nature 4D was created as a spin-off at Universidad Carlos III de Madrid based on technology developed within the framework of the IISGM. Its activity focuses on advanced optical imaging techniques, specifically advanced microscopy and preclinical optical imaging techniques. Thanks to a software application developed and registered by the sponsor and the company's highly specialized experience, Nature 4D offers tailored solutions involving optical imaging devices with user-friendly software for the acquisition and representation of data in 2D and 3D.

Publications

Total Impact Factor: 194.6

Publications in journals with impact factor indexed in Journal Citation Reports:

- Palladino C; Gomez MLN; Soler-Palacin P; Gonzalez-Tome MI; De Ory SJ; Espiau M; Hoyos SP; Leon-Leal JA; Mendez M; Moreno-Perez D; Guasch CF; Sierra AM; Guruceta IP; Guillen SM; Briz V. *Off-label use of maraviroc in HIV-1-infected paediatric patients in clinical practice.* AIDS. 2015; 29(16) 2155-2159. IF: 4.407. Quartile: 1. (Article).
- Santiago B; Guerra L; Garcia-Morin M; Gonzalez E; Gonzalvez A; Izquierdo G; Martos A; Santos M; Navarro M; Hernandez-Sampelayo MT; Saavedra-. *Clostridium difficile isolation in children hospitalized with diarrhea.* ANALES DE PEDIATRIA. 2015; 82(6) 417-425. IF: 0.773. Quartile: 4. (Article).
- Sanchez-Rodriguez J; Vacas-Cordoba E; Gomez R; De La Mata FJ; Munoz-Fernandez MA. *Nanotech-derived topical microbicides for HIV prevention: The*

road to clinical development. ANTIVIRAL RESEARCH. 2015; 113. 33-48. IF: 4.909. Quartile: 1. (Review).

- Martinez-Bonet M; Clemente MI; Alvarez S; Diaz L; Garcia-Alonso D; Munoz E; Moreno S; Munoz-Fernandez MA. *Antiretroviral drugs do not interfere with bryostatin-mediated HIV-1 latency reversal.* ANTIVIRAL RESEARCH. 2015; 123. 163-171. IF: 4.909. Quartile: 1. (Article).
- Garcia-Merino IM; Consuegra I; Jimenez JL; Munoz-Fernandez MA. *Specific Legislation on Biobanks in Spain.* BIOPRESERVATION AND BIOBANKING. 2015; 13(3) 207-211. IF: 1.804. Quartile: 2. (Article).
- Blazquez D; Ramos-Amador JT; Sainz T; Mellado MJ; Garcia-Ascaso M; De Jose MI; Rojo P; Navarro ML; Munoz-Fernandez MA; Saavedra J; Roa MA; Jimenez S; Beceiro J; Prieto L; Hortelano MG; Gonzalez-Tome MI. *Lipid and glucose alterations in perinatally-acquired HIV-infected adolescents and young adults.* BMC INFECTIOUS DISEASES. 2015; 15. IF: 2.69. Quartile: 2. (Article).
- Martinez-Bonet M; Puertas MC; Fortuny C; Ouchi D; Mellado MJ; Rojo P; Noguera-Julian A; Munoz-Fernandez MA; Martinez-Picado J. *Establishment and Replenishment of the Viral Reservoir in Perinatally HIV-1-infected Children Initiating Very Early Antiretroviral Therapy.* CLINICAL INFECTIOUS DISEASES. 2015; 61(7) 1169-1178. IF: 8.736. Quartile: 1. (Article).
- Machmach K; Abad-Molina C; Romero-Sanchez MC; Dominguez-Molina B; Moyano M; Rodriguez MM; Benhnia MRE; Jimenez-Mejias ME; Vidal F; Munoz-Fernandez MA; Genebat M; Viciana P; Gonzalez-Escribano MF; Leal M; Ruiz-Mateos E. *IFNL4 ss469415590 polymorphism is associated with unfavourable clinical and immunological status in HIV-infected individuals.* CLINICAL MICROBIOLOGY AND INFECTION. 2015; 21(3). IF: 4.575. Quartile: 1. (Article).
- Garcia-Gallego S; Diaz L; Jimenez JL; Gomez R; de la Mata FJ; Munoz-Fernandez MA. *HIV-1 antiviral behavior of anionic PPI metallo-dendrimers with EDA core.* EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY. 2015; 98. 139-148. IF: 3.902. Quartile: 1. (Article).
- Fuentes-Paniagua E; Serramia MJ; Sanchez-Nieves J; Alvarez S; Munoz-Fernandez MA; Gomez R; de la Mata FJ. *Fluorescein labelled cationic carbosilane dendritic systems for biological studies.* EUROPEAN POLYMER JOURNAL. 2015; 71. 61-72. IF: 3.485. Quartile: 1. (Article).

- Abad-Fernandez M; Gutierrez C; Madrid N; Hernandez-Novoa B; Diaz L; Munoz-Fernandez MA; Moreno S; Vallejo A. *Expression of gut-homing beta 7 receptor on T cells: surrogate marker for microbial translocation in suppressed HIV-1-infected patients?* HIV MEDICINE. 2015; 16(1) 15-23. IF: 3.341. Quartile: 2. (Article).
- Fernandez-Rodriguez A; Berenguer J; Jimenez-Sousa MA; Garcia-Alvarez M; Aldamiz-Echevarria T; Pineda-Tenor D; Diez C; de la Barrera J; Bellon JM; Briz V; Resino S. *Toll-like receptor 8 (TLR8) polymorphisms are associated with non-progression of chronic hepatitis C in HIV/HCV coinfected patients.* INFECTION GENETICS AND EVOLUTION. 2015; 36. 339-344. IF: 2.591. Quartile: 2. (Article).
- Moreno S; Ortega P; de la Mata FJ; Ottaviani MF; Cangiotti M; Fattori A; Munoz-Fernandez MA; Gomez R. *Bifunctional Chelating Agents Based on Ionic Carbosilane Dendrons with DO3A at the Focal Point and Their Complexation Behavior with Copper(II).* INORGANIC CHEMISTRY. 2015; 54(18) 8943-8956. IF: 4.82. Quartile: 1. (Article).
- Dzmitruk V; Szulc A; Shcharbin D; Janaszewska A; Shcharbina N; Lazniewska J; Novopashina D; Buyanova M; Ionov M; Klajnert-Maculewicz B; Gomez-Ramirez R; Mignani S; Majoral JP; Munoz-Fernandez MA; Bryszewska M. *Anti-cancer siRNA cocktails as a novel tool to treat cancer cells. Part (B). Efficiency of pharmacological action.* INTERNATIONAL JOURNAL OF PHARMACEUTICS. 2015; 485(1-2) 288-294. IF: 3.994. Quartile: 1. (Article).
- Pineda-Tenor D; Berenguer J; Garcia-Alvarez M; Guzman-Fulgencio M; Carrero A; Aldamiz-Echevarria T; Tejerina F; Diez C; Jimenez-Sousa MA; Fernandez-Rodriguez A; Mun. *Single Nucleotide Polymorphisms of CXCL9-11 Chemokines Are Associated With Liver Fibrosis in HIV/HCV-Coinfected Patients.* JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2015; 68(4) 386-395. IF: 3.806. Quartile: 1. (Article).
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- Sanchez-Rodriguez J; Diaz L; Galan M; Maly M; Gomez R; de la Mata FJ; Jimenez JL; Munoz-Fernandez MA. *Anti-Human Immunodeficiency Virus Activity of Thiol-Ene Carbosilane Dendrimers and Their Potential Development as a Topical Microbicide.* JOURNAL OF BIOMEDICAL NANOTECHNOLOGY. 2015; 11(10) 1783-1798. IF: 3.929. Quartile: 1. (Article).
- Serramia MJ; Alvarez S; Fuentes-Paniagua E; Clemente MI; Sanchez-Nieves J; Gomez R; de la Mata J; Munoz-Fernandez MA. *In vivo delivery of siRNA to the brain by carbosilane dendrimer.* JOURNAL OF CONTROLLED RELEASE. 2015; 200. 60-70. IF: 7.441. Quartile: 1. (Article).
- Ferrando-Martinez S; Ruiz-Mateos E; Dudakov JA; Velardi E; Grillari J; Kreil DP; Munoz-Fernandez MA; van den Brink MRM; Leal M. *WNT Signaling Suppression in the Senescent Human Thymus.* JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES. 2015; 70(3) 273-281. IF: 5.476. Quartile: 1. (Article).
- Ferrando-Martinez S; Ruiz-Mateos E; Casazza JP; de Pablo-Bernal RS; Dominguez-Molina B; Munoz-Fernandez MA; Delgado J; de la Rosa R; Solana R; Koup RA; Leal M. *IFN gamma-TNF alpha(-)IL2(-)MIP1 alpha(-)CD107a(+)PRF1(+) CD8 pp65-Specific T-Cell Response Is Independently Associated With Time to Death in Elderly Humans.* JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES. 2015; 70(10) 1210-1218. IF: 5.476. Quartile: 1. (Article).
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- Sepulveda-Crespo D; Sanchez-Rodriguez J; Serramia MJ; Gomez R; De La Mata FJ; Jimenez JL; Munoz-Fernandez MA. *Triple combination of carbosilane dendrimers, tenofovir and maraviroc as potential microbicide to prevent HIV-1 sexual transmission.* NANOMEDICINE. 2015; 10(6) 899-914. IF: 4.889. Quartile: 1. (Article).
- Sepulveda-Crespo D; Serramia MJ; Tager AM; Vrbanac V; Gomez R; De la Mata FJ; Jimenez JL; Munoz-Fernandez MA. *Prevention vaginally of HIV-1 transmission in humanized BLT mice and mode of antiviral action of polyanionic carbosilane dendrimer G2-S16.* Nanomedicine-Nanotechnology Biology and Medicine. 2015; 11(6) 1299-1308. IF: 5.671. Quartile: 1. (Article).
- Sepulveda-Crespo D; Gomez R; De La Mata FJ; Jimenez JL; Munoz-Fernandez MA. *Polyanionic carbosilane dendrimer-conjugated antiviral drugs as efficient microbicides: Recent trends and developments in HIV treatment/therapy.* Nanomedicine-Nanotechnology Biology and Medicine. 2015; 11(6) 1481-1498. IF: 5.671. Quartile: 1. (Review).
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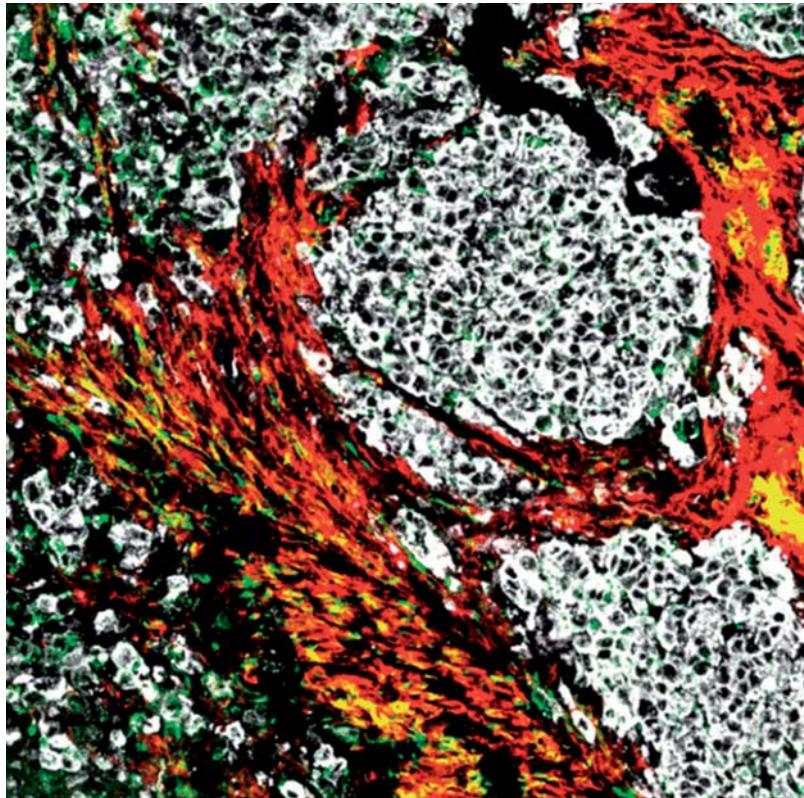
| | No. | IF |
|---|-----|-------|
| Own publications | 21 | 107.4 |
| Joint publications | 16 | 87.2 |
| First-decile publications | 12 | 98.9 |
| First-quartile publications | 30 | 176.8 |
| Second-quartile publications | 6 | 17.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 1 | 0.8 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 38 | 194.6 |

Systemic autoimmune diseases

Group director: LUIS CARREÑO PÉREZ (Until 05/11/2015); INDALECIO MONTEAGUDO (Since 05/11/2015)
Type: Consolidated

Research lines

- ▶ L1: Immune-mediated inflammatory diseases.
- ▶ L2: Rheumatoid arthritis.



Group members

- **Carlos Manuel González Fernández:** Senior researcher.
- **Diana Carolina Hernández Flórez:** Predoctoral.
- **Iustina Janta:** Predoctoral.
- **Francisco Javier López Longo:** Senior researcher.
- **Julia Martínez Barrio:** Predoctoral.
- **Indalecio Monteagudo Sáez:** Group director.
- **Esperanza Naredo Sánchez:** Senior researcher.
- **Juan Carlos Nieto González:** Predoctoral.
- **Juan Gabriel Ovalles Bonilla:** Predoctoral.
- **Larissa Elena Valor Méndez:** Postdoctoral.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|-------------------------|---|--|------------|
| Carolina Marín Huertas | Diagnóstico precoz de la enfermedad cardiovascular en el lupus eritematoso sistémico | Carreño Pérez, Luis; Lopez Longo, Francisco Javier; Collado Yurrita, Luis Rodolfo; | UCM |
| Lina Martínez Estupiñan | Influencia del bloqueo del factor de necrosis tumoral alfa sobre los niveles del factor reumatoide y anticuerpos anti-peptido cíclico citrulinados en | Luis Carreño Peres, Luis Collado Yurrita | UCM |

| Authors | Title | Publication |
|---|--|---|
| Grupo de trabajo de la Guía de Práctica Clínica sobre Lupus Eritematoso Sistémico. Guía de Práctica Clínica sobre Lupus Eritematoso Sistémico. Ministerio de Sanidad, Servicio de Evaluación del Servicio Canario de la Salud; 2015. Guías de Práctica Clínica en el SNS. Servicios Sociales e Igualdad | Guía de Práctica Clínica sobre Lupus Eritematoso Sistémico | Guías de práctica clínica en el SNS Ministerio de Sanidad, Servicios Sociales e Igualdad |

Clinical practice guidelines

| Authors | Title | Publication |
|---|--|---|
| Gutierrez M; Schmidt WA; Thiele RG; Keen HI; Kaeley GS; Naredo E; Iagnocco A; Bruyn GA; Balint PV; Filippucci E; Mandl P; Kane D; Pineda C; Delle Sedie A; Hammer HB; Christensen R; D'Agostino MA; Terslev L | International Consensus for ultrasound lesions in gout: results of Delphi process and web-reliability exercise | Rheumatology (Oxford). 2015 Oct;54(10):1797-805. doi: 10.1093/rheumatology/kev112. Epub 2015 May 13. |
| Mir Viladrich I, Daudén Tello E, Solano-López G, López Longo FJ, Taxonera Samso C, Sánchez Martínez P, Martínez Lacasa X, García Gasalla M, Dorca Sargatal J, Arias-Guillén M, García García JM. | Consensus Document on Prevention and Treatment of Tuberculosis in Patients for Biological Treatment | Arch Bronconeumol 2015; pii: S0300-2896(15)00204-5. doi: 10.1016/j.archres.2015.04.016. [Epub ahead of print] English, Spanish. |

Patents

- Title: Manual para la creación de una unidad funcional de terapias biológicas en pacientes con artritis crónicas
Reference: Registry no.: 16/2013/5179
Owner: FIBHGM
Inventor(s): Luis Carreño, Inmaculada de la Torre, Larisa Valor, Tamara del Río, Vicente Escudero, Diana Hernández, Carmen Rodríguez

Publications

Total Impact Factor: 136.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Julia A; Pinto JA; Gratacos J; Queiro R; Ferrandiz C; Fonseca E; Montilla C; Torre-Alonso JC; Puig L; Venegas JJP; Nebro AF; Fernandez E; Munoz-Fernandez S; Dauden E; Gonzalez C; Roig D; Carazo JLS; Zarco P; Erra A; Estebaranz JLL; Rodriguez J; Ramirez DM. *A deletion at ADAMTS9-MAGI1 locus is associated with psoriatic arthritis risk.* ANNALS OF THE RHEUMATIC DISEASES. 2015; 74(10) 1875-1881. IF: 12.384. Quartile: 1. (Article).

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 - Manrique-Arija S; Ordonez-Canizares MC; Fernandez-Nebro A; Pego-Reigosa JM; Lopez-Longo FJ; Galindo M; Calvo-Alen J; Rua-Figueroa I. *Analysis of cardiovascular events (CVE) in a large nation-wide cohort of patients with systemic lupus erythematosus: RELESSER Registry.* CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 2015; 33(3) S38-S38. IF: 2.495. Quartile: 2. (Proceedings paper).
 - Pego-Reigosa J; Iglesias AL; Lopez-Longo F; Galindo M; Calvo J; Una J; Balboa V; Olive A; Mourino C; Oton T; Ibanez J; Horcada L; Sanchez A; Blanco R; Montilla C; Melero R; Diez E; Fernandez M; Ruiz E; Hernandez J; Gantes M; Hernandez B; Pecondon A; Lozano N; Bonilla G; Torrente V; Rua-Figueroa I. *Damage and mortality in Systemic Lupus Erythematosus: Cluster analysis of patients from SLE Registry from the Spanish Society for Rheumatology (RELESSER).* CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 2015; 33(3) S39-S39. IF: 2.495. Quartile: 2. (Proceedings paper).
 - Rua-Figueroa I; Lopez-Longo FJ; Galindo M; Calvo-Alen J; Del Campo V; Fernandez-Nebro A; Olive-Marques A; Hernandez-Cruz B; Erazquin C; Pego-Reigosa JM. *Cumulative incidence, associated factors and clinical impact of severe infections in a cohort of over 3,500 patients with Systemic Lupus Erythematosus.* CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 2015; 33(3) S43-S43. IF: 2.495. Quartile: 2. (Proceedings paper).
 - Torrente-Segarra V; Salman-Monte TC; Rua-Figueroa I; Calvo-Alen J; Lopez-Longo FJ; Galindo M; Pego-Reigosa JM. *Clinical and serological differences between juvenile-onset and adult-onset systemic lupus erythematosus patients from a national registry of patients (RELESSER).* CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 2015; 33(3) S7-S8. IF: 2.495. Quartile: 2. (Proceedings paper).
- Letters (not included in the impact factor):**
- Torp-Pedersen S; Christensen R; Ellegaard K; Torp-Pedersen A; Szkudlarek M; D'Agostino MA; Iagnocco A; Naredo E; Balint P; Wakefield RJ; Terslev L; Jensen JA. *Effect of the probe frequency on sensitivity of color Doppler ultrasound to color blood flow: comment on the article by Torp-Pedersen et al Reply.* ARTHRITIS & RHEUMATOLOGY. 2015; 67(6) 1681-1683. IF: 6.009. Quartile: 1. (Letter).
 - Martinez-Estupinan L; Lopez-Longo FJ; Monteagudo I; Perez LC. *Pseudotumoral neurobehcet in a patient treated with anti-tumor necrosis factor alpha.* MEDICINA CLINICA. 2015; 144(5) 235-236. IF: 1.267. Quartile: 2. (Letter).
- | | No. | IF |
|---|-----|-------|
| Own publications | 12 | 30.1 |
| Joint publications | 26 | 106.3 |
| First-decile publications | 4 | 41.0 |
| First-quartile publications | 11 | 72.5 |
| Second-quartile publications | 19 | 51.1 |
| Third-quartile publications | 7 | 11.6 |
| Fourth-quartile publications | 1 | 1.2 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 40 | 136.4 |

Immuno-oncology

Group director: PALOMA SÁNCHEZ-MATEOS RUBIO

Type: Consolidated

Research programs

- ▶ P1: Cell migration and adhesion (organization and regulation of the cytoskeleton, cell polarity in extravasation of tumor cells, invasion of 3D matrices).
- ▶ P2: Macrophages in inflammatory diseases.
- ▶ P3: Chemokines and their receptors.

Group members

- Óscar Candelas Rivera: Master's student.
- Lizbeth Estrada Capetillo: Visiting postdoctoral.
- Raquel García Campos: ISCIII project technician.
- Alejandra Gutiérrez González: Predoctoral.
- Cristina Municio Rueda: Predoctoral.
- Amaya Rocío Puig Kröger: Stabilized.
- Sandra Sánchez Gregorio: Undergraduate biology student.
- Paloma Sánchez-Mateos Rubio: Group director.
- Blanca Soler Palacios: Predoctoral.
- Irene Soleto Fernández: Predoctoral RETIC.
- Julia Villarejo Gómez: State Registered Nurse.



Research projects – Competitive calls

- Principal investigator: Amaya Rocío Puig Kröger
Title: Artritis reumatoide: mecanismos fisiopatológicos e identificación de posibles dianas terapéuticas.
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015
- Principal investigator: Paloma Sánchez-Mateos Rubio
Title: Microambiente inflamatorio del melanoma humano: interacciones recíprocas tumor-estroma-tumor y significado clínico del estado de polarización de los macrófagos asociados a tumor.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016



- Principal investigator: Amaya Rocío Puig Kröger
Title: Biomarcadores de respuesta terapéutica y de hepatotoxicidad a anti-fofatos en enfermedades inflamatorias.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------------|--|--|------------|
| Minia Campos Domínguez | Microscopía Confocal En Las Enfermedades Ampollosas Subepidérmicas Autoinmunes | Paloma Sánchez-Mateos Rubio; Ricardo María Suárez Fernández; Jesús Millán Núñez-Cortés | UCM |
| Blanca Soler Palacios | Implicaciones patológicas y terapéuticas de la contribución del metabolismo del folato a la polarización de macrófagos | Puig-Kroger, Amaya | UCM |

Publications

Total Impact Factor: 16.2

Publications in journals with impact factor indexed in Journal Citation Reports:

- Rubio-Navarro A; Villalobos JMA; Lindholt JS; Buendia I; Egido J; Blanco-Colio LM; Samaniego R; Meilhac O; Michel JB; Martin-Ventura JL; Moreno JA. *Hemoglobin induces monocyte recruitment and CD163-macrophage polarization in abdominal aortic aneurysm.* INTERNATIONAL JOURNAL OF CARDIOLOGY. 2015; 201: 66-78. IF: 4.638. Quartile: 1. (Article).

- Gonzalez-Dominguez E; Samaniego R; Flores-Sevilla JL; Campos-Campos SF; Gomez-Campos G; Salas A; Campos-Pena V; Corbi AL; Sanchez-Mateos P; Sanchez-Torres C. *CD163L1 and CLEC5A discriminate subsets of human resident and inflammatory macrophages in vivo*. JOURNAL OF LEUKOCYTE BIOLOGY. 2015; 98(4) 453-466. IF: 4.165. Quartile: 1. (Article).
- Palacios BS; Estrada-Capetillo L; Izquierdo E; Criado G; Nieto C; Municio C; Gonzalez-Alvaro I; Sanchez-Mateos P; Pablos JL; Corbi AL; Puig-Kroger A. *Macrophages from the synovium of active rheumatoid arthritis exhibit an activin A-dependent pro-inflammatory profile*. JOURNAL OF PATHOLOGY. 2015; 235(3) 515-526. IF: 7.381. Quartile: 1. (Article).

Letters (not included in the impact factor):

- Gimenez EC; Sanchez-Luna M. *Providing parents with individualised support in a neonatal intensive care unit reduced stress, anxiety and depression*. ACTA PAEDIATRICA. 2015; 104(11) E476-E476. IF: 1.647. Quartile: 2. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 1 | 7.4 |
| Joint publications | 2 | 8.8 |
| First-decile publications | 1 | 7.4 |
| First-quartile publications | 3 | 16.2 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 4 | 16.2 |

Pathogenesis of the immunoallergic response

Group director: **JOSÉ MANUEL ZUBELDIA ORTUÑO**

Type: In process of consolidation

Research programs and lines

P1: Mechanisms of the immunoallergic response and their regulation

- ▶ L1: Murine model of allergic bronchial asthma.
- ▶ L2: Murine model of anaphylaxis.
- ▶ L3: Regulation of the allergic response: CpG sequences.
- ▶ L4: Regulation of the allergic response: parasitosis

P2: Transgenesis and phenotyping

- ▶ L1: Phenotyping of lung and auditory functions in IGF-1 knockout mice.
- ▶ L2: Phenotyping of lung function and immunological alterations in DREAM knockout mice.

P3: Hyperoxia-induced disease

- ▶ L1: Pulmonary bronchydysplasia model in newborn rats.
- ▶ L2: Overexposure of immunological hyperoxia-induced alterations in transgenic mice.

P4: Characterization of noncommercial antigens

- ▶ L1: Foods.
- ▶ L2: Drugs.
- ▶ L3: Aeroallergens.

Group members

- **Alberto Álvarez Perea:** Senior researcher.
- **María Luisa Baeza Ochoa de Ocáriz:** Senior researcher.
- **Victoria Fuentes Aparicio:** Predoctoral.
- **Sonsoles Infante Herrero:** Predoctoral.
- **Alicia Prieto García:** Senior researcher.
- **Patricia Eugenia Rojas Pérez Ezquerro:** Predoctoral.
- **Pilar Tornero Molina:** Predoctoral.
- **José Manuel Zubeldia Ortuño:** Group director.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|----------------------------------|--|--|------------|
| Maria Vázquez de la Torre Gaspar | Nuevos adyuvantes en la inmunoterapia específica de las enfermedades alérgicas: estudio de aspectos inmunológicos, celulares y repercusión | Rafael Enríquez de Salamanca Lorente; José Manuel Zubeldia Ortúñoz | UCM |
| Alberto Álvarez-Perea | Anafilaxia en urgencias: incidencia, diagnóstico y manejo clínico | Mª Luisa Baeza Ochoa de Ocáriz; Jose Manuel Zubeldia Ortúñoz; Rafael Enríquez de Salamanca Lorente | UCM |

Clinical practice guidelines

| Authors | Title | Publication |
|---|---|--|
| Hernández Fernández de Rojas D, Ibáñez E, Longhurst H, Maurer M, Fabien V, Aberer W, Bouillet L, Zanichelli A, Caballero T; IOS Study Group | Treatment of HAE Attacks in the Icatibant Outcome Survey: An Analysis of Icatibant Self-Administration versus Administration by Health Care Professionals | Int Arch Allergy Immunol. 2015;167(1):21-8. doi: 10.1159/000430864. Epub 2015 Jun 25 |
| Longhurst HJ, Aberer W, Bouillet L, Caballero T, Fabien V, Zanichelli A, Maurer M; IOS Investigators | Analysis of characteristics associated with reinjection of icatibant: Results from the icatibant outcome survey | Allergy Asthma Proc. 2015 Sep-Oct; 36(5):399-406. doi: 10.2500/aap.2015.36.3892. Erratum in: Allergy Asthma Proc. 2015 Nov-Dec;36(6):511 |

Publications

Total Impact Factor: 2.1

*Publications in journals with impact factor indexed
in Journal Citation Reports:*

- Alvarez-Perea A; Tomas-Perez M; Martinez-Lezcano P; Marco G; Perez D; Zubeldia JM; Baeza ML. *Anaphylaxis in Adolescent/Adult Patients Treated in the Emergency Department: Differences Between Initial Impressions and the Definitive Diagnosis.* JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2015; 25(4) 288-294. IF: 2.131. Quartile: 3. (Article).

Letters (not included in the impact factor):

- Micozzi S; Pinto C; Seoane M; Carbone J; Tornero P. *Giant cell myocarditis in hypersensitivity reactions: is an early diagnose possible?* ANNALS OF ALLERGY ASTHMA & IMMUNOLOGY. 2015; 115(3) 247-248. IF: 3.475. Quartile: 2. (Letter).
- Prieto-Garcia A; Alvarez-Perea A; Matito A; Sanchez-Munoz L; Morgado JM; Escribano L; Alvarez-Twose I. *Systemic mastocytosis presenting as IgE-mediated food-induced anaphylaxis: A report of two cases.* JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY-IN PRACTICE. 2015; 3(3) 456-458. IF: 5.429. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|-----|
| Own publications | 1 | 2.1 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 3 | 2.1 |

Immune homeostasis and regulation in diseases associated with the immune system

Group directors: RAFAEL CORREA ROCHA

Type: Emerging

Research programs and lines

P1: Immunology of solid organ transplantation

- ▶ L1: Cellular immunotherapy in pediatric solid organ recipients.
- ▶ L2: Immune regulation and rejection in pediatric transplant recipients.

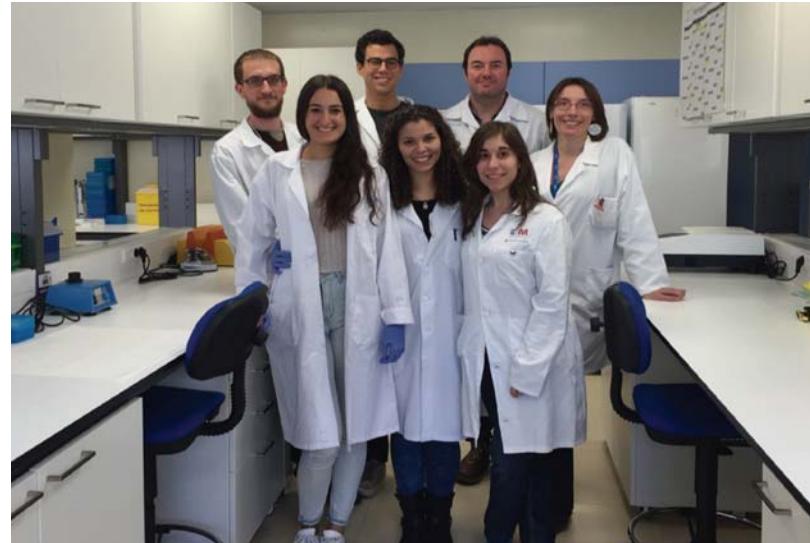
P2: Immune regulation in pediatric patients

- ▶ L1: Immune regulation in pediatric diseases associated with the immune system.
- ▶ L2: Immune regulation in maternal-fetal tolerance.

P3: Immune regulation in HIV infection

- ▶ L1: Immune regulation and homeostasis in HIV infection.

The Immunoregulation Laboratory is a recently created emerging group within the LiSGM. It forms part of the Diseases of the Immune System Area and is led by Rafael Correa Rocha. The group's study of Treg cells in various pediatric immune diseases is an unprecedented research line in our center and also a pioneering line at national level. This research line is proving very successful, as seen in the projects obtained by the Principal Investigator through competitive calls and the group's recent first-decile publications.



Group members

- **Esther Bernaldo de Quirós Plaza:** Predoctoral.
- **Minia Campos Domínguez:** Senior researcher.
- **Rafael Correa Rocha:** Principal investigator (Group director).
- **Jacobo López-Abente Muñoz:** Predoctoral.
- **Sara Martín Delgado:** Predoctoral.
- **Verónica Astrid Pérez Fernández:** Support technician.
- **Marjorie Pion:** Principal investigator.
- **Adrián Prieto Sánchez:** Support technician.
- **Elena Seoane Reula:** Senior investigator.

IMMUNE HOMEOSTASIS AND REGULATION IN DISEASES ASSOCIATED WITH THE IMMUNE SYSTEM (PREVIOUSLY IMMUNOLOGY OF HIV INFECTION IN PEDIATRIC PATIENTS)

Research projects – Competitive calls

- Principal investigator: Rafael Correa Rocha
Title: Efecto de la infección por VIH-1 en el fenotipo y actividad supresora de células Treg en pacientes adultos infectados. Correlación con parámetros virológicos y marcadores de activación.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Rafael Correa Rocha
Title: Ensayo de inmunoterapia celular para prevenir el rechazo a trasplante en niños mediante el aislamiento y re-infusión de células Treg autólogas.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017
- Principal investigator: Rafael Correa Rocha
Title: Mecanismos inmunológicos implicados en la alergia a proteínas de leche en lactantes. Marcadores predictivos de evolución espontánea a tolerancia.
Funding body: SEICAP
Start date: 2014
End date: 2015

Publications

Total Impact Factor: 11.0

Publications in journals with impact factor indexed in Journal Citation Reports:

- Horcajada-Reales C; Campos-Dominguez M; Conde-Montero E; Parra-Blanco V; Suarez-Fernandez R. *Comedo-like openings in dermoscopy: An essential diagnostic clue for lichen sclerosus, even in children.* JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 2015; 72(1) S4-S5. IF: 5.621. Quartile: 1. (Editorial Material).

- del Castillo BT; Mata-Fernandez C; Soria VJR; Blanco VP; Loughlin G; Campos-Dominguez M. *Self-Healing Extranodal Cutaneous Rosai-Dorfman in a Child.* PEDIATRIC DERMATOLOGY. 2015; 32(6) e249-e250. IF: 1.163. Quartile: 3. (Article).
- Munoz LGR; Campos-Dominguez M; Lozano-Masdemon B; Conde-Montero E; Parra-Blanco V; Suarez-Fernandez R. *Rapidly Growing Pigmented Lesion in a 13-Year-Old Girl.* PEDIATRIC DERMATOLOGY. 2015; 32(5) 727-728. IF: 1.163. Quartile: 3. (Editorial Material).
- Noriega V; Martinez-Laperche C; Buces E; Pion M; Sanchez-Hernandez N; Martin-Antonio B; Guillem V; Bosch-Vizcaya A; Bento L; Gonzalez-Rivera M; Balsalobre P. *The Genotype of the Donor for the (GT)(n) Polymorphism in the Promoter/Enhancer of FOXP3 Is Associated with the Development of Severe Acute GVHD but Does Not Affect the GVL Effect after Myeloablative HLA-Identical Allogeneic Stem Cell Transplantation.* PLOS ONE. 2015; 10(10). IF: 3.057. Quartile: 1. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 1 | 1.2 |
| Joint publications | 3 | 9.8 |
| First-decile publications | 1 | 5.6 |
| First-quartile publications | 2 | 8.7 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 2.3 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 4 | 11.0 |

Infections in pediatric patients

Group director: M^a LUISA NAVARRO GÓMEZ

Type: Consolidated

Research programs and lines

P1: Clinical and epidemiological research on HIV infection and its complications in pediatric patients

- ▶ L1: HIV.
- ▶ L2: Vaccines.
- ▶ L3: HIV/HCV coinfection.

P2: Infectious diseases in pediatric patients

- ▶ L1: Respiratory virus infection in immunodepressed patients.
- ▶ L2: Bronchiolitis-RSV.
- ▶ L3: Meningitis.
- ▶ L4: Pertussis.
- ▶ L5: Pediatric tuberculosis.
- ▶ L6: Invasive fungal infection.
- ▶ L7: Antibiotic resistance in pediatric patients (ARPEC).
- ▶ L8: Congenital CMV infection (REDCMV).
- ▶ L9: Infection by group A *Streptococcus*.
- ▶ L10: Fungal infection in the oncology-hematology patient.
- ▶ L11: Infection in patients with sickle-cell anemia.
- ▶ L12: Bone and joint infection.

Group members

- Natalia Barreiro Cerdeira: Predoctoral.
- Carolina Fernández Mcphee: Predoctoral.
- Felipe González Martínez: Predoctoral.
- María Isabel González Sánchez: Predoctoral.
- María Luisa Navarro Gómez: Group director.
- Elena Rincón López: Predoctoral.
- Rosa María Rodríguez Fernández: Postdoctoral.
- Jesús Saavedra Lozano: Postdoctoral.
- Mar Santos Sebastián: Predoctoral.
- M^a Carmen Suárez Arrabal: Predoctoral.



Research projects – Competitive calls

- Principal investigator: Navarro Gómez, María Luisa
Title: "Soporte al Desarrollo de la Cohorte Nacional de Pacientes Coinfectados Perinatalmente Por VIH-VHC"
Funding body: MINECO
Start date: 2015
End date: 2017

Theses

| Doctoral student | Título | Supervisor(s) | University |
|--------------------------------|---|--|--------------------------------|
| Rosa María Rodríguez Fernández | Bronquiolitis por virus respiratorio sincitial: estudio prospectivo de la evolución temporal de los marcadores inmunológicos de infección y su relación con las sibilancias recurrentes | Teresa Hernández Sanpelayo; M. Ángeles Muñoz Fernández | Universidad Autónoma de Madrid |



Clinical practice guidelines

| Authors | Title | Publication |
|--|--|---|
| Rosa Polo, Jordi Blanch, Jaime Locutura, Piedad Arazo Pablo Bachiller, Carmen Bayon, Vicente Estrada, Carmina Fumaz, María José Galindo, Maribel González Tomé, Jose Luis Fernández, Jose Antonio Iribarren, María Jose Mellado, Fernando Lozano Ana Mariño, Jose A Muñoz Moreno, Marisa Navarro Ricard, Navinés, Juan Francisco Pérez Prieto, Araceli Roussaud, Jesús Sánchez Hernández, Montse Tuset Agueda Rojo, Jesús Santos | Documento de Consenso sobre alteraciones Psiquiátricas y psicológicas en el adulto y en el niño con infección por el VIH (actualización 2015). Grupo de expertos de la Secretaría del Plan Nacional sobre el SIDA (SPNS), SEP, GESIDA y SEIP | http://www.msssi.gob.es/ciudadanos/enfLesiones/enfTransmisibles/sida/publicaciones/recomendaciones.htm |
| Baquero-Artigao F, Mellado Peña MJ, del Rosal Rabes T, Noguera Julián A, Goncé Mellgren A, de la Calle Fernández-Miranda M, Navarro Gómez ML | [Spanish Society for Pediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (i) Epidemiology and diagnosis. Congenital tuberculosis] | An Pediatr (Barc). 2015 Mar 5. pii: S1695-4033(15)00042-9. doi: 10.1016/j.anpedi.2015.01.004 |
| Baquero-Artigao F, Mellado Peña MJ, del Rosal Rabes T, Noguera Julián A, Goncé Mellgren A, de la Calle Fernández-Miranda M, Navarro Gómez ML | Spanish Society for Pediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (ii): Prophylaxis and treatment | An Pediatr (Barc). 2015 Mar 5. pii: S1695-4033(15)00053-3. doi: 10.1016/j.anpedi.2015.01.010. [Epub ahead of print] Spanish. PubMed PMID: 25754314. |

(Continued on next page)

| Authors | Title | Publication |
|--|---|--|
| Saavedra-Lozano J, Calvo C, Huguet Carol R, Rodrigo C, Núñez E, Obando I, Rojo P, Merino R, Pérez C, Downey FJ, Colino E, García JJ, Cilleruelo MJ, Torner F, García L | SEIP-SERPE-SEOP Consensus document on the treatment of uncomplicated acute osteomyelitis and septic arthritis | An Pediatr (Barc). 2015 Apr;82(4):273.e1-273.e10. doi: 10.1016/j.anpedi.2014.10.005. Epub 2014 Nov 28. |
| Saavedra-Lozano J, Calvo C, Huguet Carol R, Rodrigo C, Núñez E, Pérez C, Merino R, Rojo P, Obando I, Downey FJ, Colino E, García JJ, Cilleruelo MJ, Torner F, García L | SEIP-SERPE-SEOP Consensus Document on aetiopathogenesis and diagnosis of uncomplicated acute osteomyelitis and septic arthritis | An Pediatr (Barc). 2014 Oct 11. pii: S1695-4033(14)00417-2. doi: 10.1016/j.anpedi.2014.08.006. [Epub ahead of print] Spanish. PubMed PMID: 25308756. |
| Moreno-Perez D; Martín AA; García AT; Montaner AE; Mulet JF; García JJG; Moreno-Galdo A; de Lliria CRG; Lozano JS | Community acquired pneumonia: treatment of complicated cases and special situations. Consensus document of the Spanish Society of Pediatric Infectious Diseases (PFIC) and Spanish Society of Pediatric Pneumology (SENP) | Anales de Pediatría |
| Baquero-Artigao F; Peña MJM; Rabes TD; Julian AN; Mellgren AG; Fernandez-Miranda MD; Gomez MLN | Spanish Society for Pediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (I): Epidemiology and diagnosis. Congenital tuberculosis | Anales de Pediatría |

| Authors | Title | Publication |
|---|--|---|
| Marisa Navarro, María Isabel González Tomé, Rosa Polo, José Couceiro Gianzo, Claudia Fortuny i Guasch, Raúl González Montero, Mª José Mellado Peña, Pilar Miralles, Eloy Muñoz Gállico, Ton Noguera Julián, José Tomás Ramos Amador, Pablo Rojo Conejo, Pere Soler Palacín, Mª Carmen Viñuela Benítez, Berta Zamora Crespo, Cristina García Navarro, Gabriela Medin, M Jose Galindo Puerto, Luis Prieto, Sara Guillen | Guía de práctica clínica para el abordaje integral del adolescente con infección por el VIH (octubre 2015). Grupo de trabajo de la SEIP y de la SPNS | http://www.msssi.gob.es/ciudadanos/enfLesiones/enfTransmisibles/sida/publicaciones/recomendaciones.htm |
| González- Tomé, MI; Navarro M; Noguera-Julián A; Ramos Amador JT; Polo R; Holguín A | Recomendaciones para el cribado de la infección VIH del niño hijo de madre infectada con posibilidad de adopción | http://www.msssi.gob.es/ciudadanos/enfLesiones/enfTransmisibles/sida/publicaciones/recomendaciones.htm |

Publications**Total Impact Factor: 16.6**

Publications in journals with impact factor indexed in Journal Citation Reports:

- Palladino C; Gomez MLN; Soler-Palacin P; Gonzalez-Tome MI; De Ory SJ; Espiau M; Hoyos SP; Leon-Leal JA; Mendez M; Moreno-Perez D; Guasch CF; Sierra AM; Guruceta IP; Guillen SM; Briz V. *Off-label use of maraviroc in HIV-1-infected paediatric patients in clinical practice*. AIDS. 2015; 29(16): 2155-2159. IF: 4.407. Quartile: 1. (Article).

- Santiago B; Guerra L; Garcia-Morin M; Gonzalez E; Gonzalvez A; Izquierdo G; Martos A; Santos M; Navarro M; Hernandez-Sampelayo MT; Saavedra-Lozano J. *Clostridium difficile isolation in children hospitalized with diarrhea.* ANALES DE PEDIATRIA. 2015; 82(6) 417-425. IF: 0.773. Quartile: 4. (Article).
- Baquero-Artigao F; Pena MJM; Rabes TD; Julian AN; Mellgren AG; Fernandez-Miranda MD; Gomez MLN. *Spanish Society for Pediatric Infectious Diseases guidelines on tuberculosis in pregnant women and neonates (I): Epidemiology and diagnosis. Congenital tuberculosis.* ANALES DE PEDIATRIA. 2015; 83(4) 285-285. IF: 0.773. Quartile: 4. (Editorial Material).
- Moreno-Perez D; Martin AA; Garcia AT; Montaner AE; Mulet JF; Garcia JJG; Moreno-Galdo A; de Lliria CRG; Lozano JS. *Community acquired pneumonia: treatment of complicated cases and special situations. Consensus document of the Spanish Society of Pediatric Infectious Diseases (PFIC) and Spanish Society of Pediatric Pneumology (SENP).* ANALES DE PEDIATRIA. 2015; 83(3) 217-217. IF: 0.773. Quartile: 4. (Article).
- Blazquez D; Ramos-Amador JT; Sainz T; Mellado MJ; Garcia-Ascaso M; De Jose MI; Rojo P; Navarro ML; Munoz-Fernandez MA; Saavedra J; Roa MA; Jimenez S; Beeceiro J; Prieto L; Hortelano MG; Gonzalez-Tome MI. *Lipid and glucose alterations in perinatally-acquired HIV-infected adolescents and young adults.* BMC INFECTIOUS DISEASES. 2015; 15. IF: 2.69. Quartile: 2. (Article).
- Trento A; Abrego L; Rodriguez-Fernandez R; Gonzalez-Sanchez MI; Gonzalez-Martinez F; Delfraro A; Pascale JM; Arbiza J; Melero JA. *Conservation of G-Protein Epitopes in Respiratory Syncytial Virus (Group A) despite Broad Genetic Diversity: Is Antibody Selection Involved in Virus Evolution?.* JOURNAL OF VIROLOGY. 2015; 89(15) 7776-7785. IF: 4.606. Quartile: 1. (Article).
- Sainz T; Alvarez-Fuente M; Fernandez-Jimenez R; Gonzalez-Tome MI; de Jose MI; Ramos JT; Navarro ML; Martinez J; Garcia-Hortelano M; Medrano C; Munoz-Fernandez MA; Mellado MJ. *Cardiac Function in Vertically HIV-infected Children and Adolescents in the Era of Highly Active Antiretroviral Therapy.* PEDIATRIC INFECTIOUS DISEASE JOURNAL. 2015; 34(5) E125-E131. IF: 2.587. Quartile: 1. (Article).

| | No. | IF |
|---|-----|------|
| Own publications | 3 | 2.3 |
| Joint publications | 4 | 14.3 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 3 | 11.6 |
| Second-quartile publications | 1 | 2.7 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 3 | 2.3 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 7 | 16.6 |

Allergic diseases in pediatric patients

Group director: ELENA ALONSO LEBRERO

Type: Associated clinical

Research lines

- ▶ L1: Allergic response to foods.
- ▶ L2: Allergic response to drugs.

Group members

- Elena Alonso Lebrero: Postdoctoral.
- Alberto Álvarez Perea: Postdoctoral.
- Paula Cabrera Freitag: Postdoctoral.
- Victoria Fuentes Aparicio: Predoctoral.
- Sonsoles Infante Herrero: Predoctoral.
- Lydia Zapatero Remón: Postdoctoral.



Theses

| Doctoral student | Title | Supervisor(s) | University |
|-----------------------|---|--|------------|
| Alberto Alvarez-Perea | Anafilaxia en Urgencias: Incidencia, diagnóstico y manejo clínico | José Manuel Zubeldia, Mª Luisa Baeza, Rafael Enríquez de Salamanca | UCM |

Clinical practice guidelines

| Authors | Title | Publication |
|--|---|----------------------------------|
| Echeverria-Zudaire LA; Castillo LO; Alonso-Lebrero E; Alvarez-Garcia FJ; Cortes-Alvarez N; Garcia-Sanchez N; Martorell-Aragones A | Consensus document on the approach to children with allergic reactions after vaccination or allergy to vaccine components | Allergologia et Immunopathologia |
| A.M Plaza, MDP Ibañez, M Sánchez-Solís, M Bosque-García, MJ Cabero, JL Corzo, G García-Hernández, B de la Hoz, J Korta-Murua, C Sánchez-Salguero, J Torres-Borrego, M Tortajada-Girbés, J Valverde-Molina, L Zapatero, A Nieto | Consenso para el abordaje del asma grave pediátrica en la práctica clínica habitual | Anales de Pediatría |
| S Infante Herrero | Protocolo diagnóstico y tratamiento de la Anafilaxia | Medicine |

Publications

Total Impact Factor: 5.5

Publications in journals with impact factor indexed
in Journal Citation Reports:

- Martorell-Aragones A; Echeverria-Zudaire L; Alonso-Lebrero E; Bone-Calvo J; Martin-Munoz MF; Nevot-Falco S; Piquer-Gibert M; Valdesoro-Navarrete L. *Position document: IgE-mediated cow's milk allergy.* ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2015; 43(5) 507-526. IF: 1.689. Quartile: 4. (Review).
- Echeverria-Zudaire LA; Castillo LO; Alonso-Lebrero E; Alvarez-Garcia FJ; Cortes-Alvarez N; Garcia-Sanchez N; Martorell-Aragones A. *Consensus document on the approach to children with allergic reactions after vaccination or allergy to vaccine components.* ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2015; 43(3) 304-325. IF: 1.689. Quartile: 4. (Article).
- Zapatero A; San Segundo CG; Boladeras A; Caamano AG; Torrecilla JL; Maldonado X. *Androgen deprivation and radiotherapy in patients with prostate cancer and cardiovascular risk factors: clinical controversies.* CLINICAL & TRANSLATIONAL ONCOLOGY. 2015; 17(3) 223-229. IF: 2.075. Quartile: 3. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 1 | 2.1 |
| Joint publications | 2 | 3.4 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 2 | 3.4 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 3 | 5.5 |

AREA 6

Area coordinator:
Miguel Martín Jiménez

Translational oncology

The general research objective in the Area of Oncology in the IISGM is to generate reliable and scientifically relevant data on the personalized treatment of cancer. This objective is met through high-quality translational research that enables the selection of the antitumor treatment with the most options for cure, the least toxicity, and the fewest adverse effects.

Therapy is based on the patient's genetic/molecular profile (pharmacogenetics) and on the tumor profile (pharmacogenomics). Appropriate selection of patients with cancer for the sophisticated antitumor therapy available at our center (targeted medical therapy, high-definition radiotherapy, cell therapy, hematopoietic stem cell transplant) ensures the ideal choice for each patient. The work carried out in the Area also includes the study of hereditary/familial cancer syndromes and other situations with a high risk of cancer in which various interventions are effective for reducing the probability of the disease occurring.

Research lines and axes

Strategic axes

- ▶ A1: Promotion of alliances and collaborations in oncology.
- ▶ A2: Consolidation of research lines in oncology.
- ▶ A3: Training in the molecular biology of cancer and new therapies.
- ▶ A4: Consolidation of infrastructure.

Strategic lines

Axis 1: Promotion of alliances and collaborations in the area of oncology

1. Promoting collaboration

- Intramural collaboration with laboratories and groups from our national center.
- National collaboration with groups from other centers through networks (eg, the Breast Cancer RETIC) and national cooperative groups (eg, GEICAM, TTD, and GECP).
- International collaboration with institutions from other countries (University of North Carolina, University of St Louis), international biotechnology companies (NanoString), and international cooperative groups (eg, TRIO, BIG, and EBCTCG).

2. Participation in multicenter EMP trials

Axis 2: Consolidation of research lines in oncology

1. Strengthening of basic, translational, and clinical research lines

Strategic objectives:

- Consolidate the research potential of the hematopoietic stem cell group.
- Develop the research capacity of the hematologic malignancy group.
- Develop the molecular biology laboratory of the Medical Oncology Service.

(Continued on next page)

Strategic lines (cont.)

2. Development of research programs that enable the selection of antitumor treatment adjusted to the type of tumor and the characteristics of the patient

Strategic objectives:

- Identify the differential genomic characteristics of the tumor.
- Identify molecular targets that can be inhibited by drugs.
- Identify the genetic characteristics of patients that affect the response to and toxicity of antitumor treatment.
- Identify circulating predictors of response to drug therapy (eg, circulating tumor cells, microRNAs).

3. Development of new antitumor drugs aimed at identifiable targets in the tumor in collaboration with the pharmaceutical industry

4. Development of cultures of human breast cancer cell lines that enable therapeutic hypotheses to be tested in vitro

5. Experimental models in carcinomatosis

6. Technical development of cytoreductive surgery and hyperthermic intraoperative intraperitoneal chemotherapy

7. Increased capacity for obtaining resources through the consolidation of new PIs

Strategic objectives:

- Apply for calls from the National Plan.
- Apply for local/regional public calls.
- Apply for calls from the private sector.

8. Increased scientific output

Strategic objectives:

- Increase the number of basic/translational publications.
- Increase the number of clinical/clinical trial publications.

Axis 3: Training

1. Increase in possibilities for postgraduate training

Strategic objectives:

- Promote preparation of doctoral theses among those members of the group who have not yet prepared one.
- Incorporate predoctoral fellows.
- Promote preparation of doctoral theses among medical residents.

(Continued on next page)

Strategic lines (*cont.*)

2. Development of academic programs for young staff physicians and residents in order to provide them with an introduction to the field of translational research in oncology

Axis 4: Consolidation of infrastructures

1. Development of an oncology-based molecular biology laboratory in the Medical Oncology Service

- In collaboration with other laboratories of the HGUGM.
- In collaboration with other national institutions.
- In collaboration with international researchers/centers.

2. Development of a dedicated clinical research unit that is organized to enable efficient study of antitumor drugs from the earliest stages (Phase I) to the most advanced clinical stages of development (Phase III)

Groups in AREA 6

Translational oncology



- ▶ Interdisciplinary oncology and biotechnology
- ▶ Translational medical oncology and personalized cancer therapy
- ▶ Genetic and clinical aspects of hematologic neoplasm and hematopoietic progenitor transplant
- ▶ Surgical oncology
- ▶ Hematology-oncology in pediatric patients
- ▶ Angiogenesis in brain tumors

Interdisciplinary oncology and biotechnology

Group director: FELIPE ÁNGEL CALVO MANUEL

Type: Consolidated

Research programs and lines

P1: High-precision radiotherapy

- ▶ L1: Intraoperative radiotherapy.
- ▶ L2: Pediatric radiotherapy.
- ▶ L3: Radiosurgical virtual navigation and planning.

P2: Gastrointestinal cancer/sarcoma

- ▶ L1: Intensification of therapy.
- ▶ L2: Resistance to chemoradiotherapy.

P3: Chemoradiotherapy

- ▶ L1: Molecular imaging.
- ▶ L2: Pathologic response.
- ▶ L3: Molecular response.

P4: Interdisciplinary oncologic care

- ▶ L1: Palliative medicine.
- ▶ L2: Surgical pathology.
- ▶ L3: Radiologic imaging.

P5: Biological dosimetry

The interdisciplinary nature of oncology means that knowledge is generated from innovation in clinical practice. This group develops applied research by integrating various hospital departments (oncologic surgery, histopathology, palliative medicine, hospital radiophysics, and clinical oncology [radiotherapeutic and medical]).

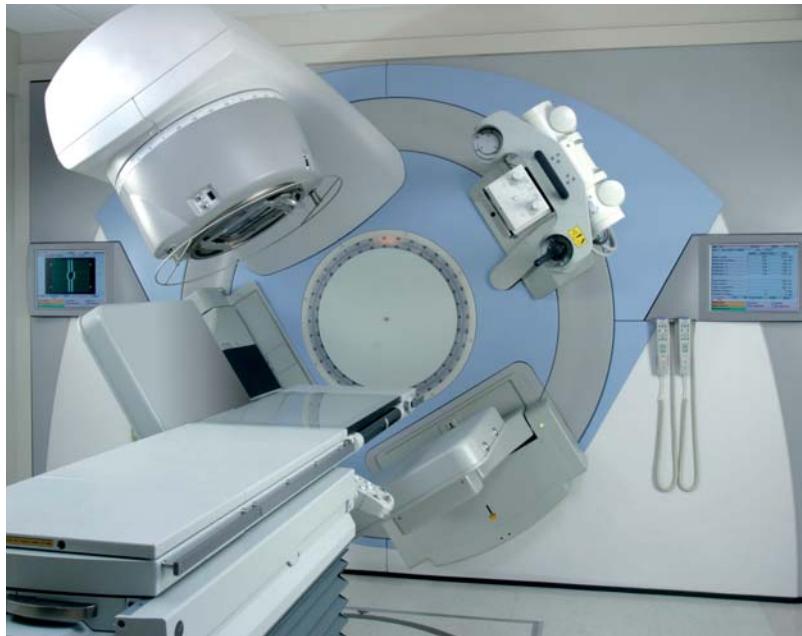
The development of biotechnology transforms care work into components that enable across-the-board improvement. The group carries out research into the correlation between expression in cellular and molecular pathology and molecular/metabolic imaging and patterns of response to chemoradiotherapy in models of human cancer that are suitable for neoadjuvant treatment. The predictability of the tolerance of healthy tissue to radiation and cancer is evaluated using models of chromosomal and proteomic damage caused by inflammation. High-precision radiotherapy is the paradigm of quality in locoregional treatment of cancer with ionizing radiation: it promotes the multimodal therapeutic index by reducing toxicity in healthy tissue (which can be temporarily displaced during surgery) and increases local control (high-precision radiotherapy).

In addition, the interdisciplinary oncology and biotechnology group is formed by experts in intraoperative radiotherapy as a modality for intensifying multidisciplinary radiosurgical approaches in the rescue treatment of oligorecurrent cancer and locally advanced cancer. The approach is also an alternative for optimization in cancer with a favorable prognosis (minimally efficacious therapy).

Of note, this group developed the first intraoperative electron radiotherapy planning system (patent), which enables the group's activity to be expanded to areas such as virtual surgery and stereotactic navigation in large surgically exposed cavities. The clinical and pharmacologic support of patients with cancer who are not receiving active cancer treatment is investigated prospectively based on integrated care activity.

Group members

- **Héctor Alburquerque Carbuccia:** Predoctoral.
- **Juan Carlos Alonso Farto:** Postdoctoral.
- **Ana Álvarez González:** Predoctoral.
- **Rafael Ayala Lázaro:** Predoctoral.
- **José Blanco Rodríguez:** Predoctoral.
- **Ana Calín Lorca:** Predoctoral.
- **Felipe Ángel Calvo Manuel:** Group director.
- **Emilio del Valle Hernández:** Predoctoral.
- **María Jesús García Hernández:** Predoctoral.



- **Marina Gómez Espí:** Postdoctoral.
- **Susana Gómez Cores:** Predoctoral.
- **Carmen González San Segundo:** Postdoctoral.
- **Federico González Aragoneses:** Postdoctoral.
- **Rocío Jiménez Rojas:** Predoctoral.
- **Miguel Ángel López Bote:** Predoctoral.
- **Miguel Ángel Lozano Barriuso:** Predoctoral.
- **Mercedes Moreno Domene:** Predoctoral.
- **Mercedes Muñoz Fernández:** Predoctoral.
- **Carlos Navarro Vila:** Postdoctoral.
- **Juan Manuel Núñez Olarte:** Postdoctoral.
- **María Isabel Peligros Gómez:** Postdoctoral.
- **Rafael Peñalver Pascual:** Postdoctoral.
- **María Jesús Prieto Rodríguez:** Predoctoral.
- **Marcos Rodríguez Martín:** Predoctoral.
- **José Ramón Sendón del Río:** Predoctoral.
- **Francisco Javier Serrano Andreu:** Postdoctoral.
- **Fernando Sierra Díaz:** Predoctoral.
- **Claudio Vicente Solé Pesutic:** Postdoctoral.
- **Fernando Turégano Fuentes:** Postdoctoral.

Research projects – Competitive calls

- Principal investigator: Rafael Herranz Crespo
Title: Realizing the European network in biodosimetry.
Funding body: European Commission
Start date: 2012
End date: 2015

Theses

| Doctoral student | Title | Supervisor(s) | University |
|-----------------------|--|---|-----------------------------------|
| Elena Sagarra Cebolla | Intensificación terapéutica en adenocarcinoma de recto cT4NxM0. Resultados y factores pronósticos | Felipe A. Calvo manuel, Jose Luis Gracia Sabrido, Rosangela Obregón Reina | UCM |
| Claudio Solé Pesutic | Valor pronóstico de la radioterapia externa en el manejo multidisciplinar de pacientes con cáncer oligo-recurrente | Felipe A. Calvo manuel | Universidad Complutense de Madrid |

Patents

- Title: Sistema de planificación para radioterapia intraoperatoria y procedimiento para llevar a cabo dicha planificación
Reference: PCT/ES2008/000240
Owner: GMV Aerospace and Defense S.A.
Inventors: Manuel Desco Menéndez, Javier Pascau González-Garzón, Felipe Calvo Manuel, Juan José Vaquero López, Manlio Fabio Valdivieso Cacique, Carlos Guillermo Illana Alejandro.

Publications

Total Impact Factor: 112.8

Publications in journals with impact factor indexed in Journal Citation Reports:

- Rodriguez-Feo JA; Puerto M; Fernandez-Mena C; Verdejo C; Lara JM; Diaz-Sanchez M; Alvarez E; Vaquero J; Marin-Jimenez I; Banares R; Menchen. *A new role for reticulon-4B/NOGO-B in the intestinal epithelial barrier function and inflammatory bowel disease.* AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY. 2015; 308(12) G981-G993. IF: 3.297. Quartile: 2. (Article).
- Sole CV; Calvo FA; Lizarraga S; Gonzalez-Bayon L; Segundo CGS; Desco M; Garcia-Sabrido JL. *Single-Institution Multidisciplinary Management of Locoregional Oligo-Recurrent Pelvic Malignancies: Long-Term Outcome Analysis.* ANNALS OF SURGICAL ONCOLOGY. 2015; 22: S1247-S1255. IF: 3.655. Quartile: 1. (Article).
- Mattiucci GC; Falconi M; Van Stiphout RGPM; Alfieri S; Calvo FA; Herman JM; Maidment BW; Miller RC; Regine WF; Reni M; Sharma N; Partelli S; Genovesi D; Balducci M; Deodato F; Valentini V; Morganti AG. *Adjuvant Chemoradiation in Pancreatic Cancer: A Pooled Analysis in Elderly (>= 75 years) Patients.* ANTI-CANCER RESEARCH. 2015; 35(6) 3441-3446. IF: 1.895. Quartile: 3. (Article).
- Martinez IG; Aragoneses FG; Ramirez JM. *Multimodal rehabilitation program in thoracic surgery.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(4) 159-160. IF: 1.771. Quartile: 3. (Editorial Material).
- Rodado-Marina S; Coronado-Poggio M; Garcia-Vicente AM; Garcia-Garzon JR; Alonso-Farto JC; de la Jara AC; Maldonado-Suarez A; Rodriguez-Fernandez A. *Clinical utility of F-18-fluorocholine positron-emission tomography/computed tomography (PET/CT) in biochemical relapse of prostate cancer after radical treatment: results of a multicentre study.* BJU INTERNATIONAL. 2015; 115(6) 874-883. IF: 4.387. Quartile: 1. (Article).
- Cambeiro M; Aristu JJ; Jimenez MM; Arbea L; Ramos L; Julian MS; Azinovic I; Lvo FAC; Martinez-Monge R. *Salvage wide resection with intraoperative electron beam therapy or HDR brachytherapy in the management of isolated local recurrences of soft tissue sarcomas of the extremities and the superficial trunk.* BRACHYTHERAPY. 2015; 14(1) 62-70. IF: 2.088. Quartile: 3. (Article).

- Fernandez-Friera L; Penalvo JL; Fernandez-Ortiz A; Ibanez B; Lopez-Melgar B; Laclaustra M; Oliva B; Mocoroa A; Mendiguren J; de Vega VM; Garcia L; Molina J; Sanchez-Gonzalez J; Guzman G; Alonso-Farto JC; Guallar E; Civeira F; Sillesen H; Pocock S; Ordovas. *Prevalence, Vascular Distribution, and Multiterritorial Extent of Subclinical Atherosclerosis in a Middle-Aged Cohort The PESA (Progression of Early Subclinical Atherosclerosis) Study.* CIRCULATION. 2015; 131(24) 2104-2113. IF: 17.047. Quartile: 1. (Article).
- Marin AG; Fuentes FT; Ayuso MC; Lillo JAA; Ballesteros JCC; Lopez MP. *Predictive factors for mortality in Fournier's gangrene: A series of 59 cases.* CIRUGIA ESPANOLA. 2015; 93(1) 12-17. IF: 1. Quartile: 3. (Article).
- Vina JL; Adiego CS; Casaurran GG; Pascual RP; Aragoneses FG. *Metalloptysis: A new case with another cause?* CIRUGIA ESPANOLA. 2015; 93(6) 412-413. IF: 1. Quartile: 3. (Editorial Material).
- Sole CV; Calvo FA; Lizarraga S; Gonzalez-Bayon L; Garcia-Sabrido JL. *Intraoperative electron-beam radiation therapy with or without external-beam radiotherapy in the management of paraaortic lymph-node oligometastases from gynecological malignancies.* CLINICAL & TRANSLATIONAL ONCOLOGY. 2015; 17(11) 910-916. IF: 2.075. Quartile: 3. (Article).
- Calvo FA; Sole CV; Marsiglia H; Alvarado E; Ferrer C; Czito B. *Intraoperative Radiotherapy for Gastrointestinal Malignancies: Contemporary Outcomes With Multimodality Therapy.* CURRENT ONCOLOGY REPORTS. 2015; 17(1). IF: 2.653. Quartile: 3. (Article).
- Sole CV; Calvo FA; Ferrer C; Alvarez E; Carreras JL; Ochoa E. *Human cytomegalovirus and Epstein-Barr virus infection impact on F-18-FDG PET/CT SUVmax, CT volumetric and KRAS-based parameters of patients with locally advanced rectal cancer treated with neoadjuvant therapy.* EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING. 2015; 42(2) 186-196. IF: 5.537. Quartile: 1. (Article).
- Maas M; Nelemans PJ; Valentini V; Crane CH; Capirci C; Rodel C; Nash GM; Kuo LJ; Glynne-Jones R; Garcia-Aguilar J; Suarez J; Calvo FA; Pucciarelli S; Biondo S; Theodoropoulos G; Lambregts DMJ; Beets-Tan RGH; Beets GL. *Adjuvant chemotherapy in rectal cancer: Defining subgroups who may benefit after neoadjuvant chemoradiation and resection A pooled analysis of 3,313 patients.* INTERNATIONAL JOURNAL OF CANCER. 2015; 137(1) 212-220. IF: 5.531. Quartile: 1. (Article).
- Gimenez-Manzorro A; Romero-Jimenez RM; Calleja-Hernandez MA; Pla-Mestre R; Munoz-Calero A; Sanjurjo-Saez M. *Effectiveness of an electronic tool for medication reconciliation in a general surgery department.* INTERNATIONAL JOURNAL OF CLINICAL PHARMACY. 2015; 37(1) 159-167. IF: 1.339. Quartile: 4. (Article).
- Pereira A; Perez-Medina T; Magrina JF; Magtibay PM; Rodriguez-Tapia A; Peregrin I; Mendizabal E; Ortiz-Quintana L. *International Federation of Gynecology and Obstetrics Staging Classification for Cancer of the Ovary, Fallopian Tube, and Peritoneum Estimation of Survival in Patients With Node-Positive Epithelial Ovarian Cancer.* INTERNATIONAL JOURNAL OF GYNECOLOGICAL CANCER. 2015; 25(1) 49-54. IF: 2.116. Quartile: 2. (Article).
- Sole CV; Calvo FA; Polo A; Cambeiro M; Gonzalez C; Desco M; Martinez-Monge R. *Intraoperative Electron-Beam Radiation Therapy for Pediatric Ewing Sarcomas and Rhabdomyosarcomas: Long-Term Outcomes.* INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS. 2015; 92(5) 1069-1076. IF: 4.495. Quartile: 1. (Article).
- Horcajada-Reales C; Aviles-Izquierdo JA; Ciudad-Blanco C; Conde-Montero E; Parra-Blanco V; Lazaro-Ochaita P; Suarez-Fernandez R. *Dermoscopic pattern in facial trichilemmomas: Red iris-like structure.* JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 2015; 72(1) S30-S32. IF: 5.621. Quartile: 1. (Editorial Material).
- De Leon-Luis J; Bravo C; Gamez F; Ortiz-Quintana L. *Cardiovascular System Sonographic Evaluation Algorithm A New Sonographic Algorithm for Evaluation of the Fetal Cardiovascular System in the Second Trimester.* JOURNAL OF ULTRASOUND IN MEDICINE. 2015; 34(7) 1271-1282. IF: 1.544. Quartile: 2. (Article).
- Gamez F; Rodriguez MJ; Tenias JM; Garcia J; Pintado P; Martin R; Perez R; Ortiz-Quintana L; De Leon-Luis J. *Reference Ranges for the Pulsatility Index of the Fetal Aortic Isthmus in Singleton and Twin Pregnancies.* JOURNAL OF ULTRASOUND IN MEDICINE. 2015; 34(4) 577-584. IF: 1.544. Quartile: 2. (Article).

- Zapatero A; Guerrero A; Maldonado X; Alvarez A; San Segundo CG; Rodriguez MAC; Macias V; Olive AP; Casas F; Boladeras A; de Vidales CM; de la Torre MLV; Villa S; de la Haza AP; Calvo FA. *High-dose radiotherapy with short-term or long-term androgen deprivation in localised prostate cancer (DART01/05 GICOR): a randomised, controlled, phase 3 trial.* LANCET ONCOLOGY. 2015; 16(3) 320-327. IF: 26.509. Quartile: 1. (Article).
 - Barnard S; Ainsbury EA; Al-hafidh J; Hadjidekova V; Hristova R; Lindholm C; Gil OM; Moquet J; Moreno M; Rossler U; Thierens H; Vandevenne C; Vral A; Wojewodzka M; Rothkamm K. *THE FIRST GAMMA-H2AX BIODOSIMETRY INTERCOMPARISON EXERCISE OF THE DEVELOPING EUROPEAN BIODOSIMETRY NETWORK RENEb.* RADIATION PROTECTION DOSIMETRY. 2015; 164(3) 265-270. IF: 0.894. Quartile: 3. (Article).
 - Kulka U; Ainsbury L; Atkinson M; Barnard S; Smith R; Barquinero JF; Barrios L; Bassinet C; Beinke C; Cucu A; Darroudi F; Fattibene P; Bortolin E; Della Monaca S; Gil O; Gregoire E; Hadjidekova V; Haghdoost S; Hatziv; Hempel W; Herranz R; Jaworska A; Lind. *Realising the European network of biodosimetry: RENEb-status quo.* RADIATION PROTECTION DOSIMETRY. 2015; 164(1-2) 42-45. IF: 0.894. Quartile: 3. (Article).
 - Cambeiro M; Calvo FA; Aristu JJ; Jimenez MM; San-Julian M; Alcalde J; Hernandez-Lizoain JL; Jurado M; Martinez-Monge R. *Salvage surgery and radiotherapy including intraoperative electron radiotherapy in isolated locally recurrent tumors: Predictors of outcome.* RADIOTHERAPY AND ONCOLOGY. 2015; 116(2) 316-322. IF: 4.817. Quartile: 1. (Article).
 - Lpez-Torrecilla J; Boladeras A; Cabeza MA; Zapatero A; Jove J; Esteban LM; Henriquez I; Casana M; Gonzalez-San Segundo C; Gomez-Caamano A; Mengual JL; Hervas A; Munoz JL; Sanz G. *Three linked nomograms for predicting biochemical failure in prostate cancer treated with radiotherapy plus androgen deprivation therapy.* STRAHLENTHERAPIE UND ONKOLOGIE. 2015; 191(10) 792-800. IF: 2.898. Quartile: 1. (Article).
 - Sole CV; Calvo FA; Atahualpa F; Berlin A; Herranz R; Gonzalez-Bayon L; Garcia-Sabrido JL. *Role of radiotherapy in the chemotherapy-containing multidisciplinary management of patients with resected pancreatic adenocarcinoma.* STRAHLENTHERAPIE UND ONKOLOGIE. 2015; 191(1) 17-25. IF: 2.898. Quartile: 1. (Article).
 - Pereira A; Mendizabal E; de Leon J; Perez-Medina T; Magrina JF; Magtibay PM; Rodriguez-Tapia A; Lizarraga S; Ortiz-Quintana L. *Peritoneal carcinomatosis: A malignant disease with an embryological origin?.* SURGICAL ONCOLOGY-OXFORD. 2015; 24(3) 305-311. IF: 3.514. Quartile: 1. (Article).
 - Valdivieso-Casique MF; Rodriguez R; Rodriguez-Bescos S; Lardies D; Guerra P; Ledesma MJ; Santos A; Ibanez P; Vidal M; Udias JM; Otaduy MA; Calama JA; Lopez-Tarjuelo J; Santos-Miranda JA; Desco M; Garcia-Vazquez V;. *RADIANCE-A planning software for intra-operative radiation therapy.* TRANSLATIONAL CANCER RESEARCH. 2015; 4(2) 196-209. IF: 1.757. Quartile: 4. (Review).
- Publications in journals without impact factor indexed in Journal Citation Reports:**
- Kulyapina A; Perez Diaz D; Sanchez Rodriguez T; Turegano F. *Tracheoinnominate fistula: a rare acute complication of penetrating neck injury.* Asian cardiovascular & thoracic annals. 2015; 23(4) 478-80. (Article).

| | No. | IF |
|---|-----|-------|
| Own publications | 10 | 55.0 |
| Joint publications | 17 | 57.8 |
| First-decile publications | 8 | 71.2 |
| First-quartile publications | 12 | 86.9 |
| Second-quartile publications | 4 | 8.5 |
| Third-quartile publications | 9 | 14.3 |
| Fourth-quartile publications | 2 | 3.1 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 28 | 112.8 |

Translational medical oncology and personalized cancer therapy

Group director: MIGUEL MARTÍN JIMÉNEZ

Type: Consolidated

Research lines

- ▶ L1: Adjuvant chemotherapy of breast cancer.
- ▶ L2: Prediction of the response of breast cancer to adjuvant therapy using monogenetic and polygenetic models.
- ▶ L3: Prognostic and predictive importance of the april protein and gene in breast cancer.
- ▶ L4: Prognostic and predictive value of circulating tumor cells in breast cancer.
- ▶ L5: Predictive value of the efficacy and toxicity of the polymorphisms of the enzymes involved in the metabolism of capecitabine in women with breast cancer.
- ▶ L6: Clinical, genetic, and molecular characterization of patients with hereditary cancer predisposition syndromes.
- ▶ L7: Role of miRNAs as biomarkers of early diagnosis in hereditary breast cancer. Expression profiles in tumors, blood, and serum.
- ▶ L8: Validation of a new concept of anticancer therapy based on dsRNA nanocomplexes. In vivo analysis of biomarkers and tumor vectorization systems.
- ▶ L9: Study of prognostic and predictive factors in the response to castration-resistant prostate carcinoma.
- ▶ L10: Study of molecular prognostic factors in infiltrating bladder cancer treated with radical cystectomy and adjuvant chemotherapy.
- ▶ L11: Study of new medical treatment schedules for metastatic colorectal cancer.
- ▶ L12: Intraperitoneal therapy for colorectal cancer and gastric cancer.
- ▶ L13: Study of germinal polymorphisms and their relationship with the toxicity of capecitabine and 5-fluorouracil in colorectal cancer.
- ▶ L14: Circulating tumor cells in rectal cancer with synchronous liver metastasis: response to various therapeutic strategies (chemotherapy, chemoradiotherapy, and surgery for rectal cancer and/or liver metastases) and clinical-developmental correlations.

- ▶ L15: Study of the pattern of tumor growth in patients with colorectal cancer.
- ▶ L16: Risk of early ovarian failure in premenopausal patients with epithelial breast cancer treated with chemotherapy based on docetaxel according to ovarian reserve.
- ▶ L17: Pharmacogenomics applied to aromatase inhibitors (anastrozole) in combination with pure antiestrogens (fulvestrant), impact on efficacy and toxicity profile.
- ▶ L18: Oncotromb1201 project (Study of risk genomic profiles in venous thromboembolism in patients with cancer undergoing treatment with chemotherapy in hospital). Translational study.
- ▶ L19: Clinical, genetic, and molecular characterization of patients with hereditary cancer predisposition syndromes (FIBHGM).
- ▶ L20: Project on clinical and histopathological characterization of familial melanoma in Spain (Fam-GEM-1) (Spanish Multidisciplinary Group on Melanoma).
- ▶ L21: Inflammatory microenvironment of human melanoma: tumor-stroma/tumor reciprocal interactions and clinical significance of polarization of tumor associated macrophages.
- ▶ L22: Search for genomic predictors of response to neoadjuvant chemotherapy with docetaxel and carboplatin in patients with triple-negative breast cancer.
- ▶ L23: Development of murine breast cancer tumorgrafts to study the effect of docetaxel (Taxotere) and carboplatin as single agents and in combination in terms of antitumor activity and development of metastasis.
- ▶ L24: Toxicity profile of taxane-based (neo)adjuvant chemotherapy regimens in localized or locally advanced (I-III) stages of breast cancer.
- ▶ L25: Triple-negative breast cancer: prediction of response to neoadjuvant docetaxel-carboplatin by means of characterization of TILs and immune signatures based on massive RNA sequencing.

Group members

- Gema Aguado Orihuela: Predoctoral.
- Iker Aguilar Caballero: Predoctoral.
- Enrique Luis Álvarez Castillo: Predoctoral.
- Rosa Mª Álvarez Álvarez: Predoctoral.
- Sandra María Andrés Ratón: Support technician.
- Jose Ángel Arranz Arija: Postdoctoral.
- Carolina Ayllón García: Predoctoral.
- Alba Blanco Velilla: Data management.
- Monserrat Blanco Codesido: Postdoctoral.
- Óscar Bueno Zamora: Predoctoral.
- Aitana Calvo Ferrández: Predoctoral.
- Marta Cantero Martín: Predoctoral.
- María Cebollero Presmanes: Postdoctoral.
- Roberto Chinchón Palacios: Data management.
- Ana Soledad Corcuera Sánchez: Data management.
- María del Monte Millán: Data management.
- Sonia Delgado Ordóñez: Predoctoral.
- Elena Durán Verdasco: Predoctoral.
- Isabel Echevarría Díaz-Guardamino: Predoctoral.
- Yolanda Escobar Álvarez: Predoctoral.
- Edward José Espinal Domínguez: Predoctoral.
- Magdalena Esteban Arranz: Predoctoral.
- Sara Fernández González: Data management.
- Carmen Flores Sánchez: Predoctoral.
- Sandra Flórez Peñasco: Data management.
- Fernando Galindo Barreales: Administration.
- María Iria Gallego Gallego: Predoctoral.
- Elsa García Laborda: Predoctoral.
- Gonzalo García González: Predoctoral.
- Mª Pilar García Alfonso: Postdoctoral.
- Ramón García Gómez: Postdoctoral.
- Miguel Ángel García Pardo de Santayana: Predoctoral.
- Victoria González Blázquez: Predoctoral.
- Milagros González Rivera: Postdoctoral.
- Ricardo González del Val Subirats: Postdoctoral.
- Ana Herrero Heras: Predoctoral.
- Yolanda Jerez Gilarranz: Postdoctoral.
- María Elena Lahoz León: Predoctoral.
- Santiago Lizárraga Bonelli: Postdoctoral.
- Miriam Lobo de Mena: Predoctoral.
- Estela López Juárez: Data management.



- Cristina López López: Predoctoral.
- Sara López-Tarruella Cobo: Postdoctoral.
- María Soledad Luque Molina: Predoctoral.
- Iván Márquez Rodas: Postdoctoral.
- Miguel Martín Jiménez: Senior researcher.
- Mónica Martínez Peres: Predoctoral.
- Íñigo Martínez Delfrade: Predoctoral.
- Tatiana Massarrah Sánchez: Predoctoral.
- Sara Muñiz Frutos: Predoctoral.
- Andrés Muñoz Martín: Postdoctoral.
- Inmaculada Ocaña Torres: Support technician.
- Francisco Javier Olcoz Monreal: Predoctoral.
- Laura Ortega Morán: Predoctoral.
- María Isabel Palomero Plaza: Predoctoral.
- Inés Pérez de la Fuente: Data management.
- Ricardo Pérez Fernández: Predoctoral.
- Antonio Climent Picornell Company: Postdoctoral.
- Beatriz Puente Vázquez: Data Management.
- Rocío Ramos Medina: Postdoctoral.
- Patricia Rincón Olbés: Predoctoral.
- Carmen Rubio Alarcón: Data management.
- Ana Belén Ruiz Bolaños: Data management.
- María Pilar Sabin Domínguez: Predoctoral.
- Carmen Sandoval García: Predoctoral.
- Jaime Siegrist Pérez-Solero: Predoctoral.
- Gabriela Torres Pérez-Solero: Predoctoral.
- Daniel Urosa Velasco: Data management.

Research projects – Competitive calls

- Principal investigator: Miguel Martín Jiménez
Title: Predictores genómicos de respuesta a la quimioterapia neoadyuvante docetaxel-carboplatino en pacientes con cáncer de mama triple negativo.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Miguel Martín Jiménez
Title: Merck Serono 2012
Funding body: Fundación Salud 2000
Start date: 2013
End date: 2016
- Principal investigator: Miguel Martín Jiménez
Title: Desarrollo de Tumorgrafts murinos de cáncer de mama para estudiar el efecto de Docetaxel (Taxotere) y Carboplatino como agentes únicos y en combinación, a nivel de actividad antitumoral y desarrollo de metástasis.
Funding body: Fundación SEOM
Start date: 2015
End date: 2017

Theses

| Doctoral student | Title | Supervisor(s) | University |
|-----------------------|---|---------------|-----------------------------------|
| Rebeca Mondejar Solis | Cambios en el perfil inmunohistoquímico tras tratamiento neoadyuvante en pacientes con cáncer de mama | Miguel Martín | Universidad Complutense de Madrid |

| Doctoral student | Title | Supervisor(s) | University |
|---------------------------|---|---------------|-----------------------------------|
| José Antonio López Martín | Cambios proteómicos y del metabolismo energético en un modelo in vitro de interacción epitelio-mesénquima de cáncer de pancreas | Miguel Martín | Universidad Complutense de Madrid |

Clinical practice guidelines

| Authors | Title | Publication |
|---|---|--|
| Dr. Emilio Alba, Dr. Antonio Antón, Dr. Agustí Barnadas, Dr. Enrique Barrajón, Dra. Isabel Blancas, Dra. Eva Carrasco, Dra. Ana Casas, Dr. Antonio González, Dr. Juan Lao, Dra. Ana Lluch, Dra. Sara López Tarruella, Dr. Miguel Martín, Dra. Montse Muñoz, Dr. Ricardo Sánchez Escrivano, Sr. Ivan Solà. | Guía GEICAM para el diagnóstico y tratamiento del Cáncer de Mama Metastásico | GEICAM (www.geicam.org) |
| Vanessa Pachón Olmos, María José Ramos Gallo, Maite Antonio Rebollo, Dolores Ballesteros Ortega, Lara Iglesias Docampo, Antonio Romera-Villegas, Enrique Gallardo Díaz, Andrés Muñoz Martín | Manejo de la enfermedad tromboembólica venosa en pacientes oncológicos: guías de práctica clínica española. Consenso SEACV-SEOM | Medicina Clínica. Volume 144, Supplement 1, January 2015, Pages 3-15 |

(Continued on next page)

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| Authors | Title | Publication |
|---|--|--|
| Garcia-Alfonso P; Garcia-Foncillas J; Salazar R; Perez-Segura P; Garcia-Carbonero R; Musulen-Palet E; Cuatrecasas M; Landolfi S; Cajal SRY; Navarro S | Updated guidelines for biomarker testing in colorectal carcinoma: a national consensus of the Spanish Society of Pathology and the Spanish Society of Medical Oncology | Clin Transl Oncol. 2015 Apr;17(4):264-73. doi: 10.1007/s12094-014-1252-0. Epub 2014 Nov 6. |
| Climent MA; Leon-Mateos L; del Alba AG; Perez-Valderrama B; Mendez-Vidal MJ; Mellado B; Arranz JA; Sanchez-Hernandez A; Cassinello J; Olmos D; Carles J | Updated recommendations from the Spanish Oncology Genitourinary Group for the treatment of patients with metastatic castration-resistant prostate cancer | Critical Reviews In Oncology Hematology |
| Rodriguez CA; Martin M | SEOM Guidelines 2015: a new era in the collaboration with the Spanish Cancer Research Cooperative Groups | Clinical & translational oncology |
| Gavila J; Lopez-Tarruella S; Saura C; Munoz M; Oliveira M; De la Cruz-Merino L; Morales S; Alvarez I; Virizuela JA; Martin M | SEOM clinical guidelines in metastatic breast cancer 2015 | Clinical & translational oncology |
| Aranda E; Aparicio J; Alonso V; Garcia-Albeniz X; Garcia-Alfonso P; Salazar R; Valladares M; Vera R; Vieitez JM; Garcia-Carbonero R | SEOM clinical guidelines for diagnosis and treatment of metastatic colorectal cancer 2015 | Clin Transl Oncol. 2015 Dec;17(12):972-81. doi: 10.1007/s12094-015-1434-4. Epub 2015 Dec 15. |
| Berrocal A; Arance A; Espinosa E; Castano AG; Cao MG; Larriba JLG; Martin JAL; Marquez I; Soria A; Algarra SM | SEOM guidelines for the management of Malignant Melanoma 2015 | Clinical & translational oncology |

Intellectual property registrations

- Title: SMART, application for cancer genetic counseling
Reference no, Notarial registry no.: 16/2015/5724
Owner: FIBHGM, UNED, URJC
Authors: Iván Márquez, Juan Martínez Romo, Cristina Rodríguez, Susana Borromeo

Publications

Total Impact Factor: 349.8

Publications in journals with impact factor indexed in Journal Citation Reports:

- Gruenberger T; Bridgewater J; Chau I; Alfonso PG; Rivoire M; Mudan S; Lasserre S; Hermann F; Waterkamp D; Adam R. *Bevacizumab plus mFOLFOX-6 or FOLFOXIRI in patients with initially unresectable liver metastases from colorectal cancer: the OLIVIA multinational randomised phase II trial.* ANNALS OF ONCOLOGY. 2015; 26(4) 702-708. IF: 9.269. Quartile: 1. (Article).
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TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

- Severe Acute GVHD but Does Not Affect the GVL Effect after Myeloablative HLA-Identical Allogeneic Stem Cell Transplantation.* PLOS ONE. 2015; 10(10). IF: 3.057. Quartile: 1. (Article).
- Trojan J; Mineur L; Tomasek J; Rouleau E; Fabian P; de Maglio G; Garcia-Alfonso P; Aprile G; Taylor A; Kafatos G; Downey G; Terwey JH; van Krieken JH. *Panitumumab Use in Metastatic Colorectal Cancer and Patterns of KRAS Testing: Results from a Europe-Wide Physician Survey and Medical Records Review.* PLOS ONE. 2015; 10(10). IF: 3.057. Quartile: 1. (Review).
 - Tejera-Alhambra M; Casrouge A; de Andres C; Seyfferth A; Ramos-Medina R; Alonso B; Vega J; Fernandez-Paredes L; Albert ML; Sanchez-Ramon S. *Plasma Biomarkers Discriminate Clinical Forms of Multiple Sclerosis.* PLOS ONE. 2015; 10. IF: 3.057. Quartile: 1. (Article).
 - Castello A; Martin M; Ruiz A; Casas AM; Baena-Canada JM; Lope V; Antolin S; Sanchez P; Ramos M; Anton A; Munoz M; Bermejo B; De Juan-Ferre A; Jara C; Chacon JL; Jimeno MA; Rosado P; Diaz E; Guillen V; Lluch A; Carrasco E; Perez-Gomez B; Vioque J; Pollan M. *Lower Breast Cancer Risk among Women following the World Cancer Research Fund and American Institute for Cancer Research Lifestyle Recommendations: EpiGEICAM Case-Control Study.* PLOS ONE. 2015; 10(5). IF: 3.057. Quartile: 1. (Article).
 - Marquez-Rodas I; Gonzalez MM; Nagore E; Gomez-Fernandez C; Aviles-Izquierdo JA; Maldonado-Seral C; Soriano V; Majem-Tarruella M; Palomar V; Maseda R; Martin-Carnicero A; Puertolas T; Godoy E; Cerezuela P; de Olza MO; Campos B; Perez-Ruiz E; Soria. *Frequency and Characteristics of Familial Melanoma in Spain: The FAM-GEM-1 Study.* PLOS ONE. 2015; 10(4). IF: 3.057. Quartile: 1. (Article).
 - Escobar Y; Cajaraville G; Virizuela JA; Alvarez R; Munoz A; Olariaga O; Tames MJ; Muros B; Lecumberri MJ; Feliu J; Martinez P; Adansa JC; Martinez MJ; Lopez R; Blasco A; Gascon P; Calvo V; Luna P; Montalar J; Del Barrio P;. *Incidence of chemotherapy-induced nausea and vomiting with moderately emetogenic chemotherapy: ADVICE (Actual Data of Vomiting Incidence by Chemotherapy Evaluation) study.* SUPPORTIVE CARE IN CANCER. 2015; 23(9) 2833-2840. IF: 2.535. Quartile: 1. (Article).
 - Pereira A; Mendizabal E; de Leon J; Perez-Medina T; Magrina JF; Magtibay PM; Rodriguez-Tapia A; Lizarraga S; Ortiz-Quintana L. *Peritoneal carcinomatosis: A malignant disease with an embryological origin?.* SURGICAL ONCOLOGY-OXFORD. 2015; 24(3) 305-311. IF: 3.514. Quartile: 1. (Article).
 - Garcia-Alfonso P; Ferrer A; Gil S; Duenas R; Perez MT; Molina R; Capdevila J; Safont MJ; Castanon C; Cano JM; Lara R. *Neoadjuvant and conversion treatment of patients with colorectal liver metastasis: the potential role of bevacizumab and other antiangiogenic agents.* TARGETED ONCOLOGY. 2015; 10(4) 453-465. IF: 3.197. Quartile: 2. (Review).
- Publications in journals without impact factor indexed in Journal Citation Reports:**
- Martin M; Herrero A; Echavarria I. *BREAST CANCER.* ARBOR-CIENCIA PENSAMIENTO Y CULTURA. 2015; 191(773). (Article).
 - Herrero C; Fernandez-Martos C. *Use of capecitabine before and after chemoradiation in locally advanced rectal cancer: what is the evidence?.* COLORECTAL CANCER. 2015; 4(5) 203-206. (Editorial Material).
- | | No. | IF |
|---|-----|-------|
| Own publications | 17 | 124.3 |
| Joint publications | 28 | 225.6 |
| First-decile publications | 13 | 240.3 |
| First-quartile publications | 30 | 313.1 |
| Second-quartile publications | 5 | 16.4 |
| Third-quartile publications | 9 | 18.5 |
| Fourth-quartile publications | 1 | 1.8 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 47 | 349.8 |

Genetic and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation

Group directors: JOSÉ LUIS DÍEZ MARTÍN and ISMAEL BUÑO BORDE

Type: Consolidated

Research programs and lines

P1: Transplantation of hematopoietic progenitors

- ▶ L1: Nonconventional transplant of hematopoietic progenitors.
- ▶ L2: Genetic follow-up of chimerism and residual disease.
- ▶ L3: Polymorphisms, methylation and expression of immune system genes.
- ▶ L4: Hematopoietic transplant in patients with AIDS.
- ▶ L5: Electronic management of clinical information.

P2: Diagnosis and treatment of hematologic neoplasms

- ▶ L1: Stratified treatment of acute leukemia depending on the result of flow cytometry and genetic analysis.
- ▶ L2: Genetic markers in the diagnosis, prognosis, and treatment of hematologic neoplasms.

P3: Cell therapy in patients with hematologic disorders

- ▶ L1: Donor lymphocyte infusion in patients undergoing hematopoietic progenitor transplant.
- ▶ L2: Mesenchymal cell infusion for the treatment of refractory GVHD in patients undergoing transplantation.
- ▶ L3: Mesenchymal cell infusion for the treatment of hemorrhagic cystitis in transplant recipients.

The research team jointly led by José Luis Díez Martín and Ismael Buño Borde was created in 1997. Its initial objectives focused on the management of hematopoietic stem cell transplantation and on how it could be improved using genetics. With time, this research group has grown in size and matured, and its objectives have gradually extended and diversified to cover all blood diseases and their management using the most modern approaches available, both from a clinical viewpoint (eg, biologic therapy, therapy targeting specific molecules, nonconventional hematopoietic stem cell transplantation, and electronic management of information) and in terms of laboratory work (eg, genetics, genomics, flow cytometry, cell biology). The group's current activity focuses on 3 major translational research lines:

- 1) Hematopoietic stem cell transplantation. This line is aimed at developing and introducing new therapeutic strategies (eg, nonconventional stem cell transplants [dual and haploidentical], hematopoietic transplant in patients with AIDS-associated lymphoma), laboratory testing (genetic monitoring of chimerism and residual disease, massive sequencing for identification of polymorphisms in immune system genes, flow cytometry-based monitoring of immune reconstitution), and procedures for managing information (electronic management of clinical information) in order to improve the clinical management of the transplant recipient.
- 2) Diagnosis and treatment of hematologic malignancy. The objective of this line is to develop diagnostic approaches, mainly in the field of flow cytometry and genetics, and apply them to stratified risk-adapted management of hematologic malignancies.
- 3) Cell therapy in patients with hematologic disease. This line is based on the use of cells to treat various hematologic diseases. Our main interest is in the use of donor lymphocyte infusion to treat conditions such as relapse and graft rejection in patients undergoing hematopoietic stem cell transplantation, as well as in the infusion of mesenchymal cells for the treatment of refractory graft-versus-host disease or hemorrhagic cystitis in this type of patient.

Group members

- **Javier Anguita Velasco:** Postdoctoral.
- **Pascual Balsalobre López:** Postdoctoral.
- **Mariana Bastos Oreiro:** Predoctoral.
- **Elena Buces González:** Predoctoral.
- **Ismael Buño Borde:** Group director.
- **Diego Carbonell Muñoz:** Predoctoral.
- **María Chicano Lavilla:** Predoctoral.
- **José Luis Díez Martín:** Group director.
- **Nieves Dorado Herrero:** Predoctoral.
- **Cristina Encinas Rodríguez:** Predoctoral.
- **Noemí Fernández Escalada:** Predoctoral.
- **Patricia Font López:** Predoctoral.
- **Ana María García García:** Data management.
- **Jorge Gayoso Cruz:** Predoctoral.
- **Marta Hernández Martín:** Data management.
- **Mi Kwon:** Predoctoral.
- **Carolina Martínez Laperche:** Postdoctoral.
- **Francisco Javier Menárguez Palanca:** Postdoctoral.
- **Cristina Muñoz Martínez:** Data management.
- **Santiago Osorio Prendes:** Predoctoral.
- **Cristina Pascual Izquierdo:** Postdoctoral.
- **Ana Pérez Corral:** Postdoctoral.
- **David Serrano Simonneau:** Predoctoral.
- **Julia Suárez González:** Predoctoral.



Theses

| Doctoral student | Title | Supervisor(s) | University |
|--------------------------|--|--|--------------------------------|
| Pascual Balsalobre López | Trasplante de progenitores hematopoyéticos en pacientes VIH+ con linfoma | José Luis Díez Martín; Pilar Guallar Castillón | Universidad Autónoma de Madrid |

Research projects – Competitive calls

- Principal investigator: José Luis Díez Martín
Title: Evaluación de la reconstitución inmune después del trasplante haploidejntico de progenitores hemopoyéticos sin depleción T.
Funding body: F. Mutua Madrileña
Start date: 2012
End date: 2015
- Principal investigator: Javier Anguita Velasco
Title: Estudio de la alorreactividad KIR en el trasplante haploidejntico: valoración integral para la elección del mejor donante.
Funding body: F. Mutua Madrileña
Start date: 2013
End date: 2016
- Principal investigator: Ismael Buño Borde
Title: Proyecto FIS 2014. Valor pronóstico de un perfil genómico de riesgo para el tratamiento personalizado de complicaciones en pacientes sometidos a trasplante alogénico de progenitores hematopoyéticos.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

- Principal investigator: Jose Luis Díez Martin
Title: "Hacia la curación de la leucemia aguda mediante medicina personalizada basada en terapia celular alogénica"
Funding body: Fundación Mutua Madrileña
Start date: 2015
End date: 2018

Intellectual property

- Title: Herramienta informática para la Gestión Electrónica de la Agenda de Trasplante Hematopoyético «gesTHronica»
Registry No.: 16/2008/7735
Owner: FIBHGM
Authors: Pascual Balsalobre, Ismael Buño, José Luis Díez
- Title: Panel alloGENOMICS v1.13 – Panel de genes y regiones de interés para su aplicación en el estudio de la influencia de los polimorfismos genéticos en el desarrollo de complicaciones post-trasplante alogénico de progenitores hematopoyéticos (alo-TPH)
Registry No.: 16/2014/7306
Owner: FIBHGM
Authors: Ismael Buño, Milagros González, José Luis Diez, Jorge Gayoso, Carolina Martínez, Elena Buces, David Serrano, Pascual Balsalobre, Mi Kwon

Publications

Total Impact Factor: 61.9

- Gonzalez-Lopez TJ; Pascual C; Alvarez-Roman MT; Fernandez-Fuertes F; Sanchez-Gonzalez B; Caparros I; Jarque I; Mingot-Castellano ME; Hernandez-Rivas JA; Martin-Salces M; Solan L; Beneit P; Jimenez R; Bernat S; Andrade MM; Cortes M; Corti MJ; Perez-Crespo. *Successful discontinuation of eltrombopag after complete remission in patients with primary immune thrombocytopenia.* AMERICAN JOURNAL OF HEMATOLOGY. 2015; 90(3) E40-E43. FI: 5. Quartile: 1. (Article).

GENETIC AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCIES AND HEMATOPOIETIC STEM CELL TRANSPLANTATION

- Font P; Loscertales J; Soto C; Ricard P; Munoz-Novas C; Martin-Clavero E; Lopez-Rubio M; Garcia-Alonso L; Callejas M; Bermejo A; Benavente C; Ballessteros M; Cedena T; Calbacho M; Urbina R; Villarrubia J; Gil S; Bellon JM; *Interobserver variance in myelodysplastic syndromes with less than 5 % bone marrow blasts: unilineage vs. multilineage dysplasia and reproducibility of the threshold of 2 % blasts.* ANNALS OF HEMATOLOGY. 2015; 94(4) 565-573. IF: 3.022. Quartile: 2. (Article).
- Vallejo C; Montesinos P; Polo M; Cuevas B; Morado M; Rosell A; Xicoy B; Diez JL; Salamero O; Cedillo A; Martinez P; Rayon C. *Rabbit antithymocyte globulin versus horse antithymocyte globulin for treatment of acquired aplastic anaemia: a retrospective analysis.* ANNALS OF HEMATOLOGY. 2015; 94(6) 947-954. IF: 3.022. Quartile: 2. (Article).
- Sanchez PL; Fernandez-Santos ME; Costanza S; Climent AM; Moscoso I; Gonzalez-Nicolas MA; Sanz-Ruiz R; Rodriguez H; Kren SM; Garrido G; Escalante JL; Bermejo J. *Acellular human heart matrix: A critical step toward whole heart grafts.* BIOMATERIALS. 2015; 61. 279-289. IF: 8.387. Quartile: 1. (Article).
- Parody R; Martino R; de la Camara R; Garcia-Noblejas A; Esquirol A; Garcia-Cadenas I; Villaescusa T; Caballero D; Rovira M; Fernandez-Aviles F; Marquez-Malaver FJ; Espigado I; Castilla-Llorente C; Heras I; Cabero MA; Cabrera JR; Barba P; Valcarcel D; Sanc. *Fungal and viral infections after allogeneic hematopoietic transplantation from unrelated donors in adults: improving outcomes over time.* BONE MARROW TRANSPLANTATION. 2015; 50(2) 274-281. IF: 3.636. Quartile: 2. (Article).
- Horstmann K; Boumendil A; Finke J; Finel H; Kanfer E; Milone G; Russell N; Bacigalupo A; Chalandron Y; Diez-Martin JL; Ifrah N; Chacon MJ; Dreger P. *Second allo-SCT in patients with lymphoma relapse after a first allogeneic transplantation. A retrospective study of the EBMT Lymphoma Working Party.* BONE MARROW TRANSPLANTATION. 2015; 50(6) 790-794. IF: 3.636. Quartile: 2. (Article).
- Gonzalez-Porras JR; Mingot-Castellano ME; Andrade MM; Alonso R; Caparros I; Arribalzaga MC; Fernandez-Fuertes F; Cortti MJ; Pascual C; Sanchez-Gonzalez B; Bernat S; Fuertes-Palacio MA; Vazquez-Paganini JA; Olivera PE; Alvarez-Roman MT; Jarque I; Cortes M; M. *Use of eltrombopag after romiplostim in primary immune thrombocytopenia.* BRITISH JOURNAL OF HAEMATOLOGY. 2015; 169(1) 111-116. IF: 5.401. Quartile: 1. (Article).
- Casado LF; Garcia-Gutierrez JV; Massague I; Giraldo P; Perez-Encinas M; de Paz R; Martinez-Lopez J; Bautista G; Osorio S; Requena MJ; Palomera L; Penarrubia MJ; Calle C; Hernandez-Rivas JA; Burgaleta C; Maestro B; Garcia-Ormena N; Steegmann JL. *Switching to second-generation tyrosine kinase inhibitor improves the response and outcome of frontline imatinib-treated patients with chronic myeloid leukemia with more than 10% of BCR-ABL ratio at 3 months.* CANCER MEDICINE. 2015; 4(7) 995-1002. IF: 2.915. Quartile: 3. (Article).
- De la Fuente-Gonzalo F; Nieto JM; Ricard P; Anguita J; Martinez R; Cervera A; Villegas A; Gonzalez FA; Ropero P. *Hb Cervantes, Hb Maranon, Hb La Mancha and Hb Goya: Description of 4 new haemoglobinopathies.* CLINICAL BIOCHEMISTRY. 2015; 48(10-11) 662-667. IF: 2.382. Quartile: 2. (Article).
- Valerio M; Munoz P; Rodriguez CG; Caliz B; Padilla B; Fernandez-Cruz A; Sanchez-Somolinos M; Gijon P; Peral J. *Antifungal stewardship in a tertiary-care institution: a bedside intervention.* Clinical microbiology and infection. 2015; 21(5) -9. IF: 4.575. Quartile: 1. (Article).
- Martinez-Laperche C; Noriega V; Kwon M; Balsalobre P; Gonzalez-Rivera M; Serrano D; Anguita J; Gayoso J. *Achievement of early complete donor chimerism in CD25(+)-activated leukocytes is a strong predictor of the development of graft-versus-host-disease after stem cell transplantation.* EXPERIMENTAL HEMATOLOGY. 2015; 43(1) 4-13. IF: 2.303. Quartile: 3. (Article).
- Olmedo C; Buno I; Pla R; Lomba I; Bardinet T; Banares R. *Managing a health research institute: towards research excellence through continuous improvement.* Gaceta Sanitaria. 2015; 29(6) 458-460. IF: 1.509. Quartile: 3. (Article).
- de Lorenzo-Pinto A; Garcia-Sanchez R; Izquierdo CP; Duran-Garcia ME; Castuera-Gil AI; Andueza-Lillo JA; Sanjurjo-Saez M. *Impact of the endorse study results on thromboprophylaxis prescribing patterns in medical patients attending the Emergency Department.* INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. 2015; 69(1) 81-86. IF: 2.226. Quartile: 1. (Article).

- Sanchez-Castro J; Marco-Betes V; Gomez-Arbones X; Garcia-Cerecedo T; Lopez R; Talavera E; Fernandez-Ruiz S; Adema V; Marugan I; Luno E; Sanzo C; Vallespi T; Arenillas L; Marco-Buades J; Batlle A; Buno I; Martin-Ramos ML; Blazquez-Rios B; Collado-Nieto R. *Fluorescence in situ hybridization of TP53 for the detection of chromosome 17 abnormalities in myelodysplastic syndromes.* LEUKEMIA & LYMPHOMA. 2015; 56(11) 3183-3188. IF: 3.093. Quartile: 2. (Article).
- Ferra C; Sanz J; Diaz-Perez MA; Morgades M; Gayoso J; Cabrera JR; Villaescusa T; Sampol MA; Fernandez-Aviles F; Solano C; Ortin M; Duarte R; Cuesta M; Heras I; de la Serna J; Moraleda JM; Barrenetxea C; Gonzalez-Vicent M; Sanz G; Ribera JM. *Outcome of graft failure after allogeneic stem cell transplant: study of 89 patients.* LEUKEMIA & LYMPHOMA. 2015; 56(3) 656-662. IF: 3.093. Quartile: 2. (Article).
- Gonzalez-Lopez TJ; Sanchez-Gonzalez B; Pascual C; Arefi M; de Cabo E; Alonso A; Martin-Salces M; Jimenez-Barcenas R; Calbacho M; Galan P; Barez A; Gonzalez-Porras JR. *Sustained response after discontinuation of short-and medium-term treatment with eltrombopag in patients with immune thrombocytopenia.* PLATELETS. 2015; 26(1) 83-86. IF: 3.213. Quartile: 2. (Article).
- Noriega V; Martinez-Laperche C; Buces E; Pion M; Sanchez-Hernandez N; Martin-Antonio B; Guillem V; Bosch-Vizcaya A; Bento L; Gonzalez-Rivera M; Balsalobre P. *The Genotype of the Donor for the (GT)(n) Polymorphism in the Promoter/Enhancer of FOXP3 Is Associated with the Development of Severe Acute GVHD but Does Not Affect the GVL Effect after Myeloablative HLA-Identical Allogeneic Stem Cell Transplantation.* PLOS ONE. 2015; 10(10). IF: 3.057. Quartile: 1. (Article).
- Martino R; Bautista G; Parody R; Garcia I; Esquirol A; Rovira M; Cabrera JR; Regidor C; Fores R; Garcia-Marco JA; Serrano D; Barba P; Heras I; Marquez-Malaver FJ; Sanchez-Ortega I; Duarte R; Saavedra S; Sierra J; Vazquez L. *Severe infections after single umbilical cord blood transplantation in adults with or without the co-infusion of CD34(+) cells from a third-party donor: results of a multicenter study from the Grupo Espanol de Trasplante Hematopoyetico (GETH).* TRANSPLANT INFECTIOUS DISEASE. 2015; 17(2) 221-233. IF: 1.459. Quartile: 3. (Article).

Publications in journals not indexed in Journal Citation Reports:

- Olmedo C; Pla R; Bellon J M; Bardinet T; Buno I; Banares R. *Hospital biomedical research through the satisfaction of a Health Research Institute professionals.* Revista de calidad asistencial : organo de la Sociedad Espanola de Calidad Asistencial. (Article).

Letters (not included in the impact factor):

- Bosch-Vizcaya A; Rodriguez-Romanos R; Nieto JB; de la Camara R; Brunet S; Vallejo C; Osca-Gelis G; Martinez-Laperche C; Buno I; Urbano-Ispizua A; Gonzalez M; Jimenez-Velasco A; Gallardo D. *Effect of mismatching for mHA UTA2-1 on clinical outcome after HLA-identical sibling donor allo-SCT.* BONE MARROW TRANSPLANTATION. 2015; 50(2) 298-300. IF: 3.636. Quartile: 2. (Letter).
- Adema V; Larrayoz MJ; Calasanz MJ; Palomo L; Patino-Garcia A; Agirre X; Hernandez-Rivas JM; Lumbreiras E; Buno I; Martinez-Laperche C; Mallo M; Garcia O; Alvarez S; Blazquez B; Cervera J; Luno E; Valiente A; Vallespi MT; Arenillas L; Collado R; Per. *Correlation of myelodysplastic syndromes with i(17)(q10) and TP53 and SETBP1 mutations.* BRITISH JOURNAL OF HAEMATOLOGY. 2015; 171(1) 137-141. IF: 5.401. Quartile: 1. (Letter).
- Barragan E; Chillon MC; Castello-Cros R; Marcotegui N; Prieto MI; Hoyos M; Pippa R; Llop M; Etxabe A; Cervera J; Rodriguez G; Buno I; Rifon J; Sierra J; Gonzalez M; Calasanz MJ; Sanz MA; Odero MD. *CIP2A high expression is a poor prognostic factor in normal karyotype acute myeloid leukemia.* HAEMATOLOGICA. 2015; 100(5). IF: 6.671. Quartile: 1. (Letter).
- Onaindia A; Gomez S; Piris-Villaespresa M; Martinez-Laperche C; Cereceda L; Montes-Moreno S; Batlle A; de Villambrosia SG; Pollan M; Martin-Acosta P; Gonzalez-Rincon J; Menarguez J; Alves J; Rodriguez-Pinilla SM; Garcia JF; Mollejo M; Fraga M; Garc. *Chronic lymphocytic leukemia cells in lymph nodes show frequent NOTCH1 activation.* HAEMATOLOGICA. 2015; 100(5). IF: 6.671. Quartile: 1. (Letter).

GENETIC AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCIES AND HEMATOPOIETIC STEM CELL TRANSPLANTATION

| | No. | IF |
|---|-----|------|
| Own publications | 3 | 8.4 |
| Joint publications | 15 | 53.5 |
| First-decile publications | 1 | 8.4 |
| First-quartile publications | 6 | 28.6 |
| Second-quartile publications | 8 | 25.1 |
| Third-quartile publications | 4 | 8.2 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 4 | - |
| Total publications (including publications without IF) | 22 | 61.9 |



Surgical oncology

Group director: LUIS GONZÁLEZ BAYÓN

Type: Emerging

Research programs and lines

P1: Treatment of malignant peritoneal disease (MPD)

- ▶ L1: Natural history of MPD and palliative treatment.
- ▶ L2: Imaging study of MPD (funded study).
- ▶ L3. Pharmacokinetics of peritoneally administered drugs and delivery of systemic drugs to the peritoneum.

P2: Treatment of MPD for cure: cytoreduction + hyperthermic intraoperative intraperitoneal chemotherapy (HIPEC)

- ▶ L1: Morbidity and mortality of the procedure.
- ▶ L2: Overall and disease-free survival in different tumor types.

P3: Treatment of gastric cancer with carcinomatosis using preoperative bidirectional chemotherapy and cytoreduction + HIPEC

- ▶ L1: Morbidity and mortality of the procedure.
- ▶ L2: Overall and disease-free survival.

Group members

- Luis González Bayón: Group director.
- Wenceslao Vásquez Jiménez: Postdoctoral.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|---------------------------|---|---|------------|
| Alberto Parente Hernandez | Comparación de tratamientos endourológicos para la estenosis pieloureteral congénita en el niño | Luis González Bayón, Felipe Herranz, Juan Carlos de Agustín | UCM |

Publications

Total Impact Factor: 9.6

Publications in journals with impact factor indexed in Journal Citation Reports:

- Sole CV; Calvo FA; Lizarraga S; Gonzalez-Bayon L; Segundo CGS; Desco M; Garcia-Sabrido JL. Single-Institution Multidisciplinary Management of Loco-regional Oligo-Recurrent Pelvic Malignancies: Long-Term Outcome Analysis. ANNALS OF SURGICAL ONCOLOGY. 2015; 22. S1247-S1255. IF: 3.655. Quartile: 1. (Article).
- Cebolla ES; Villaronga LRB; Munoz SC; Taboada AGM; Sabrido JLG. Thyroid metastasis of a colonic adenocarcinoma. CIRUGIA ESPANOLA. 2015; 93(1) 43-44. FI: 1. Quartile: 3. (Editorial Material).

- Sole CV; Calvo FA; Lizarraga S; Gonzalez-Bayon L; Garcia-Sabrido JL. Intraoperative electron-beam radiation therapy with or without external-beam radiotherapy in the management of paraaortic lymph-node oligometastases from gynecological malignancies. CLINICAL & TRANSLATIONAL ONCOLOGY. 2015; 17(11) 910-916. IF: 2.075. Quartile: 3. (Article).
- Sole CV; Calvo FA; Atahualpa F; Berlin A; Herranz R; Gonzalez-Bayon L; Garcia-Sabrido JL. Role of radiotherapy in the chemotherapy-containing multidisciplinary management of patients with resected pancreatic adenocarcinoma. STRAHLENTHERAPIE UND ONKOLOGIE. 2015; 191(1) 17-25. IF: 2.898. Quartile: 1. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 4 | 9.6 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 1 | 3.7 |
| First-quartile publications | 2 | 6.6 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 3.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 4 | 9.6 |

Hematology-oncology in pediatric patients

Group director: ELENA CELA DE JULIÁN

Type: Associated clinical

Research lines

- ▶ L1: Program for psychosocial care and quality of life in pediatric patients with hematologic malignancy.
- ▶ L2: Study of phosphorus and calcium metabolism in patients with sickle cell anemia.
- ▶ L3: Spanish Pediatric Hemoglobinopathy Registry.
- ▶ L4: Efficacy of the meningococcus B vaccine against sickle cell anemia.
- ▶ L5: Translational study of hepatoblastoma (FIS PI13/02340).
- ▶ L6: Multidisciplinary integrated follow-up of Fanconi aplastic anemia.
- ▶ L7: Bone marrow transplant in patients with hemoglobinopathy.
- ▶ L8: SIOP Wilms protocol.
- ▶ L9: Intramyocardial stem cells. THABY trial.
- ▶ L10: SIOP Neuroblastoma protocol.
- ▶ L11: SEHOP-PETHEMA infant leukemia.
- ▶ L12: Recurrent sarcoma in children.

Group members

- **Cristina Beléndez Bieler:** Predoctoral.
- **Elena Cela de Julián:** Group director.
- **María García Morín:** Predoctoral.
- **Carmen Garrido Colino:** Postdoctoral.
- **Jorge Huerta Aragoneses:** Predoctoral.
- **Cristina Mata Fernández:** Postdoctoral.
- **Gabriela Medín Block:** Support technician.
- **Rosario Zamarro Arranz:** Support technician.

HEMATOLOGY-ONCOLOGY IN PEDIATRIC PATIENTS

Clinical practice guidelines

| Authors | Title | Publication |
|----------------------|---|------------------------|
| Elena Cela de Julián | Guía de práctica clínica Talasemia en pediatría | ISBN 978-84-938864-9-3 |

Publications

Total Impact Factor: 2.7

Publications in journals with impact factor indexed in Journal Citation Reports:

- Rodriguez-Moldes B; Carbayo AJ; Sanchez B; Fernandez M; Gari M; Fernandez MC; Alvarez J; Garcia A; Cela E. *Primary care follow-up of newborns with sickle cell disease detected in neonatal screening in the Community of Madrid.* ANALES DE PEDIATRIA. 2015; 82(4) 222-227. IF: 0.773. Quartile: 4. (Article).
- Colino CG; Bieler CB; Diaz MP; de Julian EC. *Evaluation of bone mineral density in children with sickle cell disease.* ANALES DE PEDIATRIA. 2015; 82(4) 216-221. IF: 0.773. Quartile: 4. (Article).

- del Castillo BT; Mata-Fernandez C; Soria VJR; Blanco VP; Loughlin G; Campos-Dominguez M. *Self-Healing Extranodal Cutaneous Rosai-Dorfman in a Child.* PEDIATRIC DERMATOLOGY. 2015; 32(6) e249-e250. IF: 1.163. Quartile: 3. (Article).

| | No. | IF |
|---|----------|------------|
| Own publications | 2 | 1.5 |
| Joint publications | 1 | 1.2 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 1.2 |
| Fourth-quartile publications | 2 | 1.5 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 3 | 2.7 |

Angiogenesis in brain tumors

Group director: JUAN CARLOS MARTÍNEZ MONTERO

Type: Associated Clinical

Research programs and lines

P1: Angiogenesis in brain tumors

- ▶ L1: Alterations in the Delta ligand like4/Notch1 pathway in oligodendroglial tumors.
- ▶ L2: Alterations in the Delta ligand like4/Notch1 pathway in human tumors and reactive non-tumor-like lesions.

Group members

- **Lucía Hernández Pérez:** Predoctoral.
- **Juan Carlos Martínez Montero:** Senior researcher.
- **Socorro María Rodríguez Pinilla:** Predoctoral.
- **Emilio Salinero Paniagua:** Postdoctoral.
- **María del Val Toledo Alonso:** Predoctoral.
- **María Ángeles Vaz Fernández:** Predoctoral.

Research projects – Competitive calls

- Principal investigator: Juan Carlos Martínez Montero
Title: Análisis de la metilación de promotores de los genes p16/INK4a, p14/ARF, MGMT y receptor de la progesterona, en meningiomas benignos recidivantes y no recidivantes. Identificación de alteraciones epigenéticas ligadas a la recurrencia tumoral.
Funding body: F. Mutua Madrileña
Start date: 2012
End date: 2015

Publications

Total Impact Factor: 0.0

Publications in journals without impact factor indexed in Journal Citation Reports:

- Ruiz-Juretschke F; Iza B; Scola-Pliego E; Poletti D; Salinero E. *Coincidental pituitary adenoma and planum sphenoidale meningioma mimicking a single tumor.* Endocrinologia y Nutricion. 2015; 62(6) 292-294. (Editorial Material).

| | No. | IF |
|---|----------|------------|
| Own publications | 0 | 0.0 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 1 | 0.0 |

AREA 7

Area coordinator:
Rafael Bañares Cañizares

Systemic diseases and organ transplantation

The Area of Systemic Diseases comprises a broad spectrum of mainly clinical research groups. Its most fruitful research lines range from acute and chronic kidney failure to the biology of aging, covering fields such as the pathophysiology of liver and digestive diseases and abdominal organ transplantation. In addition, some of the groups in the Area participate in cooperative research structures funded by the ISCIII, such as the Centro de Investigación Biomédica en Red: Enfermedades Hepáticas y Digestivas (CIBEREHD [*Networked Center for Biomedical Research in Liver and Digestive Diseases*]) and have made a relevant contribution to the development and implementation of clinical practice guidelines or participate in and lead international cooperative academic projects, especially in South America. Similarly, some groups in the Area support European technology projects investigating home application of diagnostic tools and treatment for elderly patients.

The Area of *Systemic Diseases* is clearly heterogeneous, although several specific axes of activity can be defined.

The first is the clear increase in scientific output and its quality, with preference for emerging groups. The second involves promotion of translational research, by bringing research support platforms and services to clinical groups. Rapid solutions to research problems can only be found through a gradual process of addressing clinical issues in the laboratory. In the third axis, appropriate support and advice enable scaled application of researchers and groups for competitive funding calls, with the aim not only of obtaining financial support but also of addressing evaluations in an enriching competitive environment. Lastly, the Area aims to develop objectives in undergraduate and postgraduate training with the implementation of predoctoral programs in the various groups.

Research lines and axes

Strategic axes

- ▶ A1: Promotion of alliances and collaborations with groups of interest.
- ▶ A2: Consolidation of research lines in the area of systemic disease.
- ▶ A3: Training.
- ▶ A4: Infrastructure.

Strategic lines

Axis 1: Promotion of alliances and collaborations with groups of interest

1. Encouraging collaborations with other IISGM groups and HGUGM services

Strategic objectives:

- Strengthen collaboration with Area 2 of the IISGM.
- Strengthen collaboration with Area 6 of the IISGM.
- More active incorporation of the remaining multidisciplinary teams of HGUGM.
- Stabilize participation in the Palliative Care Unit: increased contact with primary care and the ESAD group.
- Collaborate with nononcological palliative care in the Nephrology Department and the Predialysis Unit.

2. Maintenance and development of collaborations with other research groups at regional, national, and international level

Strategic objectives:

- Increase participation in intramural and extramural cooperative studies.
- Expand collaboration on research between Europe and the USA.
- Maintain collaboration with Latin American countries.
- Evaluate the possibility of performing multicenter studies with similar groups in other hospitals and institutions in Madrid.
- Collaborate with prestigious international groups.
- Strengthen collaboration with other disciplines (eg, information technology and telecommunications engineering).
- Participate in multicenter projects in CIFRA, GEFRAM 4, and European projects.

3. Participation in decision-making committees in clinical research at regional, national, and international level

(Continued on next page)

Strategic lines (cont.)

Axis 2: Consolidation of research lines in the Area of Systemic Disease

1. Expressivity of monogenetic diseases in recessive and dominant models

Strategic objectives:

- Genotype patients from different areas of Spain.
- Investigate parameters associated with the biochemical background.
- Investigate relative expression in peripheral cells and tissues.

2. Promotion of geriatric oncology

3. Development and applicability of new technology in the care of elderly patients

Strategic objectives:

- Complete development of new technology and evaluation of its applicability and usefulness in patients.

4. Consolidation of the group's basic research area in neonatal respiration

Strategic objectives:

- Stabilize the area for the study of lung function in small newborn animal models.

5. Development of phase I and II clinical trials with cilastatin as a nephroprotective agent in patients with cancer

6. Consolidation of clinical research in COPD and in respiratory sleep disorders

Strategic objectives:

- Develop research projects in COPD.
- Become involved in multicenter SAHS projects.

7. Diversification of and increase in funding sources

Strategic objectives:

- Scale application for funding calls in the National Plan.
- Apply for private funding through competitive calls.
- Obtain funding for controlled clinical trials.
- Obtain funding for human resources.
- Compete in new international competitive calls.

(Continued on next page)

Strategic lines (cont.)

8. Maintenance and consolidation of scientific output

Strategic objectives:

- Increase the number of publications from basic science laboratories.
- Increase the number of publications in high-quality journals.
- Increase the impact factor in the Area of Systemic Diseases.

9. Development of a basic research area in nephroprotection

Axis 3: Training

1. Increase the possibilities for undergraduate and postgraduate training

Strategic objectives:

- Promote preparation of doctoral theses.
- Increase funding for predoctoral fellows.
- Develop training workshops for predoctoral fellows.

2. Development of a research line for teaching new technology in health education. Creation of an advanced medical simulation center for undergraduate and postgraduate teaching and research

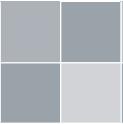
3. Improve research curricula of young specialists

4. Consolidation of a training area in neonatal noninvasive lung function

Strategic objectives:

- Organize 2 yearly courses on noninvasive lung function in newborn animals.

(Continued on next page)



Strategic lines (cont.)

Axis 4: Infrastructure

1. Consolidation of physical spaces and research equipment

Strategic objectives:

- Create a physical space for research associated with the clinical activity of the pathophysiology and natural history of liver and digestive diseases group.
- Improve the capacity and quality of biological sample storage for the research activity of the pathophysiology and natural history of liver and digestive diseases group.
- Create a physical space for the kidney preservation laboratory.
- Obtain laboratory quality certification to enable the group to provide services in the Area with the aim of self-funding.
- Create a physical space for histology and molecular biology techniques.

2. Conversion of the Nephrology Clinical Laboratory to a Functional Test Laboratory

Strategic objectives:

- Obtain ISO certification for the Functional Test Laboratory.
- Improve GLP in the Functional Test Laboratory.

Groups in AREA 7

Systemic diseases and organ transplantation

- ▶ Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant.
Renal pathophysiology
- ▶ Pathophysiology and natural history of liver and digestive diseases
- ▶ Diseases of the critically ill child
- ▶ Pathophysiology and clinical aspects of COPD
- ▶ Regenerative medicine in plastic surgery
- ▶ Experimental kidney transplant
- ▶ Pediatric endocrinology
- ▶ Iron metabolism disorders
- ▶ Emergency medicine
- ▶ Pathophysiology, disease course, and therapeutic strategies in chronic respiratory insufficiency and sleep-associated respiratory disorders
- ▶ Anesthesia in chest surgery
- ▶ Regenerative medicine and systems development: cardiovascular and osteochondral
- ▶ Peritransplant evaluation of the liver
- ▶ Perianesthetic evaluation
- ▶ Anesthesia, toxins, and arrhythmias
- ▶ Biopathology of aging
- ▶ Neonatal and developmental pathophysiology
- ▶ Pediatric endocrinology and hereditary diseases
- ▶ Artificial circulation laboratory
- ▶ Evaluation of health services and clinical epidemiology
- ▶ Hospital pharmacy and pharmacogenomics
- ▶ Clinical nutrition
- ▶ Vascular pathophysiology and pharmacology

Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology

Group director: **JOSÉ LUÑO FERNÁNDEZ**

Type: **Consolidated**

Research lines

- ▶ L1: Prevention and treatment of chronic kidney disease.
- ▶ L2: Evaluation of antiproteinuric therapy in autoimmune diseases.
- ▶ L3: New dialysis techniques.
- ▶ L4: Kidney transplantation.
- ▶ L5: Study of toxic and nontoxic acute kidney failure.
- ▶ L6: Nephroprotection.
- ▶ L7: Therapeutic targets in acute kidney failure: cholesterol rafts.
- ▶ L8: Study of palliative care for uremic patients who are not candidates for dialysis (home-based).
- ▶ L9: Cardiovascular risk in kidney disease.
- ▶ L10: Hyperuricemia, vascular and renal damage.
- ▶ L11: Diabetic nephropathy.

Group members

- **Soraya Abad Estébanez:** Predoctoral.
- **Fernando Anaya Fernández-Lomana:** Senior researcher.
- **Soledad García de Vinuesa Rojas:** Senior researcher.
- **María Ángeles Goicoechea Diezhondino:** Senior researcher.
- **María Ángeles González-Nicolás González:** Laboratory technician/Predoctoral.
- **Alberto Lázaro Fernández:** Postdoctoral.
- **José Antonio Lázaro Manero:** Postdoctoral.
- **Juan Manuel López Gómez:** Senior researcher.
- **José Luño Fernández:** Group director.
- **Rosa Melero Martín:** Predoctoral.
- **Marina Mojena Sánchez:** Postdoctoral.
- **Ana María Pérez de José:** Postdoctoral.
- **Manuel Antonio Rengel Aranda:** Postdoctoral.
- **María Luisa Rodríguez Ferrero:** Predoctoral.
- **Patrocinio Rodríguez Benítez:** Predoctoral.
- **Alberto Tejedor Jorge:** Senior researcher.
- **Marta Tejedor Bravo:** Predoctoral.
- **María Almudena Vega Martínez:** Postdoctoral.
- **Úrsula Verdalles Guzmán:** Predoctoral.
- **Eduardo Verde Moreno:** Predoctoral.

INFLAMMATION AND VASCULAR DAMAGE IN CHRONIC KIDNEY DISEASE, DIALYSIS, AND KIDNEY TRANSPLANT. RENAL PATHOPHYSIOLOGY

Research projects – Competitive calls

- Principal investigator: Alberto Tejedor Jorge
Title: Utilización de modelos animales y celulares para caracterizar el fracaso renal agudo y multiorgánico.
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015
- Principal investigator: Alberto Lázaro Fernández
Title: Bloquear las balsas de colesterol del borde en cepillo del túbulo proximal previene el fallo renal asociado al paludismo y limita la propagación del fallo renal séptico.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Theses

| Doctoral student | Title | Supervisor(s) | University |
|----------------------|--|-------------------------|------------|
| Eduardo Verde Moreno | Valor pronostico de las arritmias supraventriculares en hemodiálisis | Juan Manuel Lopez Gomez | UCM |

Patents

- Title: Uso de la cilastatina para reducir la nefrotoxicidad en distintos compuestos
Reference: PCT/ES2008/070137 (Family with 22 patents)
Owner: FIBHGM
Inventors: Alberto Tejedor Jorge, Alberto Lázaro Fernández, Sonia Camaña Páez, Ana María Torres Redondo, José Antonio Lázaro Manero, Manuela Castilla Barba, María del Carmen de Lucas Collantes

- Title: Método de Diagnóstico de Insuficiencia Renal
Reference: P201131506
Owner: FIBHGM, UAH, Fundación PUIGVERT
Inventors: Ricardo Bosch Martínez, Arancha Ortega de Mues, Jordi Bover San Juan, Alberto Lázaro Fernández, Alberto Tejedor Jorge

Publications

Total impact factor: 46.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Goicoechea M; de Vinuesa SG; Verdalles U; Verde E; Macias N; Santos A; de Jose AP; Cedeno S; Linares T; Luno J. *Allopurinol and Progression of CKD and Cardiovascular Events: Long-term Follow-up of a Randomized Clinical Trial.* AMERICAN JOURNAL OF KIDNEY DISEASES. 2015; 65(4) 543-549. IF: 6.269. Quartile: 1. (Article).
- Tawakol A; Singh P; Mojena M; Pimentel-Santillana M; Emami H; MacNabb M; Rudd JHF; Narula J; Enriquez JA; Traves PG; Fernandez-Velasco M; Bartrons R; Martin-Sanz P; Fayad ZA; Tejedor A; Bosca L. *HIF-1 alpha and PFKB3 Mediate a Tight Relationship Between Proinflammatory Activation and Aerobic Metabolism in Atherosclerotic Macrophages.* ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY. 2015; 35(6) 1463-1471. IF: 5.969. Quartile: 1. (Article).
- Humanes B; Jado JC; Camano S; Lopez-Parra V; Torres AM; Alvarez-Sala LA; Cercenado E; Tejedor A; Lazaro A. *Protective Effects of Cilastatin against Vancomycin-Induced Nephrotoxicity.* BIOMED RESEARCH INTERNATIONAL. 2015;. IF: 2.134. Quartile: 3. (Article).
- Quiroga B; Vega A; Rivera F; Lopez-Gomez JM. *Crescentic glomerulonephritis: data from the Spanish Glomerulonephritis Registry.* INTERNAL MEDICINE JOURNAL. 2015; 45(5) 557-562. IF: 1.526. Quartile: 2. (Article).
- Carrillo IG; Demelo-Rodriguez P; Ferrero MLR; Anaya F. *Double filtration plasmapheresis in the treatment of pancreatitis due to severe hypertriglyceridemia.* JOURNAL OF CLINICAL LIPIDOLOGY. 2015; 9(5) 698-702. IF: 4.906. Quartile: 1. (Article).

- Vega A; Ruiz C; Abad S; Quiroga B; Velazquez K; Ampuero J; Lopez-Gomez JM. *Body Composition Affects Urea Distribution Volume Estimated by Watson's Formula.* JOURNAL OF RENAL NUTRITION. 2015; 25(5) 420-425. IF: 2.06. Quartile: 2. (Article).
 - Pulido-Perez A; Rodriguez-Soria VJ; Horcajada-Reales C; Melero R; Suarez-Fernandez R. *Creeping eruption.* JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 2015; 73(2) E45-U279. IF: 5.621. Quartile: 1. (Editorial Material).
 - Yuste C; Quiroga B; de Vinuesa SG; Goicoechea MA; Barraca D; Verdalles U; Luno J. *The effect of some medications given to CKD patients on vitamin D levels.* NEFROLOGIA. 2015; 35(2) 150-156. IF: 1.207. Quartile: 4. (Article).
 - Verdalles U; de Vinuesa SG; Goicoechea M; Macias N; Santos A; de Jose AP; Verde E; Yuste C; Luno J. *Management of resistant hypertension: Aldosterone antagonists or intensification of diuretic therapy?.* NEPHROLOGY. 2015; 20(8) 567-571. IF: 1.796. Quartile: 3. (Article).
 - Caro J; Gutierrez-Solis E; Rojas-Rivera J; Agraz I; Ramos N; Rabasco C; Espinosa M; Valera A; Martin M; Frutos MA; Perea L; Juarez GF; Ocana J; Arroyo D; Goicoechea M; Fernandez L; Oliet A; Hernandez Y; Romera A; Segarra A; Praga M. *Predictors of response and relapse in patients with idiopathic membranous nephropathy treated with tacrolimus.* NEPHROLOGY DIALYSIS TRANSPLANTATION. 2015; 30(3) 467-474. IF: 4.085. Quartile: 1. (Article).
 - Quiroga B; Galan I; de Vinuesa SG; Goicoechea M; Verdalles U; Luno J. *Interarm systolic blood pressure as a predictor of cardiovascular events in patients with chronic kidney disease.* NEPHROLOGY DIALYSIS TRANSPLANTATION. 2015; 30(5) 801-806. IF: 4.085. Quartile: 1. (Article).
 - Arroyo D; Panizo N; Abad S; Vega A; Rincon A; de Jose AP; Lopez-Gomez JM. *INTRAPERITONEAL FLUID OVERESTIMATES HYDRATION STATUS ASSESSMENT BY BIOIMPEDANCE SPECTROSCOPY.* PERITONEAL DIALYSIS INTERNATIONAL. 2015; 35(1) 85-89. IF: 1.298. Quartile: 3. (Article).
 - Yuste C; Rubio-Navarro A; Barraca D; Aragoncillo I; Vega A; Abad S; Santos A; Macias N; Mahillo I; Gutierrez E; Praga M; Egido J; Lopez-Gomez JM; Moreno JA. *Haematuria Increases Progression of Advanced Proteinuric Kidney Disease.* PLOS ONE. 2015; 10(5). IF: 3.057. Quartile: 1. (Article).
 - Vega A; Quiroga B; Abad S; Aragoncillo I; Arroyo D; Panizo N; Lopez-Gomez JM. *Albumin Leakage in Online Hemodiafiltration, More Convective Transport, More Losses?.* THERAPEUTIC APHERESIS AND DIALYSIS. 2015; 19(3) 267-271. IF: 1.477. Quartile: 3. (Article).
 - Perez JP; Lafuente O; Sanchez-Sobrino B; Saez MJP; Garcia AF; Llamas F; Lopez-Sanchez P; Rodriguez-Ferrero ML; Zarraga S; Ramos A; Pascual J. *Kidney Transplantation With Organs From Donors After Circulatory Death Type 3: A Prospective Multicentric Spanish Study (GEODAS 3).* TRANSPLANTATION PROCEEDINGS. 2015; 47(1) 27-29. IF: 0.867. Quartile: 3. (Article).
- Letters (not included in the impact factor):**
- Arroyo D; Panizo N; Abad S; Vega A; Rincon A; de Jose AP; Lopez-Gomez JM. *Impact of the Limitations in Fluid Overload Assessment by Bioimpedance Spectroscopy.* PERITONEAL DIALYSIS INTERNATIONAL. 2015; 35(5). IF: 1.298. Quartile: 3. (Letter).
- | | No. | IF |
|---|-----|------|
| Own publications | 10 | 26.8 |
| Joint publications | 5 | 19.6 |
| First-decile publications | 4 | 22.8 |
| First-quartile publications | 7 | 34.0 |
| Second-quartile publications | 2 | 3.6 |
| Third-quartile publications | 5 | 7.6 |
| Fourth-quartile publications | 1 | 1.2 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 16 | 46.4 |

Pathophysiology and natural history of liver and digestive diseases

Group director: RAFAEL BAÑARES CAÑIZARES

Type: Consolidated

Programs and research lines

P1: Complications of cirrhosis: natural history of liver cirrhosis

- ▶ L1: Pharmacological treatment of portal hypertension.
- ▶ L2: Hepatic encephalopathy: molecular bases and mechanisms.
- ▶ L3: Prognostic influence of measurement of the hepatic venous pressure gradient.
- ▶ L4: Pathophysiology of portal hypertension. Modulation of bacterial translocation.
- ▶ L5: Acute chronic liver failure: artificial liver support.
- ▶ L6: Cardiopulmonary manifestations of advanced cirrhosis.
- ▶ L7: Anticoagulation therapy in chronic liver disease.

P2: Liver transplant

- ▶ L1: De novo autoimmune hepatitis after liver transplant.
- ▶ L2: Fibrogenesis after liver transplant. Pharmacologic modulation.
- ▶ L3: De novo tumors after liver transplant. Influence of immunosuppressive treatment.
- ▶ L4: Post-transplant infection.

P3: Pathophysiology of the intestinal barrier and mucosal inflammation

- ▶ L1: Molecular mechanisms of mucosal inflammation in human and experimental inflammatory bowel disease (rat and mouse).
- ▶ L2: Dysfunction of the intestinal barrier in systemic processes: psychosocial stress, cerebral ischemia, sepsis, liver cirrhosis.
- ▶ L3: Intestinal anti-inflammatory receptors as therapeutic targets in intestinal inflammation: PPAR γ , liver X receptor, cannabinoid receptors.
- ▶ L4: Expression and biological functions of the NOGO protein in the intestinal epithelium.

P4: Liver regeneration

- ▶ L1: Mechanisms of liver regeneration.

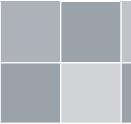
P5: Viral hepatitis

In recent years, the *Pathophysiology and natural history of liver and digestive diseases group* has carried out its research work in digestive diseases both in the clinical setting and in the laboratory. The group's basic objective is to develop applied research into the major health problems caused by digestive diseases, in terms of both prevalence and severity. Thus, end-stage liver disease and inflammatory bowel disease are its most relevant targets.

From an experimental perspective, the group has developed several animal models that enable issues arising in clinical practice to be addressed in the laboratory. Three publicly funded projects are currently under way to investigate the regulatory mechanisms of liver regeneration, to evaluate the proteins involved in regulation of intestinal permeability, and to assess the hemodynamic and biological effects of anticoagulants in cirrhosis. The group's involvement in CIBEREHD supports part of its activity and enables its continuous interaction with other units and national and international reference groups. The recent incorporation of postdoctoral researchers and a Ramón y Cajal researcher represents a considerable qualitative advance in this field.

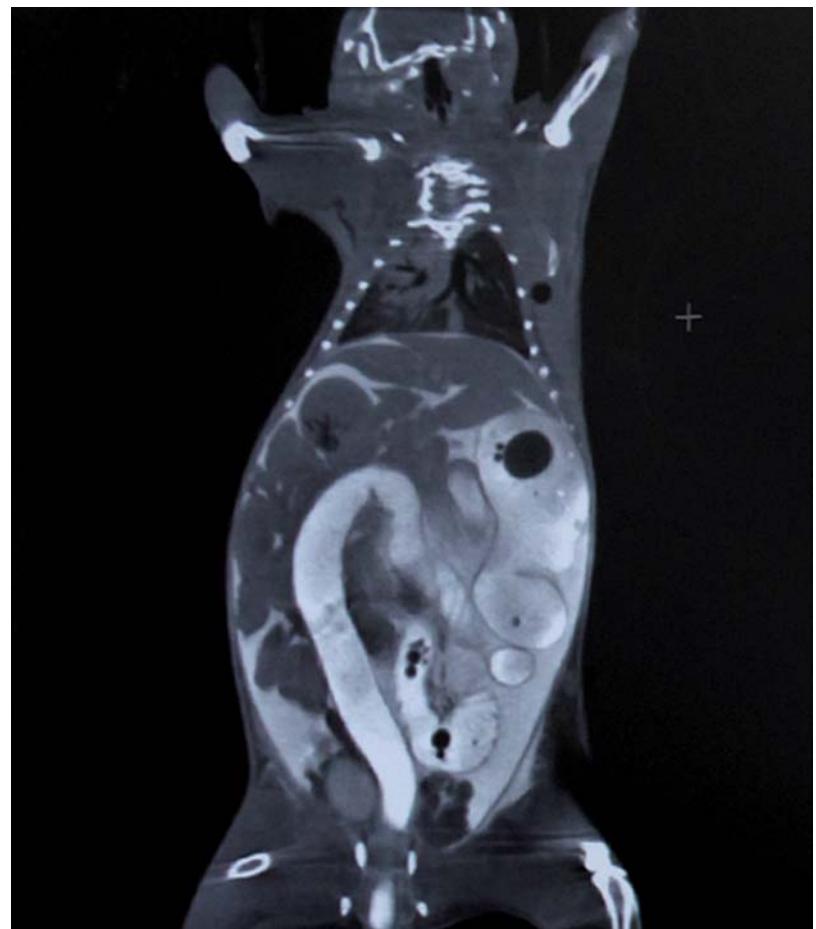
In the clinical setting, the group's activity is centered mainly on research into the pathophysiology and clinical aspects of the complications of portal hypertension and of post-transplant outcome, as well as on the natural history of inflammatory bowel disease. Globally, the group works actively both in pathophysiology studies and in proof-of-concept studies such as clinical trials, which are usually independent, with relevant clinical variables. Of note, a new line has recently been opened to study the clinical application of artificial liver support systems.

From a training perspective, the group has supervised a considerable number of doctoral theses and is an attractive option for researchers in training.



Group members

- **Rafael Bañares Cañizares:** Group director.
- **María de la Vega Catalina Rodríguez:** Predoctoral.
- **Gerardo Clemente Ricote:** Senior researcher.
- **Carolina Fernández Mena:** Predoctoral IISGM.
- **Ainhoa Fernández Yunquera:** Predoctoral.
- **Rita García Martínez:** Joan Rodés.
- **Cecilia González Asanza:** Postdoctoral.
- **Luis Ibáñez Samaniego:** Río Hortega.
- **Ignacio Marín Jiménez:** Predoctoral.
- **Ana María Matilla Peña:** Postdoctoral.
- **Luis Alberto Menchén Viso:** Senior researcher.
- **Beatriz Merino Rodríguez:** Predoctoral.
- **José Miranda Bautista:** Predoctoral.
- **Óscar Nogales Rincón:** Predoctoral.
- **José Antonio Pajares Díaz:** Predoctoral.
- **Marta Puerto Cantero:** Postdoctoral.
- **Diego Rincón Rodríguez:** Postdoctoral.
- **Juan Antonio Rodríguez Feo:** Postdoctoral.
- **Mario Romero Cristóbal:** Predoctoral.
- **Magdalena Salcedo Plaza:** Postdoctoral.
- **Javier Vaquero Martín:** Ramón y Cajal.



Research projects – Competitive calls

- Principal investigator: Javier Vaquero Martín
Title: Papel y mecanismos de la interleucina (il)-6 en la encelopatía, daño y regeneración hepáticas.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Gerardo Clemente Ricote
Title: Herramienta inteligente para una gestión farmacoterapéutica eficiente y segura: proyecto Higea.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: Luis Alberto Menchén Viso
Title: Disfunción de barrera, fibrosis y carcinogénesis asociadas a inflamación crónica en un modelo murino de enterocolitis: análisis mediante imagen y evaluación de un nuevo marcador molecular.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016
- Principal investigator: Rafael Bañares Cañizares
Title: Análisis del Entorno del Instituto de Investigación Sanitaria.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2015
- Principal investigator: Luis Alberto Menchen Viso
Title: Proyecto RETOS 2015. "Desarrollo de terapias nutricionales para el tratamiento de colitis ulcerosa mediante el uso de formulaciones simbióticas"
Funding body: MINECO
Start date: 2015
End date: 2019

Theses

| Doctoral student | Title | Supervisor(s) | University |
|-----------------------|---|----------------|------------|
| Javier Molina Infante | Caracterización fenotípica y bases moleculares de los pacientes con eosinofilia esofágica respondedora a fármacos inhibidores de la bomba de protones | Rafael Bañares | UCM |

Clinical practice guidelines

| Authors | Title | Publication |
|---|---|--|
| Molina-Infante J; Lucendo AJ; Angueira T; Rodriguez-Tellez M; Perez-Aisa A; Balboa A; Barrio J; Martin-Noguerol E; Gomez-Rodriguez BJ; Botargues-Bote JM; Gomez-Camarero J; Huerta A; Modolell I; Arino I; Herranz-Bachiller MT; Bermejo F; McNicholl AG; O'Morain C; Gisbert JP | Optimised empiric triple and concomitant therapy for Helicobacter pylori eradication in clinical practice: the OPTRICON study | ALIMENTARY PHARMACOLOGY & THERAPEUTICS |
| Gisbert JP; Romano M; Molina-Infante J; Lucendo AJ; Medina E; Modolell I; Rodriguez-Tellez M; Gomez B; Barrio J; Perona M; Ortuno J; Arino I; Dominguez-Munoz JE; Perez-Aisa A; Bermejo F; Dominguez JL; Almela P; Gomez-Camarero J; Millastre J; Martin-Noguerol E; Gravina AG; Martorano M; Miranda A; Federico A; Fernandez-Bermejo M; Angueira T; Ferrer-Barcelo L; Fernandez N; Marin AC; McNicholl AG | Two-week, high-dose proton pump inhibitor, moxifloxacin triple Helicobacter pylori therapy after failure of standard triple or non-bismuth quadruple treatments | DIGESTIVE AND LIVER DISEASE |

Publications**Total impact factor: 131.1*****Publications in journals with impact factor indexed in Journal Citation Reports:***

- Gisbert JP; Romano M; Gravina AG; Solis-Munoz P; Bermejo F; Molina-Infante J; Castro-Fernandez M; Ortuno J; Lucendo AJ; Herranz M; Modolell I; del Castillo F; Gomez J; Barrio J; Velayos B; Gomez B; Dominguez JL; Miranda A; Martorano M; Algaba A; Pabon M;. *Helicobacter pylori second-line rescue therapy with levofloxacin- and bismuth-containing quadruple therapy, after failure of standard triple or non-bismuth quadruple treatments.* ALIMENTARY PHARMACOLOGY & THERAPEUTICS. 2015; 41(8) 768-775. IF: 6.32. Quartile: 1. (Article).
- Molina-Infante J; Lucendo AJ; Angueira T; Rodriguez-Tellez M; Perez-Aisa A; Balboa A; Barrio J; Martin-Noguerol E; Gomez-Rodriguez BJ; Botargues-Bote JM; Gomez-Camarero J; Huerta A; Modolell I; Arino I; Herranz-Bachiller MT; Bermejo F; McNicholl AG; O'Mor. *Optimised empiric triple and concomitant therapy for Helicobacter pylori eradication in clinical practice: the OPTRICON study.* ALIMENTARY PHARMACOLOGY & THERAPEUTICS. 2015; 41(6) 581-589. IF: 6.32. Quartile: 1. (Article).
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- Valerio M; Munoz P; Rodriguez CG; Caliz B; Padilla B; Fernandez-Cruz A; Sanchez-Somolinos M; Gijon P; Peral J. *Antifungal stewardship in a tertiary-care institution: a bedside intervention.* Clinical microbiology and infection. 2015; 21(5) -9. IF: 4.575. Quartile: 1. (Article).
- Gisbert JP; Romano M; Molina-Infante J; Lucendo AJ; Medina E; Modolell I; Rodriguez-Tellez M; Gomez B; Barrio J; Perona M; Ortuno J; Arino I; Dominguez-Munoz JE; Perez-Aisa A; Bermejo F; Dominguez JL; Almela P; Gomez-Camarero J; Millastre J; Martin-Noguer. *Two-week, high-dose proton pump inhibitor, moxifloxacin triple Helicobacter pylori therapy after failure of standard triple or non-bismuth quadruple treatments.* DIGESTIVE AND LIVER DISEASE. 2015; 47(2) 108-113. IF: 2.719. Quartile: 3. (Article).
- Taxonera C; Barreiro-de Acosta M; Calvo M; Saro C; Bastida G; Martin-Arranz M; Gisbert JP; Garcia-Sanchez V; Marin-Jimenez I; Bermejo F; Chaparro M; Ponferrada A; Martinez-Montiel M; Pajares R; de Gracia C; Olivares D; Alba C; Mendoza JL; Fernandez-Blanco. *Infliximab Dose Escalation as an Effective Strategy for Managing Secondary Loss of Response in Ulcerative Colitis.* DIGESTIVE DISEASES AND SCIENCES. 2015; 60(10) 3075-3084. IF: 2.516. Quartile: 3. (Article).
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PATHOPHYSIOLOGY AND NATURAL HISTORY OF LIVER AND DIGESTIVE DISEASES

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- Vaquero J; Banares R. *A gut solution for hepatic encephalopathy.* HEPATOLOGY. 2015; 61(6) 2107-2109. IF: 11.711. Quartile: 1. (Editorial Material).
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- Bilbao I; Salcedo M; Gomez MA; Jimenez C; Castroagudin J; Fabregat J; Almohalla C; Herrero I; Cuervas-Mons V; Otero A; Rubin A; Miras M; Rodrigo J; Serrano T; Crespo G; De la Mata M; Bustamante J; Gonzalez-Dieguet ML; Moreno A; Narvaez I; Guilera M. *Renal function improvement in liver transplant recipients after early everolimus conversion: A clinical practice cohort study in Spain.* LIVER TRANSPLANTATION. 2015; 21(8) 1056-1065. IF: 3.951. Quartile: 1. (Article).
- Lledo JG; Sanchez AC; Rodriguez BM; Rincon ON; Asanza CG; Fernandez-Pacheco PM. *Jackhammer esophagus hypercontractile.* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(4) 234-234. IF: 1.455. Quartile: 4. (Editorial Material).
- Fernandez-Urien I; Carretero C; Gonzalez B; Pons V; Caunedo A; Valle J; Redondo-Cerezo E; Lopez-Higueras A; Valdes M; Menchen P; Fernandez P; Munoz-Navas M; Jimenez J; Herrerias JM. *Incidence, clinical outcomes, and therapeutic approaches of capsule endoscopy-related adverse events in a large study population.* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(12) 745-752. IF: 1.455. Quartile: 4. (Article).
- Klimova K; Suarez CP; Manzorro AG; Diaz JAP; Ricote GC; Alonso AH. *Long-acting octreotide (LAR) in the treatment of gastrointestinal bleeding from vascular lesions: study of cost-efficiency.* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(2) 79-88. IF: 1.455. Quartile: 4. (Article).
- Diaz-Redondo A; Miranda-Bautista J; Garcia-Lledo J; Gisbert JP; Menchen L. *The potential usefulness of human leukocyte antigen typing for celiac disease screening: A systematic review and meta-analysis.* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(7) 423-429. IF: 1.455. Quartile: 4. (Review).
- Miranda-Bautista J; Fernandez-Simon A; Perez-Sanchez I; Menchen L. *Weber-Christian disease with ileocolonic involvement successfully treated with infliximab.* WORLD JOURNAL OF GASTROENTEROLOGY. 2015; 21(17) 5417-5420. IF: 2.787. Quartile: 2. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Pajares JA; Perea J. *Multiple primary colorectal cancer: Individual or familial predisposition?* World journal of gastrointestinal oncology. 2015; 7(12) 434-44. (Review).

Publications in journals not indexed in Journal Citation Reports:

- Olmedo C; Pla R; Bellon J M; Bardinet T; Buno I; Banares R. *Hospital biomedical research through the satisfaction of a Health Research Institute professionals.* Revista de calidad asistencial : organo de la Sociedad Espanola de Calidad Asistencial. (Article).



Letters (not included in the impact factor):

- Sanchez-Conde M; Perez-Latorre L; Rincon D; Miralles P; Catalina MV; Lopez JC; Banares R; Berenguer J. *Effect of Eradication of HCV on Hepatic Venous Pressure Gradient in HIV-Infected Patients With Compensated HCV-Related Cirrhosis.* JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2015; 69(4) E142-E144. IF: 3.806. Quartile: 1. (Letter).
- Marin-Jimenez I; Gutierrez A; Hinojosa J; Ordas I; Rimola J; Torregrosa A. *Survey on the use of capsule endoscopy for patients with suspected or diagnosed Crohn's disease in Spain.* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(7) 463-464. IF: 1.455. Quartile: 4. (Letter).
- Ibanez-Samaniego L; Ochoa-Palominos A; Catalina-Rodriguez MV; Salcedo-Plaza M; Clemente-Ricote G. *Induced Pseudo-pseudoxanthoma elasticum D-penicillamine in a patient with Wilson's disease: what can the hepatologist do?* REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(3) 190-191. IF: 1.455. Quartile: 4. (Letter).

| | No. | IF |
|---|-----|-------|
| Own publications | 13 | 44.0 |
| Joint publications | 16 | 87.1 |
| First-decile publications | 9 | 80.6 |
| First-quartile publications | 13 | 100.0 |
| Second-quartile publications | 4 | 11.8 |
| Third-quartile publications | 4 | 9.3 |
| Fourth-quartile publications | 8 | 10.0 |
| Nonindexed publications/No IF | 4 | - |
| Total publications (including publications without IF) | 33 | 131.1 |

Diseases of the critically ill child

Group director: JESÚS LÓPEZ-HERCE CID

Type: Consolidated

Research lines

- ▶ L1: Cardiorespiratory arrest in infancy: experimental and clinical approaches.
- ▶ L2: Treatment of acute kidney failure in the critically ill child.
- ▶ L3: Hemodynamic monitoring, tissue perfusion, and treatment of shock.
- ▶ L4: Nutrition and digestive disease in the critically ill child.
- ▶ L5: Monitoring of sedation and analgesia in the critically ill child.
- ▶ L6: Respiratory care in the critically ill child.

The diseases of the critically ill child research group of IISGM is formed by a team of pediatricians who care for and treat critically ill children.

The group develops experimental, academic, and clinical research lines with projects that bring together translational animal experimentation, clinical research, and application of the results to teaching. The basic research lines are cardiorespiratory arrest and cardiopulmonary resuscitation, invasive and noninvasive hemodynamic monitoring, nutrition in the critically ill child, kidney failure, renal replacement therapy, and monitoring of analgesia and sedation in critically ill children.

The group's basic objective is to collaborate with other pediatric groups and groups from specialized areas to perform multicenter studies. This group is a member of the only pediatric research network funded by the Instituto Carlos III—Red de Salud Materno-infantil y del Desarrollo (Red Samid [*Mother and Child and Developmental Health Network*])—and it coordinates the Red Iberoamericana de estudio de la parada cardiorrespiratoria en la infancia (RIBEPCI [*Latin American Network for the Study of Cardiorespiratory Arrest in Infancy*]).

Group members

- **Andrés Alcaraz Romero:** Postdoctoral.
- **Amaya Bustinta Arriortúa:** Predoctoral.
- **Ángel Carrillo Álvarez:** Postdoctoral.
- **Jimena del Castillo Peral:** Predoctoral.
- **Sarah Fernández Lafever:** Río Hortega.
- **Rafael González Cortés:** Río Hortega.
- **Jorge López González:** Predoctoral.
- **Jesús López-Herce Cid:** Group director.
- **Santiago Mencía Bartolomé:** Postdoctoral.
- **César Sánchez Sánchez:** Postdoctoral.
- **Amelia Sánchez Galindo:** Predoctoral.
- **María José Santiago Lozano:** Postdoctoral.
- **María José Solana García:** Postdoctoral.
- **Javier Urbano Villaescusa:** Postdoctoral.

Research projects – Competitive calls

- Principal investigator: Jesús López-Herce Cid
Title: Efecto de la frecuencia respiratoria durante la reanimación cardiopulmonar sobre la supervivencia, hemodinámica, oxigenación, ventilación y el daño celular en un modelo animal infantil de parada cardíaca.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: María José Santiago Lozano
Title: Repercusión de las tecnonacional de investigaciones cardiovasculares de depuración extrarrenal sobre la hemodinamia y la función renal en el niño: estudio clínico y experimental.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015



- Principal investigator: Javier Urbano Villaescusa
Title: Valor de la microcirculación y de la prueba de oclusión vascular como métodos no invasivos para la monitorización de la hemorragia aguda y la propuesta al tratamiento.
Funding body: F. Mutua Madrileña
Start date: 2014
End date: 2017
- Principal investigator: Javier Urbano Villaescusa
Title: Efectos de la resucitación mediante albúmina hipertónica o gelafundina sobre los parámetros hemodinámicos, de perfusión tisular y de función renal en niños críticamente enfermos.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017

Clinical practice guidelines

| Authors | Title | Publication |
|--|---|---------------------------|
| Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D | European Resuscitation Council Guidelines for Resuscitation 2015 Section 6. Paediatric life support | RESUSCITATION |
| Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D | Paediatric Life Support (PLS) | NOTFALL & RETTUNGSMEDIZIN |
| del Aguita JG; Lopez-Messa J; Rosell-Ortiz F; Hernandez RD; del Valle MM; Sanchez-Santos L; Lopez-Herce J; Cerdá-Vila M; Roza-Alonso CL; Bernardez-Otero M | Recommendations in dispatcher-assisted bystander resuscitation from emergency call center | MEDICINA INTENSIVA |

Patents

- Title: Dispositivo, sistema y procedimiento simulador para entrenamiento de profesionales sanitarios en el manejo de pacientes críticamente enfermos que precisen procedimientos de depuración extrarrenal venovenosa continua
Reference: P201330340
Owner: FIBHGM - SERGAS
Inventor: Jesús López-Herce, Santiago Mencía, Antonio Rodríguez

Publications

Total impact factor: 36.4

Publications in journals with impact factor indexed in Journal Citation Reports:

- Marzal-Alfaro MB; Manrique-Rodriguez S; Alcaraz Romero A; Garcia San Prudencio M; Fernandez-Llamazares CM. *Systemic cytomegalovirus infection: changes in serum calcium and magnesium levels with foscarnet treatment.* Anales de pediatria. 2015; 82(1) e170-4. IF: 0.773. Quartile: 4. (Article).
- Almarza S; Bialobrzeska K; Casellas MM; Santiago MJ; Lopez-Herce J; Toledo B; Carrillo A. *Long-term outcomes of children treated with continuous renal replacement therapy.* ANALES DE PEDIATRIA. 2015; 83(6) 404-409. IF: 0.773. Quartile: 4. (Article).
- Pol PT; Galan CR; Villanueva JAM; Martinez-Camblor P; Lopez-Herce J. *Severe acute kidney injury in critically ill children: Epidemiology and prognostic factors.* ANALES DE PEDIATRIA. 2015; 83(6) 367-375. IF: 0.773. Quartile: 4. (Article).
- del Castillo BT; Lafever SNF; Sanguos CL; Sanchez LDC; da Silva MS; Cid JLH. *Evolution of non-invasive ventilation in acute bronchiolitis.* ANALES DE PEDIATRIA. 2015; 83(2) 117-122. IF: 0.773. Quartile: 4. (Article).
- Valerio M; Munoz P; Rodriguez CG; Caliz B; Padilla B; Fernandez-Cruz A; Sanchez-Somolinos M; Gijon P; Peral J. *Antifungal stewardship in a tertiary-care institution: a bedside intervention.* Clinical microbiology and infection. 2015; 21(5) -9. IF: 4.575. Quartile: 1. (Article).
- Herrero MCM; Romero AJA; Vilaplana VE; Lafever SNF; Fernandez-Llamazares CM; Valderrama EB; Lopez MV; de Castro P. *Pharmacological interaction between valproic acid and carbapenem: What about levels in pediatrics?* EUROPEAN JOURNAL OF PAEDIATRIC NEUROLOGY. 2015; 19(2) 155-161. IF: 1.923. Quartile: 2. (Article).
- Manrique-Rodriguez S; Sanchez-Galindo AC; de Lorenzo-Pinto A; Gonzalez-Vives L; Lopez-Herce J; Carrillo-Alvarez A; Sanjurjo-Saez M; Fernandez. *Implementation of smart pump technology in a paediatric intensive care unit.* HEALTH INFORMATICS JOURNAL. 2015; 21(3) 209-222. IF: 1.578. Quartile: 3. (Article).
- Solana MJ; Lopez-Herce J; Fernandez S; Gonzalez R; Urbano J; Lopez J; Bellon JM. *Assessment of pain in critically ill children. Is cutaneous conductance a reliable tool?* JOURNAL OF CRITICAL CARE. 2015; 30(3) 481-485. IF: 2.445. Quartile: 3. (Article).
- Lopez J; Botran M; Garcia A; Gonzalez R; Solana MJ; Urbano J; Fernandez SN; Sanchez C; Lopez-Herce J. *Constipation in the Critically Ill Child: Frequency and Related Factors.* JOURNAL OF PEDIATRICS. 2015; 167(4) 857. IF: 3.89. Quartile: 1. (Article).
- del Aguita JG; Lopez-Messa J; Rosell-Ortiz F; Hernandez RD; del Valle MM; Sanchez-Santos L; Lopez-Herce J; Cerdá-Vila M; Roza-Alonso CL; Bernardez-Otero M. *Recommendations in dispatcher-assisted bystander resuscitation from emergency call center.* MEDICINA INTENSIVA. 2015; 39(5) 298-302. IF: 1.193. Quartile: 4. (Article).
- Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D. *Paediatric Life Support (PLS).* NOTFALL & RETTUNGSMEDIZIN. 2015; 18(8) 932-963. IF: 0.319. Quartile: 4. (Article).
- Urbano J; Lopez J; Gonzalez R; Solana MJ; Fernandez SN; Bellon JM; Lopez-Herce J. *Measurement of Cardiac Output in Children by Pressure-Recording Analytical Method.* PEDIATRIC CARDIOLOGY. 2015; 36(2) 358-364. IF: 1.452. Quartile: 3. (Article).

- del Castillo BT; Mata-Fernandez C; Soria VJR; Blanco VP; Loughlin G; Campos-Dominguez M. *Self-Healing Extranodal Cutaneous Rosai-Dorfman in a Child*. PEDIATRIC DERMATOLOGY. 2015; 32(6) e249-e250. IF: 1.163. Quartile: 3. (Article).
- Matamoros M; Rodriguez R; Callejas A; Carranza D; Zeron H; Sanchez C; del Castillo J; Lopez-Herce J. *In-hospital Pediatric Cardiac Arrest in Honduras*. PEDIATRIC EMERGENCY CARE. 2015; 31(1) 31-35. IF: 0.923. Quartile: 3. (Article).
- Urbano J; Gonzalez R; Lopez J; Solana MJ; Bellon JM; Botran M; Garcia A; Fernandez SN; Lopez-Herce J. *Comparison of Normal Saline, Hypertonic Saline Albumin and Terlipressin plus Hypertonic Saline Albumin in an Infant Animal Model of Hypovolemic Shock*. PLOS ONE. 2015; 10(3). IF: 3.057. Quartile: 1. (Article).
- del Castillo J; Lopez-Herce J; Matamoros M; Canadas S; Rodriguez-Calvo A; Cecchetti C; Rodriguez-Nunez A; Alvarez AC. *Long-term evolution after in-hospital cardiac arrest in children: Prospective multicenter multinational study*. RESUSCITATION. 2015; 96. 126-134. IF: 5.414. Quartile: 1. (Article).
- Maconochie IK; Bingham R; Eich C; Lopez-Herce J; Rodriguez-Nunez A; Rajka T; Van de Voorde P; Zideman DA; Biarent D. *European Resuscitation Council Guidelines for Resuscitation 2015 Section 6. Paediatric life support*. RESUSCITATION. 2015; 95. 223-248. IF: 5.414. Quartile: 1. (Article).

Letters (not included in the impact factor):

- del Castillo BT; Lafever SNF; Sanguos CL; Sanchez LDC; da Silva MS; Cid JLH. *Non-invasive ventilation has changed clinical practice in bronchiolitis*. ANALES DE PEDIATRIA. 2015; 83(5) 363-364. IF: 0.773. Quartile: 4. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 10 | 20.7 |
| Joint publications | 7 | 15.8 |
| First-decile publications | 3 | 14.7 |
| First-quartile publications | 5 | 22.4 |
| Second-quartile publications | 1 | 1.9 |
| Third-quartile publications | 5 | 7.6 |
| Fourth-quartile publications | 6 | 4.6 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 18 | 36.4 |

Pathophysiology and clinical aspects of COPD

Group director: LUIS PUENTE MAESTU

Type: In process of consolidation

Research programs and lines

P1: Clinical and therapeutic aspects of COPD

- ▶ L1: Clinical drug development and nonpharmacological therapeutic interventions.
- ▶ L2: Skeletal muscle in COPD.
- ▶ L3: Surgical risk in the patient with COPD in thoracic surgery.
- ▶ L4: Epidemiology of COPD and psychosocial aspects of the disease.

P2: Clinical and therapeutic aspects of ACOS

- ▶ L1: Prevalence and management of ACOS in clinical practice.

P3: Pulmonary circulation

- ▶ L1: Pulmonary thromboembolism.
- ▶ L2: Pulmonary hypertension.

P4: Diagnostic and therapeutic bronchoscopy

- ▶ L1: Rapid bronchoscopy in the management of nosocomial pneumonia.
- ▶ L2: Effects of bronchial thermoplasty in asthma.

Group members

- Paola Benedetti: Predoctoral.
- María Jesús Chillón Martín: Postdoctoral.
- Miguel Javier de Miguel Díez: Senior research.
- Marta Fuentes Alonso: Predoctoral.
- Julia García de Pedro: Postdoctoral.
- Fernando Pedraza Serrano: Predoctoral.
- Luis Puente Maestu: Group director.
- Rosa María Rojas Moreno-Tomé: Nurse.
- Leonor Sánchez García: Nurse.
- Gema Sánchez Muñoz: Predoctoral.
- Pilar Sanz Sanz: Predoctoral.

Research projects – Competitive calls

- Principal investigator: Luis Puente Maestu
Title: Proyecto FIS 2012. Estudio aleatorio, controlado de eficacia y seguridad del uso de CPAP en el postoperatorio inmediato de resección pulmonar como profilaxis de complicaciones respiratorias.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015

Clinical practice guidelines

| Authors | Title | Publication |
|---|--|---|
| Barreiro E, Bustamante V, Cejudo P, Gálvez JB, Gea J, de Lucas P, Martínez-Llorens J, Ortega F, Puente-Maestu L, Roca J, Rodríguez-González Moro JM | Guidelines for the evaluation and treatment of muscle dysfunction in patients. With chronic obstructive pulmonary disease | Arch Bronconeumol. 2015. Aug;51(8):384-95. doi: 10.1016/j.arbres.2015.04.011. Epub 2015 Jun 10. English, Spanish. PubMed PMID: 26072153 |
| Puente-Maestu L | Technical Document on the "Use Of Exercise Testing In The Evaluation Of Interventional Efficacy: An Official Ers Statement | |

Publications

Total impact factor: 19.5

Publications in journals with impact factor indexed in Journal Citation Reports:

- Barreiro E; Bustamante V; Cejudo P; Gálvez JB; Gea J; de Lucas P; Martínez-Llorens J; Ortega F; Puente-Maestu L; Roca J; Moro JMRG. *Guidelines for the Evaluation and Treatment of Muscle Dysfunction in Patients With Chronic Obstructive Pulmonary Disease.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(8) 384-395. IF: 1.771. Quartile: 3. (Article).

- Castillejo EO; Ramos PDL; Martin SL; Barrios PR; Rodriguez PR; Caicedo LM; Cano JMB; Gonzalez-Moro JMR. *Noninvasive Mechanical Ventilation in Patients with Obesity Hypoventilation Syndrome. Long-term Outcome and Prognostic Factors.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(2) 61-68. IF: 1.771. Quartile: 3. (Article).
- de Miguel-Diez J; Jimenez-Garcia R; Hernandez-Barrera V; Carrasco-Garrido P; Bueno H; Puente-Maestu L; Jimenez-Trujillo I; Alvaro-Meca A; Esteban-Hernandez J; de Andres AL. *Time trends in coronary revascularization procedures among people with COPD: analysis of the Spanish national hospital discharge data (2001-2011).* INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. 2015; 10. IF: 3.046. Quartile: 2. (Article).
- Guijarro R; Trujillo-Santos J; Bernal-Lopez MR; de Miguel-Diez J; Villalobos A; Salazar C; Fernandez-Fernandez R; Guijarro-Contreras A; Gomez-Huelgas R; Montreal M. *Trend and seasonality in hospitalizations for pulmonary embolism: a time-series analysis.* JOURNAL OF THROMBOSIS AND HAEMOSTASIS. 2015; 13(1) 23-30. IF: 5.565. Quartile: 1. (Article).
- Diez JD; Garcia RJ; Barrera VH; Maestu LP; Gonzalez MID; Bailon MM; Garrido PC; de Andres AL. *Trends in Self-Rated Health Status and Health Services Use in COPD Patients (2006-2012). A Spanish Population-Based Survey.* LUNG. 2015; 193(1) 53-62. IF: 2. Quartile: 3. (Article).
- Munoz-Rivas N; Mendez-Bailon M; Hernandez-Barrera V; de Miguel-Yanes JM; Jimenez-Garcia R; Esteban-Hernandez J; Jimenez-Trujillo I; Alvaro-Meca A; Carrasco-Garrido P; de Miguel-Diez J; Lopez-de-Andres A. *Time Trends in Ischemic Stroke among Type 2 Diabetic and Non-Diabetic Patients: Analysis of the Spanish National Hospital Discharge Data (2003-2012).* PLOS ONE. 2015; 10(12). IF: 3.057. Quartile: 1. (Article).
- de Miguel-Diez J; Carrasco-Garrido P; Jimenez-Garcia R; Puente-Maestu L; Hernandez-Barrera V; de Andres AL. *Obstructive sleep apnea among hospitalized patients in Spain, analysis of hospital discharge data 2008-2012.* SLEEP AND BREATHING. 2015; 19(3) 841-848. IF: 2.332. Quartile: 2. (Article).

Letters (not included in the impact factor):

- Vazquez JH; Diez JD; Camarero CD. *Partial Anomalous Pulmonary Venous Connection With Pulmonary Hypertension.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(3) 153-154. IF: 1.771. Quartile: 3. (Letter).
- Castillejo EO; Ramos PD; Barrios PR; Martin SL; Rodriguez PR; Caicedo LM; Cano JMB; Gonzalez-Moro JMR. *Mortality in obesity-hypoventilation syndrome and prognostic risk factors.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(6) 304-305. IF: 1.771. Quartile: 3. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 4 | 9.1 |
| Joint publications | 3 | 10.4 |
| First-decile publications | 1 | 5.6 |
| First-quartile publications | 2 | 8.6 |
| Second-quartile publications | 2 | 5.4 |
| Third-quartile publications | 3 | 5.5 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 9 | 19,5 |

Regenerative medicine in plastic surgery

Group directors: ROSA M^a PÉREZ CANO and JOSÉ MARÍA LASSO VÁZQUEZ

Type: Emerging

Research programs and lines

P1: Regenerative medicine

- ▶ L1: Breast reconstruction with stem cells from adipose tissue.
- ▶ L2: Regeneration of peripheral nerves with stem cells.
- ▶ L3: Regeneration in other diseases.

P2: Gene therapy with viral delivery vehicles

- ▶ L1: VGEF in the axial nervous system.
- ▶ L2: Peripheral nervous system.
- ▶ L3: Vascular system.

P3: Hematopoietic chimerism methods

Group members

- **Edgar Alfonso Cortina Acevedo:** Predoctoral.
- **José María Lasso Vázquez:** Group director.
- **Luis Javier Arenas Domingo:** Predoctoral.
- **Paola Nava Pérez:** Predoctoral.
- **Rosa Pérez Cano:** Group Director.

Clinical practice guidelines

| Authors | Title | Publication |
|-----------------------------------|--|--|
| Lasso JM, Cortina E, Pérez Cano R | Células madre en cirugía plástica | CIRUGÍA PLÁSTICA, REPARADORA Y ESTÉTICA. COIFFMAN. 4º EDICIÓN. CAP. 32 |
| Lasso JM, Rosado J, Pérez Cano R | Versatility and innovations of the greater omental flap in the surgical treatment of Lymphedema of the upper and lower limbs | THE LYMPHATIC SYSTEM. COMPONENTS, FUNCTIONS AND DISEASES |
| Lasso JM, Pinilla C, Castellano M | New Refinements in Greater Omentum Free Flap Transfer for Severe Secondary Lymphedema Surgical Treatment | PLAST RECONSTR SURG GLOB OPEN |
| Lasso JM, Pérez Cano R, Castro Y | Xenotransplantation of human adipose-derived stem cells in the regeneration of a rabbit peripheral nerve | J PLAST RECONSTR AESTHET SURG |

Patents

- Title: Matriz artificial de gel de fibrina endotelizada superproductora de factores proangiogénicos.
Reference: P200501182 (Family with 5 patents)
Owner: FIBHGM.
Inventors: José Mª Lasso Vázquez, Paola Nava Pérez.
- Title: Dispositivo protector bucal con depresor lingual
Reference: P 201531508
Owner: FIBHGM
Inventors: Guillermo Juan Rodríguez, Javier Casanova

Publications

Total impact factor: 1.7

Publications in journals with impact factor indexed in Journal Citation Reports:

- Lasso JM; Cano RP; Castro Y; Arenas L; Garcia J; Fernandez-Santos ME. *Xenotransplantation of human adipose-derived stem cells in the regeneration of a rabbit peripheral nerve*. JOURNAL OF PLASTIC RECONSTRUCTIVE AND AESTHETIC SURGERY. 2015; 68(12) E189-E197. IF: 1.743. Quartile: 2. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Lasso JM; Pinilla C; Castellano M. *New Refinements in Greater Omentum Free Flap Transfer for Severe Secondary Lymphedema Surgical Treatment*. Plastic and reconstructive surgery. Global open. 2015; 3(5). (Article).

| | No. | IF |
|--|-----|-----|
| Own publications | 1 | 1.7 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 1 | 1.7 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 2 | 1.7 |

Experimental kidney transplant

Group director: **ENRIQUE LLEDÓ GARCÍA**

Type: Emerging

Research programs and lines

P1: Preservation of the kidney graft

- ▶ L1: Renal ischemia-reperfusion injury.
- ▶ L2: Hypothermic perfusion of the kidney graft.
- ▶ L3: Pharmacologic preconditioning and protection of the kidney graft.

P2: Reconstruction of the lower genitourinary tract

- ▶ L1: Application of cell therapy in the reconstruction of the urethra.
- ▶ L2: Application of cell therapy in the regeneration of cavernous tissue.
- ▶ L3: Application of cell therapy in the reconstruction of the sphincter.

Group members

- **Carlos Hernández Fernández:** Postdoctoral.
- **David Subirá Ríos:** Predoctoral.
- **Enrique Lledó García:** Group director.
- **Felipe Bernardo Herranz Amo:** Postdoctoral.
- **Gabriel Ogaya Piniés:** Predoctoral.
- **Gregorio Escribano Patiño:** Postdoctoral.
- **José Jara Rascón:** Postdoctoral.

Publications**Total impact factor: 12.5*****Publications in journals with impact factor indexed
in Journal Citation Reports:***

- Cozar JM; Minana B; Palou-Redorta J; Medina RA; de la Rosa-Kehrmann F; Lozano-Palacio F; Ribal-Caparros MJ; Hernandez-Fernandez C; Castineiras-Fernandez JJ; Requena MJ; Moreno-Sierra J; Carballido-Rodriguez J; Baena-Gonzalez V. Comparative analysis of the incidence of bladder cancer in the communities of Andalusia, Catalonia and Madrid in 2011. ACTAS UROLOGICAS ESPANOLAS. 2015; 39(7) 420-428. IF: 0.964. Quartile: 4. (Article).
- Monzo-Gardiner JI; Herranz-Amo F. Cardiovascular mortality in patients with prostate cancer exposed to androgen deprivation therapy. ACTAS UROLOGICAS ESPANOLAS. 2015; 39(8) 518-522. IF: 0.964. Quartile: 4. (Review).
- Amo FH; Fernandez CH; Olmo JMC; Lopez BM; Gomez-Veiga F; Rodriguez-Antolin A; Pedrosa E. Adherence to the lymphadenectomy recommendations of the 2009 clinical guidelines in the 2010 National Prostate Cancer Registry. ACTAS UROLOGICAS ESPANOLAS. 2015; 39(9) 546-552. IF: 0.964. Quartile: 4. (Article).
- Palou J; Hernandez C; Solsona E; Abascal R; Burgues JP; Rioja C; Cabrera JA; Gutierrez C; Rodriguez O; Iborra I; Herranz F; Abascal JM; Conde G; Oliva J. Effectiveness of hexaminolevulinate fluorescence cystoscopy for the diagnosis of non-muscle-invasive bladder cancer in daily clinical practice: a Spanish multicentre observational study. BJU INTERNATIONAL. 2015; 116(1) 37-43. IF: 4.387. Quartile: 1. (Article).
- Lledo-Garcia E; Jara-Rascon J; Iribarren IM; Pinero-Sanchez J; Aragon-Chamizo J; Hernandez-Fernandez C. y Penile Prosthesis First and Replacement Surgeries: Analysis of Patient and Partner Satisfaction. JOURNAL OF SEXUAL MEDICINE. 2015; 12(7) 1646-1653. IF: 2.844. Quartile: 2. (Article).
- Moncada I; de Bethencourt FR; Lledo-Garcia E; Romero-Otero J; Turbi C; Buttner H; Henneges C; Salamanca JIM. Effects of tadalafil once daily or on demand versus placebo on time to recovery of erectile function in patients after bilateral nerve-sparing radical prostatectomy. WORLD JOURNAL OF UROLOGY. 2015; 33(7) 1031-1038. IF: 2.397. Quartile: 2. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 3 | 4.8 |
| Joint publications | 3 | 7.7 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 4.4 |
| Second-quartile publications | 2 | 5.2 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 3 | 2.9 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 6 | 12.5 |

Pediatric endocrinology

Group director: M^a DOLORES RODRÍGUEZ ARNAO
Type: Associated clinical

Research lines

- ▶ L1: Pediatric endocrinology. Hypothyroidism.
- ▶ L2: Gene therapy: polymorphisms and mutations.
- ▶ L3: Hormone therapy.

Group members

- **Amparo Rodríguez Sánchez:** Predoctoral.
- **Belén Roldán:** Predoctoral.
- **Isabel Morillas Cantero:** Predoctoral.
- **María Dolores Rodríguez Arnao:** Group director.
- **Virginia Montero García:** Predoctoral.

Regeneration and biomaterials in musculoskeletal diseases

Group director: FRANCISCO JAVIER VAQUERO MARTÍN

Type: Associated clinical

Research programs

- ▶ P1: Biomaterials in orthopedic surgery.
- ▶ P2: Stromal stem cells in the locomotor apparatus.
- ▶ P3: Biomarkers in inflammation/arthrosis.

Group members

- **Mikel Aburto Bernardo:** Predoctoral.
- **Francisco Chana Rodríguez:** Postdoctoral.
- **Francisco Forriol Campos:** Postdoctoral.
- **Rafael Laguna Aranda:** Predoctoral.
- **José Antonio Matas Díaz:** Predoctoral.
- **Francisco Javier Narbona Cárcelés:** Postdoctoral.
- **Ángel Oteo Álvaro:** Predoctoral.
- **Rubén Pérez Mañanes:** Postdoctoral.
- **José Manuel Rojo Manaute:** Postdoctoral.
- **Pablo Sanz Ruiz:** Postdoctoral.
- **Francisco Javier Vaquero Martín:** Group director.

Research projects – Competitive calls

- Principal investigator: Francisco Javier Vaquero Martín
Title: Empleo Joven 2015. Rompiendo Brecha Comunicativa: Colaboración Áreas Imagen Médica e Impresión 3d Quirúrgica.
Funding body: Ministerio de Economía Y Competitividad
Start date: 2015
End date: 2017

Publications

Total impact factor: 10.9

Publications in journals with impact factor indexed in Journal Citation Reports:

- Sanz-Ruiz P; Villanueva-Martinez M; Matas-Diez JA; Vaquero-Martin J. *Revision TKA with a condylar constrained prosthesis using metaphyseal and surface cementation: a minimum 6-year follow-up analysis.* BMC MUSCULOSKELETAL DISORDERS. 2015; 16. IF: 1.684. Quartile: 2. (Article).
- Garcia D; Longo UG; Vaquero J; Forriol F; Loppini M; Khan WS; Denaro V. *Amniotic Membrane Transplant for Articular Cartilage Repair: An Experimental Study in Sheep.* CURRENT STEM CELL RESEARCH & THERAPY. 2015; 10(1) 77-83. IF: 2.645. Quartile: 3. (Article).
- Forriol F; Longo UG; Duart J; Ripalda P; Vaquero J; Loppini M; Romeo G; Campi S; Khan WS; Muda AO; Denaro V. *VEGF, BMP-7, Matrigel (TM), Hyaluronic Acid, In Vitro Cultured Chondrocytes and Trephination for Healing of the Avascular Portion of the Meniscus. An Experimental Study in Sheep.* CURRENT STEM CELL RESEARCH & THERAPY. 2015; 10(1) 69-76. IF: 2.645. Quartile: 3. (Article).
- Paz E; Sanz-Ruiz P; Abenojar J; Vaquero-Martin J; Forriol F; Del Real JC. *Evaluation of Elution and Mechanical Properties of High-Dose Antibiotic-Loaded Bone Cement: Comparative "In Vitro" Study of the Influence of Vancomycin and Cefazolin.* JOURNAL OF ARTHROPLASTY. 2015; 30(8) 1423-1429. IF: 2.515. Quartile: 1. (Article).

- Guisasola MC; Ortiz A; Chana F; Alonso B; Vaquero J. *Early inflammatory response in polytraumatized patients: Cytokines and heat shock proteins. A pilot study.* ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH. 2015; 101(5) 607-611. IF: 1.393. Quartile: 3. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Chana-Rodriguez F; Perez Mananes R; Rojo-Manaute J; Calvo Haro JA; Vaquero-Martin J. *Methods and Guidelines for Venous Thromboembolism Prevention in Polytrauma Patients with Pelvic and Acetabular Fractures.* The open orthopaedics journal. 2015; 9. 313-20. (Article).
- Chana-Rodriguez F; Perez Mananes R; Rojo-Manaute J; Moran-Blanco LM; Vaquero-Martin J. *Retained Sponge: A Rare Complication in Acetabular Osteosynthesis.* The open orthopaedics journal. 2015; 9. 321-3. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 2 | 3.1 |
| Joint publications | 3 | 7.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 2.5 |
| Second-quartile publications | 1 | 1.7 |
| Third-quartile publications | 3 | 6.7 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 7 | 10.9 |

Iron metabolism disorders

Group director: ALEJANDRO DEL CASTILLO RUEDA
Type: Associated clinical

Research programs and lines

- ▶ P1: Study of genes involved in hyperferritinemia and hemochromatosis.
- ▶ P2: Study of iron metabolism based on the serum hepcidin assay.
- ▶ P3: Case registry.

- ▶ L1: Genetic hemochromatosis.
- ▶ L2: Hereditary hyperferritinemia cataract syndrome.
- ▶ L3: Hepcidin and iron metabolism.
- ▶ L4: Non-transfusion-related secondary hemochromatosis.
- ▶ L5: Iron disorders: iron deficit and overload.

Group members

- **Marta Clavero Olmos:** Predoctoral.
- **Alejandro del Castillo Rueda:** Group director.
- **Rafael del Río Villegas:** Postdoctoral.
- **Alejandro García-España Pancorbo:** Predoctoral.
- **Amparo Guillén Mesado:** Predoctoral.
- **Laura Lillo Triguero:** Predoctoral.
- **Ana López Aparicio:** Predoctoral.
- **Nadiya Matskiv:** Predoctoral.
- **Rosa Peralta Adrados:** Postdoctoral.
- **Miguel Ángel Sánchez Pablo:** Predoctoral.
- **Inés Valdés Gross:** Predoctoral.

Publications**Total Impact Factor: 0.7**

Publications in journals with impact factor indexed in Journal Citation Reports:

- Peraita-Adrados R; del Rio-Villegas R; Vela-Bueno A. Environmental factors in the development of narcolepsy with cataplexy. A case-control study. REVISTA DE NEUROLOGIA. 2015; 60(12) 529-534. IF: 0.684. Quartile: 4. (Article).

| | No. | IF |
|---|----------|------------|
| Own publications | 1 | 0.7 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 1 | 0.7 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 1 | 0.7 |

Emergency medicine

Group director: JAVIER MUÑOZ GONZÁLEZ

Type: Associated clinical

Research programs and lines

P1: Pathogenic mechanisms in the critically ill patient

- ▶ L1: Deep vein thrombosis in the critically ill patient.
- ▶ L2: Extracorporeal membrane oxygenation in adults.
- ▶ L3: Severe sepsis and septic shock.

Group members

- **Braulio de la Calle Reviriego:** Predoctoral.
- **Javier Muñoz González:** Group director.
- **José Eugenio Guerrero Sanz:** Postdoctoral.
- **Juan Carlos Sotillo Díaz:** Postdoctoral.
- **María Jesús Tomey Soria:** Predoctoral.
- **Pablo García Olivares:** Predoctoral.
- **Patricia Santa Teresa Zamarro:** Postdoctoral.

Publications**Total impact factor: 3.8*****Publications in journals with impact factor indexed in Journal Citation Reports:***

- Escudero D; Valentin MO; Escalante JL; Sanmartin A; Perez-Basterrechea M; de Gea J; Martin M; Velasco J; Pont T; Masnou N; de la Calle B; Marcelo B; Lebron M; Perez JM; Burgos M; Gimeno R; Kot P; Yus S; Sancho I; Zabalegui A; Arroyo M; Minambres E; Elizal. *Intensive care practices in brain death diagnosis and organ donation.* ANAESTHESIA. 2015; 70(10) 1130-1139. IF: 3.794. Quartile: 1. (Article).

| | No. | IF |
|---|----------|------------|
| Own publications | 0 | 0.0 |
| Joint publications | 1 | 3.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.8 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 1 | 3.8 |

Pathophysiology, disease course, and therapeutic strategies in chronic respiratory insufficiency and sleep-related respiratory disorders

Group director: PILAR DE LUCAS RAMOS

Type: Associated clinical

Research programs and lines

P1: COPD: natural history and comorbidity

- ▶ L1: Study of the multidimensional course of COPD.
- ▶ L2: Systemic consequences of COPD.

P2: NIMV in the treatment of chronic respiratory insufficiency

- ▶ L1: NIMV compared with CPAP in patients with OHS.
- ▶ L2: Study of long-term outcome in patients with chronic respiratory insufficiency treated with home mechanical ventilation.

P3: Sleep apnea syndrome: role of comorbid conditions

- ▶ L1: Prevalence and incidence of cardiovascular disease in patients with SAHS.
- ▶ L2: Prevalence of COPD and disease severity in patients with SAHS.

Group members

- José Miguel Rodríguez González-Moro: Postdoctoral.
- Mª Pilar De Lucas Ramos: Group director.
- Soledad López Martín: Predoctoral.

Clinical practice guidelines

| Authors | Title | Publication |
|---|--|---|
| Navarrete BA; Casanova C; Miravitles M; de Lucas P; Riesco JA; Gonzalez-Moro JMR | "Correct Use of Inhaled Corticosteroids in Chronic Obstructive Pulmonary Disease": A Consensus Document | Archivos de Bronconeumologia |
| Barreiro E; Bustamante V; Cejudo P; Galdiz JB; Gea J; de Lucas P; Martinez-Llorens J; Ortega F; Puente-Maestue L; Roca J; Moro JMRG | Guidelines for the Evaluation and Treatment of Muscle Dysfunction in Patients With Chronic Obstructive Pulmonary Disease | Arch Bronconeumol. 2015. Aug;51(8):384-95. doi: 10.1016/j.arbres.2015.04.011. Epub 2015 Jun 10. English,Spanish. PubMed PMID: 26072153 |

Publications

Total impact factor: 38.0

Publications in journals with impact factor indexed

in Journal Citation Reports:

- Masa JF; Coral J; Alonso ML; Ordax E; Troncoso MF; Gonzalez M; Lopez-Martinez S; Marin JM; Marti S; Diaz-Cambriles T; Chiner E; Aizpuru F; Egea C. *Efficacy of Different Treatment Alternatives for Obesity Hypoventilation Syndrome Pickwick Study*. AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE. 2015; 192(1) 86-95. IF: 13.118. Quartile: 1. (Article).
- Navarrete BA; Casanova C; Miravitles M; de Lucas P; Riesco JA; Gonzalez-Moro JMR. "Correct Use of Inhaled Corticosteroids in Chronic Obstructive Pulmonary Disease": A Consensus Document. ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(4) 193-198. IF: 1.771. Quartile: 3. (Article).
- Castillejo EO; Ramos PDL; Martin SL; Barrios PR; Rodriguez PR; Caicedo LM; Cano JMB; Gonzalez-Moro JMR. *Noninvasive Mechanical Ventilation in Patients with Obesity Hypoventilation Syndrome. Long-term Outcome and*

Prognostic Factors. ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(2) 61-68. IF: 1.771. Quartile: 3. (Article).

- Barreiro E; Bustamante V; Cejudo P; Galdiz JB; Gea J; de Lucas P; Martinez-Llorens J; Ortega F; Puente-Maestue L; Roca J; Moro JMRG. *Guidelines for the Evaluation and Treatment of Muscle Dysfunction in Patients With Chronic Obstructive Pulmonary Disease.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(8) 384-395. IF: 1.771. Quartile: 3. (Article).
- de Lucas-Ramos P; Gonzalez-Moro JMR. *Aging, Chronicity and Pulmonary Care.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(8) 369-370. IF: 1.771. Quartile: 3. (Editorial Material).
- Casanova C; Marin JM; Martinez-Gonzalez C; de Lucas-Ramos P; Mir-Vila-drich I; Cosio B; Peces-Barba G; Solanes-Garcia I; Aguero R; Feu-Collado N; Calle-Rubio M; Alfageme I; de Diego-Damia A; Irigaray R; Marin M; Balcells E; Llunell A; Galdiz JB; Golpe R; L. *Differential Effect of Modified Medical Research Council Dyspnea, COPD Assessment Test, and Clinical COPD Questionnaire for Symptoms Evaluation Within the New GOLD Staging and Mortality in COPD.* CHEST. 2015; 148(1) 159-168. IF: 5.94. Quartile: 1. (Article).
- Verde Z; Reinoso-Barbero L; Chicharro L; Garatachea N; Resano P; Sanchez-Hernandez I; Gonzalez-Moro JMR; Bandres F; Santiago C; Gomez-Gallego F. *Effects of cigarette smoking and nicotine metabolite ratio on leukocyte telomere length.* ENVIRONMENTAL RESEARCH. 2015; 140: 488-494. IF: 3.088. Quartile: 1. (Article).
- Verde Z; Reinoso L; Chicharro LM; Resano P; Sanchez-Hernandez I; Gonzalez-Moro JMR; Bandres F; Gomez-Gallego F; Santiago C. *Are SNP-Smoking Association Studies Needed in Controls? DNA Repair Gene Polymorphisms and Smoking Intensity.* PLOS ONE. 2015; 10(5). IF: 3.057. Quartile: 1. (Article).
- Yanez AM; Prat JP; Alvarez-Sala JL; Calle M; Lobato SD; Gonzalez JLG; Gonzalez-Moro JMR; Galera-Martinez R; Villasante C; Ramos I; Franco-Gay M; de Lucas P. *Oxygenation With a Single Portable Pulse-Dose Oxygen-Conserving Device and Combined Stationary and Portable Oxygen Delivery Devices in*

Subjects With COPD. RESPIRATORY CARE. 2015; 60(3) 382-387. IF: 1.922.
Quartile: 3. (Article).

- Rodriguez-Gonzalez Moro JM; Menendez R; Campins M; Lwoff N; Oyaguez I; Echave M; Rejas J; Antonanzas F. *Cost-Effectiveness Of A 13-Valent Conjugate Pneumococcal Vaccination Program In Copd Patients Aged 50+ Years In Spain.* Value in health. 2015; 18(7). IF: 3.824. Quartile: 1. (Article).

Letters (not included in the impact factor):

- Castillejo EO; Ramos PD; Barrios PR; Martin SL; Rodriguez PR; Caicedo LM; Cano JMB; Gonzalez-Moro JMR. *Mortality in obesity-hypoventilation syndrome and prognostic risk factors.* ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(6) 304-305. IF: 1.771. Quartile: 3. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 4 | 9.1 |
| Joint publications | 6 | 28.9 |
| First-decile publications | 2 | 16.9 |
| First-quartile publications | 5 | 29.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 5 | 9.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 11 | 38.0 |

Anesthesia in chest surgery

Group director: IGNACIO GARUTTI MARTÍNEZ

Type: Emerging

Research programs and lines

P1: Anesthesia in chest surgery

- ▶ L1: Pathophysiology of one-lung ventilation.
- ▶ L2: Thoracic paravertebral block.
- ▶ L3: Postoperative management.
- ▶ L4: Experimental line: lung autotransplantation.

Group members

- **Javier Casanova Barea:** Postdoctoral.
- **Patricia Cruz Pardos:** Postdoctoral.
- **Patricia Duque González:** Postdoctoral.
- **Francisco Andrés de la Gala García:** Postdoctoral.
- **María Cruz García García:** Postdoctoral.
- **Ignacio Garutti Martínez:** Group director.
- **Francisco González Moraga:** Predoctoral.
- **Guillermo González Casaurrán:** Predoctoral.
- **Luis Javier Huerta Martínez:** Postdoctoral.
- **Sergio Paredes Royano:** Postdoctoral.
- **Patricia Piñeiro Otero:** Postdoctoral.
- **Lisa Rancan:** Postdoctoral.
- **Guillermo Sánchez Pedrosa:** Postdoctoral.
- **Carlos María Simón Adiego:** Postdoctoral.
- **Elena Vara Ameigeiras:** Postdoctoral.

Research projects – Competitive calls

- Principal investigator: Carlos María Simón Adiego
Title: Efecto de la administración de sevoflurano y de lidocaína durante la perfusión pulmonar ex vivo de un modelo experimental de trasplante pulmonar de donante en asistolia.
Funding body: F. Mutua Madrileña
Start date: 2015
End date: 2017
- Principal investigator: Carlos María Simón Adiego
Title: Efecto de la administración de sevoflurano y de lidocaína durante la perfusión pulmonar ex vivo en un modelo experimental de trasplante de donante en asistolia.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016

Theses

| Doctoral student | Título | Director | University |
|--------------------------|--|--|------------|
| Gabriel Alejandro Cusati | Efecto de la lidocaína en la modulación del daño pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |
| Lisa Rancan | Modulación de la respuesta inflamatoria secundaria a la isquemia/reperfusión pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |

| Doctoral student | Título | Director | University |
|---------------------------|--|--|------------|
| Guillermo Sánchez Pedrosa | Respuesta inflamatoria local secundaria a la ventilación unipulmonar en un modelo experimental de cirugía torácica | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |

Clinical practice guidelines

| Authors | Title | Publication |
|---|--|---|
| Ignacio Garutti, Miriam de Nadal, Renato Schiraldi, Francisco Acosta, César Aldecoa | Guías clínicas para la optimización hemodinámica perioperatoria de los pacientes adultos durante la cirugía no cardíaca pacientes adultos durante la cirugía no cardíaca | EDITORIAL: Cryre Marketing Solutions. ISBN: 13: 978-84-942121-6-1 |
| Ignacio Garutti, Miriam de Nadal, Renato Schiraldi, Francisco Acosta, César Aldecoa | Clinical guidelines for perioperative hemodynamic optimization in adult patients during non-cardiac surgery | EDITORIAL: Cryre Marketing Solutions. ISBN: 13: 978-84-944101-1-6 |

Publications

Total impact factor: 12.1

Publications in journals with impact factor indexed in Journal Citation Reports:

- Garutti I; Sanz J; Olmedilla L; Tranche I; Vilchez A; Fernandez-Quero L; Banares R; Perez-Pena JM. *Extravascular Lung Water and Pulmonary Vascular Permeability Index Measured at the End of Surgery Are Independent Predictors of Prolonged Mechanical Ventilation in Patients Undergoing Liver Transplantation.* ANESTHESIA AND ANALGESIA. 2015; 121(3) 736-745. IF: 3.827. Quartile: 1. (Article).

- Martinez IG; Aragoneses FG; Ramirez JM. *Multimodal rehabilitation program in thoracic surgery*. ARCHIVOS DE BRONCONEUMOLOGIA. 2015; 51(4) 159-160. IF: 1.771. Quartile: 3. (Editorial Material).
- Vina JI; Adiego CS; Casaurran GG; Pascual RP; Aragoneses FG. *Metalloptosis: A new case with another cause?* CIRUGIA ESPANOLA. 2015; 93(6) 412-413. IF: 1. Quartile: 3. (Editorial Material).
- de la Gala F; Pineiro P; Garutti I; Reyes A; Olmedilla L; Cruz P; Duque P; Casanova J; Rancan L; Benito P; Vara E. *Systemic and alveolar inflammatory response in the dependent and nondependent lung in patients undergoing lung resection surgery A prospective observational study*. EUROPEAN JOURNAL OF ANAESTHESIOLOGY. 2015; 32(12) 872-880. IF: 3.634. Quartile: 1. (Article).
- Ferrando C; Soro M; Canet J; Unzueta MC; Suarez F; Librero J; Peiro S; Llombart A; Delgado C; Leon I; Rovira L; Ramasco F; Granell M; Aldecoa C; Diaz O; Balust J; Garutti I; de la Matta M; Pensado A; Gonzalez R; Duran ME; Gallego L; del Valle SG; Redondo. *Rationale and study design for an individualized perioperative open lung ventilatory strategy (iPROVE): study protocol for a randomized controlled trial*. TRIALS. 2015; 16. IF: 1.859. Quartile: 3. (Article).

**Publications in journals without impact factor indexed
in Journal Citation Reports:**

- Bolanos-Vergaray JJ; Garcia FD; Rebollar JCO; Alvarez MB. *Slipping Rib Syndrome as Persistent Abdominal and Chest Pain*. A & A CASE REPORTS. 2015; 5(9) 167-168. (Article).

| | No. | IF |
|---|-----|------|
| Own publications | 2 | 7.5 |
| Joint publications | 3 | 4.6 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 2 | 7.5 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 3 | 4.6 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 3 | 12.1 |

Regenerative medicine and systems development: cardiovascular and osteochondral

Group director: M^a BEGOÑA QUINTANA VILLAMANDOS

Type: Emerging

Research programs and lines

P1: Ventricular remodelling: natural history, pathophysiology, and treatment

- ▶ L1: Immunohistopathology and ultrastructure of ventricular remodeling.
- ▶ L2: Pathophysiology of ventricular remodeling.
- ▶ L3: New therapies in regression of ventricular remodeling.

P2: Growth plate transplant

- ▶ L1: Formation of a cryopreserved growth plate biobank.
- ▶ L2: Immunosuppressive therapy.
- ▶ L3: Mixed transplant of growth plate and bone graft.

P3: Development of the osteochondral system

- ▶ L1: Comparative anatomy in the osteochondral system. Evo-devo implications.
- ▶ L2: Study of experimental models.

P4: Vascular disease

- ▶ L1: Fetal origin of cardiovascular disease and nutrition.
- ▶ L2: Antioxidant and antihypertensive action of liver growth factor.
- ▶ L3: Applications of confocal microscopy to the study of vascular remodeling.
- ▶ L4: Serum biomarkers of cardiovascular disease.
- ▶ L5: High-altitude pulmonary hypertension.



Group members

- **Silvia Magdalena Arribas Rodríguez:** Postdoctoral.
- **Luis Condezo Hoyos:** Postdoctoral.
- **Emilio Delgado Baeza:** Senior researcher.
- **María Jesús Delgado Martos:** Postdoctoral.
- **José Juan Gómez de Diego:** Predoctoral.
- **María del Carmen González García:** Postdoctoral.
- **Mario Iglesias de la Vega:** Postdoctoral.
- **Antonia Martos Rodríguez:** Predoctoral.
- **Paloma Morillas Sendín:** Postdoctoral.
- **Begoña Quintana Villamandos:** Group director.

Research projects – Competitive calls

- Principal investigator: Begoña Quintana Villamandos
Title: Regresión precoz del remodelado cardiovascular tras tratamiento con dronedarona en un modelo experimental de rata hipertensa.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016

Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------------|---|---|------------|
| Paloma Morillas Sendín | Efecto anestésico en el dispositivo de asistencia mecánica circulatoria: anestesia intravenosa frente a anestesia inhalatoria | Begoña Quintana, Emilio Delgado, M ^a Jesús Delgado | UCM |

Clinical practice guidelines

| Authors | Title | Publication |
|---|-----------------------------|-------------|
| Begoña Quintana Villamandos, Carmen Fernández Riveira | Esmolol en Cirugía cardiaca | **** |

Patents and intellectual property registrations

- Title: Use of esmolol for early regression of left ventricular hypertrophy
Reference: EP10382141 (Family with 2 patents)
Owner: FIBHGM
Inventors: Emilio Delgado, Begoña Quintana

- Title: Dispositivo protector bucal con depresor lingual
Reference: P 201531508
Owner: FIBHGM
Inventors: Guillermo Juan Rodríguez, Javier Casanova

Publications

Total impact factor: 2.1

Publications in journals with impact factor indexed in Journal Citation Reports:

- Morillas-Sendín P; Delgado-Baeza E; Delgado-Martos MJ; Barranco M; del Canizo JF; Ruiz M; Quintana-Villamandos B. *Effects of Sevoflurane and Propofol on Organ Blood Flow in Left Ventricular Assist Devices in Pigs*. BIOMED RESEARCH INTERNATIONAL. 2015;. IF: 2.134. Quartile: 3. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 1 | 2.1 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 1 | 2.1 |

Peritransplant evaluation of the liver

Group director: JOSÉ MARÍA PÉREZ PEÑA

Type: Associated clinical

Research lines

- ▶ L1: Evaluation of early function of the liver graft.
- ▶ L2: Dysfunction of the autonomic nervous system and heart disease in patients with cirrhosis undergoing liver transplant.
- ▶ L3: Influence of anesthetic agents in major liver surgery.

The members of the *Peritransplant evaluation of the liver* group provide health care in Hospital Gregorio Marañón, mainly in the field of anesthesia and postoperative management of patients who have undergone major abdominal surgery. Furthermore, since 1990, when the liver transplant program was implemented at the hospital, this group has formed part of the liver transplant anesthesia team. The group has also been developing various research lines in anesthesia and in major liver surgery in close collaboration with the Hepatology and Surgery Departments. The research lines that have been developed in recent years are as follows:

1. Research into the occurrence and consequences of subclinical cardiomyopathy and cardiac dysfunction during liver transplant in cirrhotic patients.

The group has studied the preoperative assessment of cardiomyopathy in cirrhotic patients by using echocardiography to evaluate the response to a cardiovascular stress test and investigating subsequent intraoperative behavior during liver transplant.

2. Methods for the rapid diagnosis of early graft failure in liver transplant.

Rapid diagnosis of graft failure is a major challenge in liver transplant and makes it possible to review potentially implicated factors (especially arterial thromboses, which can be corrected by surgery) so that they can be treated before outcome is irreversible. The indocyanine green clearance test has been proposed as a suitable approach to graft failure. Indocyanine green is a com-

pound that is eliminated from circulation exclusively by the liver to bile. The group has developed a research line to investigate the ability of indocyanine green clearance to predict liver graft failure, morbidity and mortality, and early lesions of the biliary tract after liver transplant.

3. Effect of anesthetic agents in major liver surgery and liver transplant.

The various anesthetics administered induce variations in hepatic blood flow, systemic and portal hemodynamics, and modulation of the inflammatory response during liver surgery and transplant. The group is using an experimental porcine model to investigate the effects of the anesthetics used in clinical practice (sevoflurane and propofol) on liver function and hemodynamics during extensive liver resection.

4. The group forms part of a multidisciplinary clinical and experimental research team comprising hepatologists, surgeons, pathologists, biochemists, and anesthesiologists from Hospital Gregorio Marañón. In recent years, the team has been developing a research line based on an experimental porcine model to determine the physiological mechanisms underlying acute liver failure after extensive liver resection and small-for-size syndrome, as well as the effects of normothermic perfusion on recovery of liver grafts from marginal donors and liver regeneration.

Group members

- **Patricia Duque González:** Postdoctoral.
- **Consolación Jiménez de la Fuente:** Postdoctoral.
- **Cristina Julia Lisbona Sáez:** Predoctoral.
- **Luis Enrique Olmedilla Arnal:** Postdoctoral.
- **José María Pérez Peña:** Group director.
- **Manuel Luis Tisner Madrid:** Predoctoral.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|---------------------------|--|--|------------|
| Gabriel Alejandro Cusati | Efecto de la lidocaína en la modulación del daño pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |
| Lisa Rancan | Modulación de la respuesta inflamatoria secundaria a la isquemia/reperfusión pulmonar en un modelo experimental de cirugía de resección pulmonar en cerdos | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |
| Guillermo Sánchez Pedrosa | Respuesta inflamatoria local secundaria a la ventilación unipulmonar en un modelo experimental de cirugía torácica | Elena Vara Ameigeiras, Carlos Simón Adiego, Ignacio Garutti Martínez | UCM |

Publications

Total impact factor: 7.5

**Publications in journals with impact factor indexed
in Journal Citation Reports:**

- Garutti I; Sanz J; Olmedilla L; Tranche I; Vilchez A; Fernandez-Quero L; Banares R; Perez-Pena JM. *Extravascular Lung Water and Pulmonary Vascular Permeability Index Measured at the End of Surgery Are Independent Predictors of Prolonged Mechanical Ventilation in Patients Undergoing Liver Transplantation.* ANESTHESIA AND ANALGESIA. 2015; 121(3) 736-745. IF: 3.827. Quartile: 1. (Article).
- de la Gala F; Pineiro P; Garutti I; Reyes A; Olmedilla L; Cruz P; Duque P; Casanova J; Rancan L; Benito P; Vara E. *Systemic and alveolar inflammatory response in the dependent and nondependent lung in patients undergoing lung resection surgery A prospective observational study.* EUROPEAN JOURNAL OF ANAESTHESIOLOGY. 2015; 32(12) 872-880. IF: 3.634. Quartile: 1. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 1 | 3.8 |
| Joint publications | 1 | 3.6 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 2 | 7.5 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 2 | 7.5 |

Perianesthetic evaluation

Group director: CARMEN FERNÁNDEZ RIVEIRA

Type: Associated clinical

Research lines

- ▶ L1: Perianesthetic evaluation.



Group members

- **Teresa del Castillo:** Predoctoral.
- **Susana Díaz Ruano:** Predoctoral.
- **Alejandro Fernández Fernández:** Predoctoral.
- **Carmen Fernández Riveira:** Group director.
- **Mª José Membrillo Rubalcaba:** Predoctoral.
- **Mª Ángeles Miguel Guijarro:** Predoctoral.
- **Hugo David Orozco Galeano:** Predoctoral.
- **María Palencia Jorge:** Predoctoral.
- **Fidel Eduardo Reyes Osorio:** Predoctoral.
- **Bibiana Riaño Méndez:** Predoctoral.
- **Erika San Juan López:** Predoctoral.
- **Javier Sanz Fernández:** Postdoctoral.
- **Mª Teresa Torre Oñate:** Predoctoral.
- **Jesús Alberto Varela Cabo:** Predoctoral.

Publications**Total impact factor: 7.5*****Publications in journals with impact factor indexed
in Journal Citation Reports:***

- Garutti I; Sanz J; Olmedilla L; Tranche I; Vilchez A; Fernandez-Quero L; Banares R; Perez-Pena JM. *Extravascular Lung Water and Pulmonary Vascular Permeability Index Measured at the End of Surgery Are Independent Predictors of Prolonged Mechanical Ventilation in Patients Undergoing Liver Transplantation.* ANESTHESIA AND ANALGESIA. 2015; 121(3) 736-745. IF: 3.827. Quartile: 1. (Article).
- Zaballos M; Canal MI; Martinez R; Membrillo MJ; Gonzalez FJ; Orozco HD; Sanz FJ; Lopez-Gil M. *Preoperative smoking cessation counseling activities of anesthesiologists: a cross-sectional study.* BMC ANESTHESIOLOGY. 2015; 15. IF: 1.32. Quartile: 3. (Article).

- Cid J; De La Calle JL; Lopez E; Del Pozo C; Perucho A; Acedo MS; Bedmar D; Benito J; De Andres J; Diaz S; Garcia JA; Gomez-Caro L; Gracia A; Hernandez JM; Insaurieta J; Madariaga M; Monino P; Ruiz M; Uriarte E; Vidal A. *A Modified Delphi Survey on the Signs and Symptoms of Low Back Pain: Indicators for an Interventional Management Approach.* PAIN PRACTICE. 2015; 15(1) 12-21. IF: 2.317. Quartile: 2. (Article).

| | No. | IF |
|---|----------|------------|
| Own publications | 0 | 0.0 |
| Joint publications | 3 | 7.5 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.8 |
| Second-quartile publications | 1 | 2.3 |
| Third-quartile publications | 1 | 1.3 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 3 | 7.5 |

Anesthesia, toxins, and arrhythmias

Group director: MATILDE ZABALLOS GARCÍA

Type: Associated clinical

Research lines

- ▶ L1: Anesthetic agents and cardiac electrophysiology.

Group members

- **Jesús Almendral Garrote:** Senior researcher.
- **María José Anadón Baselga:** Postdoctoral.
- **Carlos de Diego Rus:** Predoctoral.
- **Brezo Belén del Blanco Narciso:** Predoctoral.
- **M^a Concepción Jimeno:** Predoctoral.
- **Óscar Quintela Jorge:** Predoctoral.
- **Matilde Zaballos García:** Group director.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|----------------------------|---|---|------------|
| Carlos García Caballero | Sumisión química. Estudio de prevalencia en casos de presuntos delitos contra la libertad sexual analizados en el Instituto Nacional de Toxicología y Ciencias Forenses (Departamento de Madrid) en el período 2010-2013. Aplicación forense de la cromatografía de líquidos acoplada a la espectrometría de masas en el análisis de muestras de cabello" | Óscar Quintela, Angelina Cruz Landeira, María José Anadón Baselga | UCM |
| José Manuel García Sánchez | Efectos del clodimeforno sobre el desarrollo de los sistemas de neurotransmisores monoaminérgicos en el sistema nervioso central de la rata | MºJosé Anadon Baselga | UCM |
| Miguel Andrés Capó Martí | Aspectos éticos y legislativos acoplados a la trangénesis de animales y alimentos | MºJosé Anadon Baselga | UCM |

Publications

Total impact factor: 3.8

*Publications in journals with impact factor indexed
in Journal Citation Reports:*

- Zaballos M; Bastida E; Agusti S; Portas M; Jimenez C; Lopez-Gil M. *Effect-site concentration of propofol required for LMA-Supreme (TM) insertion with and without remifentanil: a randomized controlled trial.* BMC ANESTHESIOLOGY. 2015; 1. IF: 1.32. Quartile: 3. (Article).
- Zaballos M; Canal MI; Martinez R; Membrillo MJ; Gonzalez FJ; Orozco HD; Sanz FJ; Lopez-Gil M. *Preoperative smoking cessation counseling activities of anesthesiologists: a cross-sectional study.* BMC ANESTHESIOLOGY. 2015; 15. IF: 1.32. Quartile: 3. (Article).
- Hadid C; Atienza F; Strasberg B; Arenal A; Codner P; Gonzalez-Torrecilla E; Datino T; Percal T; Almendral J; Ortiz M; Martins R; Martinez-Alzamora N; Aviles FF. *Clinical impact of defibrillation testing at the time of implantable cardioverter-defibrillator insertion.* CARDIOLOGY JOURNAL. 2015; 22(3) 253-259. IF: 1.13. Quartile: 4. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 2 | 2.6 |
| Joint publications | 1 | 1.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 2.6 |
| Fourth-quartile publications | 1 | 1.1 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 3 | 3.8 |

Clinical practice guidelines

| Authors | Title | Publication |
|---|---|---------------------------|
| Zaballos M, López-Álvarez S, Argente P, López A | Recomendaciones de pruebas preoperatorias en el paciente adulto para procedimientos en régimen de cirugía ambulatoria | REV ESP ANESTESIOL REANIM |

Biopathology of aging

Group director: **JOSÉ ANTONIO SERRA REXACH**
Type: Consolidated

Research programs and lines

P1: Collaborative care models for the management of elderly patients

- ▶ L1: Hip fracture.
- ▶ L2: Heart disease.
- ▶ L3: Cancer.
- ▶ L4: Prevention of acute confusional state.
- ▶ L5: Difficulty swallowing.

P2: Markers of risk of mortality on discharge from an acute care unit

P3: Physical activity in the elderly

L1: High-intensity training for institutionalized elderly persons.

L2: Prevention of functional deterioration in hospitalized elderly persons.

P4: Development and applicability of new technology for the care of elderly persons

The *Biopathology of aging* research group has been active in the field of aging for 15 years.

The group was included in the Red Temática de Investigación Cooperativa en Envejecimiento y Fragilidad (RETICEF [*Thematic Cooperative Research Network for Aging and Frailty*] RD12/0043), which is part of the program of Subdirección General de Redes y Centros de Investigación Cooperativa of the Instituto de Salud Carlos III. This network has been funded by the Instituto de Salud Carlos III since 2006. Its general objective is to make an in-depth study of frailty. Its more specific objectives are to define an operative concept of frailty, analyze the prevalence of frailty, determine associations between frailty and chronic diseases (especially with respect to onset of disability), discover and evaluate preventive strategies, and evaluate pharmacological and nonpharmacological interventions. The network currently includes 14 research groups from clinical practice, basic science, and prevention in universities in 8 Spanish provinces.

Group members

- **Rosario Yassira Gracia de San Román:** Predoctoral.
- **Nuria Montero Fernández:** Predoctoral.
- **Javier Ortiz Alonso:** Senior researcher.
- **José Antonio Serra Rexach:** Group director.
- **María Teresa Vidán Asteiz:** Senior researcher.

Research projects – Competitive calls

- Principal investigator: José Antonio Serra Rexach
Title: Integrated prevention and detection solutions tailored to the population and risk factors associated with falls.
(PROJECT NUMBER: 297225)
Funding body: European Commission
Start date: 2012
End date: 2015
- Principal investigator: José Antonio Serra Rexach
Title: Proyecto FIS 2012. Prevencion del deterioro funcional asociado a la hospitalizacion en ancianos mediante un programa de ejercicio fisico.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015



Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------------------|--|---|------------|
| Maria Loreto Alvarez Nebreda | Tratamiento integral de la fractura de cadera en el anciano: Modelo predictivo de mortalidad intrahospitalaria | José Antonio Serra Rexach and José Manuel Ribera Casado | UCM |

Publications

Total impact factor: 21.5

Publications in journals with impact factor indexed in Journal Citation Reports:

- Cuesta F; Formiga F; Lopez-soto A; Masanes F; Ruiz D; Artaza I; Salva A; Serra-Rexach JA; Luque XRI; Cruz-Jentoft AJ. *Prevalence of sarcopenia in patients attending outpatient geriatric clinics: the ELLI study.* AGE AND AGEING. 2015; 44(5) 807-809. IF: 4.201. Quartile: 1. (Article).
- Noriega FJ; Vidan MT; Sanchez E; Diaz A; Serra-Rexach JA; Fernandez-Aviles F; Bueno H. *Incidence and impact of delirium on clinical and functional outcomes in older patients hospitalized for acute cardiac diseases.* AMERICAN HEART JOURNAL. 2015; 170(5) 938-944. IF: 4.332. Quartile: 1. (Article).
- Jover JA; Lajas C; Leon L; Carmona L; Serra JA; Reoyo A; Rodriguez-Rodriguez L; Abasolo L. *Incidence of Physical Disability Related to Musculoskeletal Disorders in the Elderly: Results From a Primary Care-Based Registry.* ARTHRITIS CARE & RESEARCH. 2015; 67(1) 89-93. IF: 3.229. Quartile: 2. (Article).
- Ruiz JR; Gil-Bea F; Bustamante-Ara N; Rodrguez-Romo G; Fiua-Luces C; Serra-Rexach JA; Cedazo-Minguez A; Lucia A. *Resistance Training Does not have an Effect on Cognition or Related Serum Biomarkers in Nonagenarians: A Randomized Controlled Trial.* INTERNATIONAL JOURNAL OF SPORTS MEDICINE. 2015; 36(1) 54-60. IF: 2.528. Quartile: 1. (Article).

- Peterson MD; Al Snihi S; Serra-Rexach JA; Burant C. *Android Adiposity and Lack of Moderate and Vigorous Physical Activity Are Associated With Insulin Resistance and Diabetes in Aging Adults.* JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES. 2015; 70(8) 1009-1017. IF: 5.476. Quartile: 1. (Article).
- Abasolo L; Leon L; Lajas C; Carmona L; Serra JA; Reoyo A; Rodriguez-Rodriguez L; Jover JA. *An early intervention program for subacute physical disability related to musculoskeletal diseases in the elderly: a pilot study.* RHEUMATOLOGY INTERNATIONAL. 2015; 35(7) 1183-1191. IF: 1.702. Quartile: 3. (Article).

| | No. | IF |
|---|-----|------|
| Own publications | 0 | 0.0 |
| Joint publications | 6 | 21.5 |
| First-decile publications | 1 | 5.5 |
| First-quartile publications | 4 | 16.5 |
| Second-quartile publications | 1 | 3.2 |
| Third-quartile publications | 1 | 1.7 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 6 | 21.5 |

Neonatal and developmental pathophysiology

Group director: **MANUEL SÁNCHEZ LUNA**

Type: In process of consolidation

Research programs and lines

P1: Prevention and treatment of bronchopulmonary dysplasia

- ▶ L1: Noninvasive respiratory support.
- ▶ L2: Animal model of bronchopulmonary dysplasia induced by pronged exposure to oxygen.
- ▶ L3: Helium in neonatal respiratory support.
- ▶ L4: Nitric oxide in the prevention of bronchopulmonary dysplasia.
- ▶ L5: Congenital diaphragmatic hernia.
- ▶ L6: Expression of VEGF in the lungs of newborn rats exposed to nitrofen in utero.
- ▶ L7: Effect of tracheal ligation in utero on fetal lung development.

P2: Neonatal neuroprotection

- ▶ L1: Active hypothermia in the prevention of brain damage induced by hypoxic ischemic encephalopathy.

P3: Neonatal infection

- ▶ L1: Nosocomial infection.
- ▶ L2: Study of innate immunity in the extremely preterm newborn.
- ▶ L3: Development of autologous vaccines for the prevention of nosocomial infection.

P4: Imaging in neonatology

- ▶ L1: Development of an incubator for neonatal imaging with nonionizing radiation.

P5: Neonatal nutrition

- ▶ L1: Cyclic parenteral nutrition.

Group members

- **María Arriaga Redondo:** Predoctoral.
- **Belén Bernardo Atienza:** Predoctoral.
- **Dorotea Blanco Bravo:** Predoctoral.
- **Sylvia Caballero Martín:** Predoctoral.
- **Paz Chimenti Camacho:** Predoctoral.
- **María Luisa Franco Fernández:** Predoctoral.
- **Noelia González Pacheco:** Predoctoral.
- **Elena Maderuelo Rodríguez:** Predoctoral.
- **María Itzíar Marsinyach Ros:** Postdoctoral.
- **Nelia Navarro Patiño:** Postdoctoral.
- **María Isabel Pescador Chamorro:** Predoctoral.
- **Cristina Ramos Navarro:** Predoctoral.
- **Ana Rodríguez Sánchez de la Blanca:** Postdoctoral.
- **Manuel Sánchez Luna:** Group director.
- **María del Carmen Sánchez Gómez de Orgaz:** Predoctoral.
- **Esther Sanz López:** Predoctoral.
- **Sonia Villar Castro:** Predoctoral.
- **Elena Zamora Flores:** Predoctoral.
- **Gonzalo Zeballos Sarrato:** Predoctoral.
- **Susana Elena Zeballos Sarrato:** Predoctoral.

Research projects – Competitive calls

- Principal investigator: Manuel Sánchez Luna
Title: Proyecto FIS 2014. Ventilación mecánica de alta frecuencia con frecuencias elevadas de protección pulmonar en el síndrome de distrés respiratorio de lechones recién nacidos.
Funding body: Instituto de Salud Carlos III
Start date: 2015
End date: 2017



Theses

| Doctoral student | Title | Supervisor(s) | University |
|-----------------------------|--|--|------------|
| María Itziar Marsinyach Ros | Fundamentos para la creación y control de calidad de un sistema de transporte neonatal especializado | José López Sastre, Manuel Sánchez Luna | UCM |

Patents

- Title: Incubadora para Imagen con Radiación No Ionizante
Reference: PCT/ES2007/070214 (Family with 3 patents)
Owner: FIBHGM
Inventors: Juan José Vaquero, Manuel Desco Menéndez, Manuel Sánchez Luna
- Title: Método para visualizar la información contenida en imágenes tridimensionales del corazón
Reference: P201000363 (Family with 4 patents)
Owner: FIBHGM/UPM
Inventors: Esther Pérez David, Ángel Arenal Maíz, Javier Bermejo Thomas, Francisco Fernández Avilés, Manuel Desco Menéndez, MªJesús Ledesma Carballo, Andrés de Santos Lleó, José Luis Rubio Guiñerau

Publications

Total impact factor: 5.5

Publications in journals with impact factor indexed in Journal Citation Reports:

- Giménez EC; Sánchez-Luna M. *Providing parents with individualised support in a neonatal intensive care unit reduced stress, anxiety and depression.* ACTA PAEDIATRICA. 2015; 104(7) E300-E305. IF: 1.647. Quartile: 2. (Article).
- Sanz MI; Luna MS; Mussons FB; Martínez-Astorquiza T; Vicens JML; Aloy JF. *Underwater delivery. Consensus of the Spanish Neonatology Society and the Perinatal Section of the Spanish Obstetrics and Gynecology Society.* ANALES DE PEDIATRIA. 2015; 82(2). IF: 0.773. Quartile: 4. (Article).
- Carbonell-Estrany X; Pérez-Yarza EG; García LS; Cabanas JMG; Boria EV; Atienza BB. *Long-Term Burden and Respiratory Effects of Respiratory Syncytial Virus Hospitalization in Preterm Infants-The SPRING Study.* PLOS ONE. 2015; 10(5). IF: 3.057. Quartile: 1. (Article).

Letters (not included in the impact factor):

- Botet F; Aloy JF; Luna MS. *Universal cytomegalovirus infection screening in premature newborns less than 1500g.* ANALES DE PEDIATRIA. 2015; 83(1) 69-69. IF: 0.773. Quartile: 4. (Letter).

| | No. | IF |
|---|-----|-----|
| Own publications | 2 | 4.7 |
| Joint publications | 1 | 0.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.1 |
| Second-quartile publications | 1 | 1.6 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 1 | 0.8 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 4 | 5.5 |

Pediatric endocrinology and hereditary diseases

Group director: BEGOÑA EZQUIETA ZUBICARAY

Type: Emerging

Research lines

- ▶ L1: Congenital suprarenal hyperplasia.
- ▶ L2: Neuro-cardio-facial-cutaneous syndromes and RASopathies.

Group members

- Consuelo Cansado Funes: Predoctoral.
- Begoña Ezquieta Zubicaray: Group director.

Theses

| Doctoral student | Título | Supervisor(s) | University |
|--------------------------|--|---------------------------|----------------------------------|
| Atilano Carcavilla Urqui | Síndrome de Noonan y otros síndromes neuro-cardio-facio-cutáneos. Estudio de la correlación genotipo-fenotipo y desarrollo de herramientas de apoyo al diagnóstico | Begoña Ezquieta Zubícaray | Universidad de Alcalá de Henares |

Publications

Total impact factor: 6.4

*Publications in journals with impact factor indexed
in Journal Citation Reports:*

- Rojnueangnit K; Xie J; Gomes A; Sharp A; Callens T; Chen YJ; Liu Y; Cochran M; Abbott MA; Atkin J; Babovic-Vuksanovic D; Barnett CP; Crenshaw M; Bartholomew DW; Basel L; Bellus G; Ben-Shachar S; Bialer MG; Bick D; Blumberg B; Cortes F; David KL; Destree A. *High Incidence of Noonan Syndrome Features Including Short Stature and Pulmonic Stenosis in Patients carrying NF1 Missense Mutations Affecting p.Arg1809: Genotype-Phenotype Correlation.* HUMAN MUTATION. 2015; 36(11) 1052-1063. IF: 5.089. Quartile: 1. (Article).

- Carcavilla A; García-Minaur S; Perez-Aytes A; Vendrell T; Pinto I; Guillén-Navarro E; González-Meneses A; Aoki Y; Grinberg D; Ezquieta B. *Cardiofaciocutaneous syndrome, a Noonan syndrome related disorder: Clinical and molecular findings in 11 patients.* MEDICINA CLINICA. 2015; 144(2) 67-72. IF: 1.267. Quartile: 2. (Article).

| | No. | IF |
|---|-----|-----|
| Own publications | 1 | 1.3 |
| Joint publications | 1 | 5.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 5.1 |
| Second-quartile publications | 1 | 1.3 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 2 | 6.4 |

Artificial circulation laboratory

Group director: JUAN FRANCISCO DEL CAÑIZO LÓPEZ

Type: Emerging

Research programs and lines

P1: Mechanical circulatory support

- ▶ L1: Preservation of renal function.
- ▶ L2: Hemodiafiltration.

P2: Decellularization and recellularization of the liver

P3: Isolated hepatic perfusion

Group members

- José María Barrio Gutiérrez: Predoctoral.
- Rosario Beneyto Cruz: Specialist assistant.
- Gregorio Pablo Cuerpo Caballero: Postdoctoral.
- Juan Francisco del Cañizo López: Group director.
- Benjamín Díaz-Zorita Aguilar: Predoctoral.
- María Dolores García-Cosío Carmena: Postdoctoral.
- Javier Otero Sáiz: Predoctoral.
- Ramón Pérez-Caballero Martínez: Postdoctoral.
- Manuel Ruiz Fernández: Postdoctoral.
- Enrique Velasco Sánchez: Predoctoral.
- José Ángel Zamorano Serrano: Other.

Patents

- Title: Método y Aparato de Hemodiafiltración.
Reference: PCT/ES2007/070081(Family with 3 patents)
Owner: FIBHGM.
Inventor: Juan Francisco del Cañizo López.
- Title: Dispositivo de Asistencia Ventricular.
Reference: P201331422
Owner: FIBHGM.
Inventor: Juan Francisco del Cañizo López, Manuel Ruiz Hernández.
- Title: Dispositivo para bombeo de sangre de forma tubular, con válvulas activas gobernado por vacío y aplicación del mismo.
Reference: P9501070 (Family with 14 patents)
Owner: SERMAS – HGUGM.
Inventor: Juan Francisco del Cañizo López.
- Title: Dispositivo para prevenir la neumonía asociada a la ventilación mecánica.
Reference: U201430814
Owner: FIBHGM.
Inventor: Juan Francisco del Cañizo López. Emilio Bouza Santiago. M^a Jesús Pérez.

Publications

Total impact factor: 5.2

Publications in journals with impact factor indexed in Journal Citation Reports:

- Morillas-Sendín P; Delgado-Baeza E; Delgado-Martos MJ; Barranco M; del Cañizo JF; Ruiz M; Quintana-Villamandos B. *Effects of Sevoflurane and Propofol on Organ Blood Flow in Left Ventricular Assist Devices in Pigs*. BIOMED RESEARCH INTERNATIONAL. 2015; IF: 2.134. Quartile: 3. (Article).

- Gil-Jaurena JM; González-López MT; Pérez-Caballero R; Pita A. *Atrioventricular valve repair along with Fontan completion*. CARDIOLOGY IN THE YOUNG. 2015; 25(7) 1421-1424. IF: 0.825. Quartile: 4. (Article).
- González-López MT; Pérez-Caballero-Martínez R; Amoros-Rivera C; Zamora-no-Serrano J; Pita-Fernández AM; Gil-Jaurena JM. *Orthotopic Heart Transplantation in an Adult Patient with Heterotaxy Syndrome: Surgical Implications*. JOURNAL OF CARDIAC SURGERY. 2015; 30(12) 910-912. IF: 0.783. Quartile: 4. (Article).
- Gil-Jaurena JM; Zunzunegui JL; Pérez-Caballero R; Pita A; González-López MT; Ballesteros F; Rodríguez A; Medrano C. *Surgical Management of Vascular Stents in Pediatric Cardiac Surgery: Clues for a Staged Partnership*. PEDIATRIC CARDIOLOGY. 2015; 36(8) 1685-1691. IF: 1.452. Quartile: 3. (Article).

Letters (not included in the impact factor):

- Rodriguez-Roda J; Cuerpo G; Rodríguez-Abella H; Ruiz M; Elizaga J; González-Pinto A. *Transapical Valve-in-valve Implantation in Failed Mitral Bioprostheses*. REVISTA ESPANOLA DE CARDIOLOGIA. 2015; 68(9) 810-811. IF: 4.596. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 4 | 5.2 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 3.6 |
| Fourth-quartile publications | 2 | 1.6 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 5 | 5.2 |

Evaluation of health services and clinical epidemiology

Group director: **ROSA PLÁ MESTRE**

Type: **Emerging**

Research lines

- ▶ L1: Evaluation of health care services and public health programs.
- ▶ L2: Patient safety and management of risks stemming from clinical practice.
- ▶ L3: Medication errors.
- ▶ L4: Prevention of health care-associated infection.

Group members

- **Alicia Díaz Redondo:** Predoctoral.
- **Marta Grande Armesto:** Predoctoral.
- **Isabel Izquierdo Membrilla:** Predoctoral.
- **César Llorente Parrado:** Predoctoral.
- **Beatriz Nieto Pereda:** Predoctoral.
- **Rosa Plá Mestre:** Group director.
- **Dolores Puente González:** Predoctoral.
- **M.^a Dolores Vigil Escribano:** Predoctoral.

Research projects – Competitive calls

- Principal investigator: Rosa Plá Mestre
Title: Calidad de vida y complicaciones según el tipo de parto.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015

Publications

Total impact factor: 11.2

Publications in journals with impact factor indexed in Journal Citation Reports:

- Díaz-Redondo A; Giraldez-García C; Carrillo L; Serrano R; García-Soidan FJ; Artola S; Franch J; Díez J; Ezkurra P; Millaruelo JM; Segui M; Sangros J; Martínez-Candela J; Munoz P; Goday A; Regidor E. *Modifiable risk factors associated with prediabetes in men and women: a cross-sectional analysis of the cohort study in primary health care on the evolution of patients with prediabetes (PREDAPS-Study)*. BMC Family Practice. 2015; 16. IF: 1.641. Quartile: 2. (Article).
- Miranda-Bautista J; de Gracia-Fernández C; Lopez-Ibanez M; Barrientos M; Gallo-Molto A; González-Arias M; González-Gil C; Díaz-Redondo A; Marín-Jiménez I; Menchén L. *Lipid Profile in Inflammatory Bowel Disease Patients on Anti-TNF alpha Therapy*. DIGESTIVE DISEASES AND SCIENCES. 2015; 60(7) 2130-2135. IF: 2.516. Quartile: 3. (Article).
- Olmedo C; Buno I; Pla R; Lomba I; Bardinet T; Banares R. *Managing a health research institute: towards research excellence through continuous improvement*. Gaceta Sanitaria. 2015; 29(6) 458-460. IF: 1.509. Quartile: 3. (Article).
- Giménez-Manzorro A; Romero-Jiménez RM; Calleja-Hernández MA; Plá-Mestre R; Munoz-Calero A; Sanjurjo-Sáez M. *Effectiveness of an electronic tool for medication reconciliation in a general surgery department*. INTERNATIONAL JOURNAL OF CLINICAL PHARMACY. 2015; 37(1) 159-167. IF: 1.339. Quartile: 4. (Article).
- Giráldez-García C; Sangros F; Díaz-Redondo A; Franch-Nadal J; Serrano R; Díez J; Buil-Cosiales P; García-Soidan FJ; Artola S; Ezkurra P; Carrillo L; Millaruelo

JM; Segui M; Martínez-Candela J; Munoz P; Goday A; Regidor E. *Cardiometabolic Risk Profiles in Patients With Impaired Fasting Glucose and/or Hemoglobin A1c 5.7% to 6.4%: Evidence for a Gradient According to Diagnostic Criteria The PREDAPS Study*. MEDICINE. 2015; 94(44). IF: 1.206. Quartile: 3. (Article).

- Gimeno CV; Compes CC; Puerta AA; Soriano LF; Álvarez MC; Lesmes IB; Mestre RP; Membrilla II; García-Perisi P. *IMPLEMENTATION OF A QUALITY MANAGEMENT SYSTEM IN A NUTRITION UNIT ACCORDING TO ISO 9001:2008*. NUTRICIÓN HOSPITALARIA. 2015; 32(3) 1386-1392. IF: 1.497. Quartile: 4. (Article).
- Díaz-Redondo A; Miranda-Bautista J; García-Lledo J; Gibert JP; Menchen L. *The potential usefulness of human leukocyte antigen typing for celiac disease screening: A systematic review and meta-analysis*. REVISTA ESPAÑOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(7) 423-429. IF: 1.455. Quartile: 4. (Review).

Publications in journals not indexed in Journal Citation Reports:

- Olmedo C; Plá R; Bellon J M; Bardinet T; Buno I; Banares R. *Hospital biomedical research through the satisfaction of a Health Research Institute professionals*. Revista de calidad asistencial: órgano de la Sociedad Española de Calidad Asistencial. (Article).

| | No. | IF |
|---|----------|-------------|
| Own publications | 2 | 3.1 |
| Joint publications | 5 | 8.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 1 | 1.6 |
| Third-quartile publications | 3 | 5.2 |
| Fourth-quartile publications | 3 | 4.3 |
| Nonindexed publications/No IF | 0 | - |
| Total publications (including publications without IF) | 7 | 11.2 |

Hospital pharmacy and pharmacogenomics

Group director: MARÍA SANJURJO SÁEZ

Type: Consolidated

Research programs and lines

P1: Drug therapy and safety

- ▶ L1: Pharmaceutical care and quality in drug therapy.
- ▶ L2: Innovation and safety in the medication use process.
- ▶ L3: Innovation, development, and professional competence.

P2: Pharmacogenetics and pharmacogenomics

- ▶ L4: Pharmacogenetics and pharmacogenomics.
- ▶ L5: Genetics in biomedicine.
- ▶ L6: Nanomedicine.

Group members

- **Maria Aranzazu Ais Larisgoitia:** Predoctoral.
- **Paula Arrabal Duran:** Predoctoral.
- **Silvia Buendía Bravo:** Predoctoral.
- **Cristina Casado Reina:** Predoctoral.
- **Esther Chamorro De Vega:** Predoctoral.
- **Roberto Collado Borrel:** Predoctoral.
- **Maria Esther Duran García:** Postdoctoral.
- **Vicente Escudero Vilaplana:** Postdoctoral.
- **Maria Isabel García García:** Support technician.
- **Xandra García González:** Predoctoral.
- **Raquel García Sánchez:** Predoctoral.

- **Alvaro Giménez Manzorro:** Postdoctoral.
- **Eva González-Haba Peña:** Predoctoral.
- **Ana Herranz Alonso:** Predoctoral.
- **M.ª Carmen Herrero Domínguez-Berrueta:** Predoctoral.
- **Sara Ibáñez García:** Predoctoral.
- **María Elena Lobato Matilla:** Predoctoral.
- **Luis Andrés López Fernández:** Miguel Servet.
- **Ana de Lorenzo Pinto:** Postdoctoral.
- **Silvia Manrique Rodríguez:** Postdoctoral.
- **Cecilia Manzanares Secades:** Postdoctoral.
- **Maria Luisa Martín Barbero:** Predoctoral.
- **Cecilia Martínez Fernández-Llamazares:** Postdoctoral.
- **Belén Marzal Alfaro:** Predoctoral.
- **Beatriz Monje García:** Predoctoral.
- **Ana Mur Mur:** Predoctoral.
- **Cristina Ortega Navarro:** Predoctoral.
- **María Sagrario Pernia López:** Predoctoral.
- **Jose Luis Revuelta Herrero:** Predoctoral.
- **Almudena Ribed Sanchez:** Postdoctoral.
- **Carmen Guadalupe Rodríguez González:** Postdoctoral.
- **Rosa María Romero Jiménez:** Postdoctoral.
- **Cristina Ruiz Martínez:** Predoctoral.
- **María Norberta Sánchez Fresneda:** Predoctoral.
- **María Sanjurjo Sáez:** Group director.
- **Camino Sarobe González:** Predoctoral.
- **María Tovar Pozo:** Predoctoral.

Research projects – Competitive calls

- Principal investigator: Luis Andrés López Fernández
Title: Validación de polimorfismos genéticos asociados a toxicidad al tratamiento basado en fluoropirimidinas en cáncer colorrectal.
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2015
- Principal investigator: María Sanjurjo Sáez
Title: E-Oncosalud: programa de tele-medicina aplicado al tratamiento ambulatorio del paciente onco-hematológico.
Funding body: Instituto de Salud Carlos III
Start date: 2014
End date: 2016

| Doctoral student | Title | Supervisor(s) | University |
|------------------------|---|--|------------------------|
| Almudena Ribed | Programa de seguimiento farmacoterapéutico de pacientes en tratamiento con antineoplásicos orales | Rosa Mª Romero Jiménez, Vicente Escudero Vilaplana, Irene Iglesias Peinado | UCM |
| Esther Ramírez Herráiz | Impacto económico de la utilización de los antagonistas del factor de necrosis tumoral en artropatías inflamatorias | Ana Herranz Alonso | Universidad de Granada |

Intellectual property

- Title: Biblioteca de fármacos para bombas de infusión inteligentes en las unidades de cuidados intensivos pediátricos.
Registry No.: 16/2011/7360
Owner: FIBHGM.
Authors: Amelia Sánchez Caridad, Silvia Manrique Rodríguez.
- Title: Curso sobre el manejo seguro de los sistemas automatizados de dispensación por el personal sanitaria de enfermería de planta y evaluación de su competencia
Registry No.: 16/2015/503
Owner: FIBHGM.
Authors: Elena Lobato, María Sanjurjo, Ana Herranz, Carmen Rodríguez
- Title: E-OncoSalud: Programa de Telemedicina aplicado al tratamiento ambulatorio del paciente onco-hematológico
Application No.: M-008404/2015
Owner: FIBHGM
Inventors: María Sanjurjo, Ana Mª Herranz, Vicente Escudero, Almudena Ribed, Roberto Collado, Sara Ibáñez.

- Title: NefroRules: Reglas clínicas para aumentar la seguridad del tratamiento en pacientes con insuficiencia renal
Application No.: M-008407/2015.
Owner: FIBHGM
Inventors: Sara Ibáñez, María Sanjurjo, Ana Herranz, Carmen Rodríguez, Mª Luisa Martín, Mª Ángeles Goicoechea, Eduardo Verde, José Luño.

Publications

Total impact factor: 30.8

Publications in journals with impact factor indexed in Journal Citation Reports:

- Marzal-Alfaro MB; Manrique-Rodríguez S; Alcaraz Romero A; García San Prudencio M; Fernández-Llamazares CM. *Systemic cytomegalovirus infection: changes in serum calcium and magnesium levels with foscarnet treatment.* Anales de pediatría. 2015; 82(1) e170-4. IF: 0.773. Quartile: 4. (Article).
- Valerio M; Munoz P; Rodríguez CG; Cálix B; Padilla B; Fernández-Cruz A; Sánchez-Somolinos M; Gijón P; Peral J. *Antifungal stewardship in a tertiary-care institution: a bedside intervention.* Clinical microbiology and infection. 2015; 21(5) -9. IF: 4.575. Quartile: 1. (Article).
- Valerio M; Munoz P; Rodriguez-González C; Sanjurjo M; Guinea J; Bouza E. *Training should be the first step toward an antifungal stewardship program.* ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2015; 33(4) 221-227. IF: 1.53. Quartile: 3. (Article).
- Herrero MCM; Romero AJA; Vilaplana VE; Lafever SNF; Fernández-Llamazares CM; Valderrama EB; López MV; de Castro P. *Pharmacological interaction between valproic acid and carbapenem: What about levels in pediatrics?* EUROPEAN JOURNAL OF PAEDIATRIC NEUROLOGY. 2015; 19(2) 155-161. IF: 1.923. Quartile: 2. (Article).
- Martínez-Cutillas J; Alerany-Pardo C; Borrás-Blasco J; Broto-Sumalla A; Burgos-SanJosé A; Climent-Bolta C; Escudero-Vilaplana V; Fernández-Fuente MA; Ferrit-Martin M; Gómez-Germa P; Martínez-Sesmero JM; Mayor-ga-Pérez J; Menchén-Viso B; Merino-Alonso J; Po. *The use of adalimumab, etanercept, golimumab and infliximab in rheumatic pathologies: variation between label dosage and real-world use.* EXPERT REVIEW OF PHARMA-COECONOMICS & OUTCOMES RESEARCH. 2015; 15(5) 851-858. IF: 1.631. Quartile: 3. (Article).
- Giménez-Manzorro A; García-González X; Rodríguez-González CG; Ochoa-Palominos A; Sanjurjo-Sáez M; Clemente-Ricote G. *Cost-effectiveness and safety of telaprevir and boceprevir for chronic hepatitis C in real-world clinical practice.* GASTROENTEROLOGIA Y HEPATOLOGIA. 2015; 38(10) 575-582. IF: 0.8. Quartile: 4. (Article).
- Manrique-Rodríguez S; Sánchez-Galindo AC; de Lorenzo-Pinto A; González-Vives L; López-Herce J; Carrillo-Álvarez A; Sanjurjo-Sáez M; Fernández. *Implementation of smart pump technology in a paediatric intensive care unit.* HEALTH INFORMATICS JOURNAL. 2015; 21(3) 209-222. IF: 1.578. Quartile: 3. (Article).
- Escudero-Vilaplana V; Ramírez-Herráiz E; Alanon-Plaza E; Trovato-López N; García-Vicuna R; Carreño-Pérez L; Morell-Baladrón A; Sanjurjo-Sáez M. *Efficiency of adalimumab, etanercept and infliximab in ankylosing spondylitis in clinical practice.* INTERNATIONAL JOURNAL OF CLINICAL PHARMACY. 2015; 37(5) 808-814. IF: 1.339. Quartile: 4. (Article).
- Giménez-Manzorro A; Romero-Jiménez RM; Calleja-Hernández MA; Plá-Mestre R; Munoz-Calero A; Sanjurjo-Sáez M. *Effectiveness of an electronic tool for medication reconciliation in a general surgery department.* INTERNATIONAL JOURNAL OF CLINICAL PHARMACY. 2015; 37(1) 159-167. IF: 1.339. Quartile: 4. (Article).
- de Lorenzo-Pinto A; García-Sánchez R; Izquierdo CP; Duran-García ME; Castuera-Gil AI; Andueza-Lillo JA; Sanjurjo-Sáez M. *Impact of the endorse study results on thromboprophylaxis prescribing patterns in medical patients attending the Emergency Department.* INTERNATIONAL JOURNAL OF CLINICAL PRACTICE. 2015; 69(1) 81-86. IF: 2.226. Quartile: 1. (Article).

- Parejo MIB; Borrego AMJ; Ruiz JA; Monjo MC; García-Peláez M; Hernanz BC; Hernández MAC; Fernández MIC; Riera MP; Sánchez RG; Sanchez LG; López CV; Echeverría MDM; Serrano PM. *MEDICATION LIST ASSESSMENT IN SPANISH HOSPITAL EMERGENCY DEPARTMENTS*. JOURNAL OF EMERGENCY MEDICINE. 2015; 48(4) 416-423. IF: 1.048. Quartile: 3. (Article).
- Rodríguez-González CG; Martín-Barbero ML; Herranz-Alonso A; Durango-Limáquez MI; Hernández-Sampelayo P; Sanjurjo-Sáez M. *Use of failure mode, effect and criticality analysis to improve safety in the medication administration process*. JOURNAL OF EVALUATION IN CLINICAL PRACTICE. 2015; 21(4) 549-559. IF: 1.053. Quartile: 3. (Article).
- Higuera-Pulgar I; Ribed A; Carrascal-Fabián ML; Breton-Lesmes I; Romero-Jiménez RM; Cuerda-Compes C; Velasco-Gimeno C; Camblor-Álvarez M. *DIE-TARY INTAKE AND NUTRITIONAL STATUS IN ONCOLOGY PATIENTS WHO START TREATMENT WITH TYROSINE KINASE INHIBITORS*. NUTRICION HOSPITALARIA. 2015; 32(3) 1200-1207. IF: 1.497. Quartile: 4. (Article).
- García-González X; Cortejoso L; García MI; Garcia-Alfonso P; Robles L; Gravialos C; González-Haba E; Marta P; Sanjurjo M; López-Fernández LA. *Variants in CDA and ABCB1 are predictors of capecitabine-related adverse reactions in colorectal cancer*. ONCOTARGET. 2015; 6(8) 6422-6430. IF: 5.008. Quartile: 1. (Article).
- Bodega G; Segura B; Ciordia S; Mena MD; López-Fernández LA; García MI; Trabado I; Suárez I. *Ammonia Affects Astroglial Proliferation in Culture*. PLOS ONE. 2015; 10(9). IF: 3.057. Quartile: 1. (Article).
- Klimova K; Suárez CP; Manzorro AG; Díaz JAP; Ricote GC; Alonso AH. *Long-acting octreotide (LAR) in the treatment of gastrointestinal bleeding from vascular lesions: study of cost-efficiency*. REVISTA ESPAÑOLA DE ENFERMEDADES DIGESTIVAS. 2015; 107(2) 79-88. IF: 1.455. Quartile: 4. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Escudero-Vilaplana V; Ribed A; Ibáñez-García S; Collado-Borrell R; Anglada-Martínez H; Herranz-Alonso A; Codina-Jane C; *E-OncoHealth: telemedicine program for monitoring onco-hematological outpatients*. Studies in health technology and informatics. 2015; 210. 960-1. (Article).
- Ibáñez-García S; Herranz-Alonso A; de la Rosa JL; Rodríguez-González CG; Martín-Barbero ML; Sanjurjo-Sáez M. *Development of an advanced clinical decision support system on medication safety*. Studies in health technology and informatics. 2015; 210. 968-9. (Article).

Letters (not included in the impact factor):

- De Lorenzo-Pinto A; García-Sánchez R; Bravo SB; Sanjurjo-Sáez M. *Instructing patients on how to alternate analgesics on discharge from the emergency department*. EMERGENCIAS. 2015; 27(1) 69-69. IF: 2.917. Quartile: 1. (Letter).

| | No. | IF |
|---|-----|------|
| Own publications | 8 | 14.8 |
| Joint publications | 8 | 16.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 4 | 14.9 |
| Second-quartile publications | 1 | 1.9 |
| Third-quartile publications | 5 | 6.8 |
| Fourth-quartile publications | 6 | 7.2 |
| Nonindexed publications/No IF | 3 | - |
| Total publications (including publications without IF) | 19 | 30.8 |

Clinical nutrition

Group director: PILAR GARCÍA PERIS

Type: Emerging

Research lines

- ▶ L1: Nutritional status of patients with peritoneal carcinomatosis undergoing cytoreductive surgery with hyperthermic intraperitoneal chemotherapy.
- ▶ L2: Nutritional intervention protocol with an enteral product formulated with partially hydrolyzed guar gum.
- ▶ L3: Quality of life in patients receiving home enteral nutrition.
- ▶ L4: Evaluation of nutritional status and micronutrients in patients receiving treatment with oral antineoplastic agents.
- ▶ L5: Diagnostic-therapeutic protocol for eosinophilic esophagitis.
- ▶ L6: Evaluation of cardiovascular risk in diabetic smokers and diabetic ex-smokers based on the UKPDS table.
- ▶ L7: Prospective study of catheter-related thrombosis.
- ▶ L8: Quality of care in home parenteral nutrition.
- ▶ L9: Evaluation of nutritional status in patients with advanced chronic liver disease.
- ▶ L10: Outcome of a series of HGUGM patients receiving home parenteral nutrition.
- ▶ L11: Nutrition and autism.
- ▶ L12: Evaluation of nutritional status in patients with renal insufficiency undergoing hemodialysis. Multicenter study.

Group members

- Irene Bretón Lesmes: Predoctoral.
- Miguel Cambor Álvarez: Predoctoral.
- María Luisa Carrascal Fabián: Trainee.
- María Cristina de la Cuerda Compés: Postdoctoral.
- Laura Frías Soriano: Predoctoral.
- Pilar García Peris: Senior researcher.
- Isabel Higuera Pulgar: Predoctoral.
- Cristina Velasco Gimeno: Predoctoral.
- Marta Motilla de la Cámara: Predoctoral.
- Loredana Arhip: Trainee.

Clinical practice guidelines

| Authors | Title | Publication |
|--|---|---|
| Pironi L(1), Arends J(2), Baxter J(3), Bozzetti F(4), Peláez RB(5), Cuerda C(6), Forbes A(7), Gabe S(8), Gillanders L(9), Holst M(10), Jeppesen PB(11), Joly F(12), Kelly D(13), Klek S(14), Irtun Ø(15), Olde Damink SW(16), Panisic M(17), Rasmussen HH(10), Staun M(11), Szczepanek K(14), Van Gossum A(18), Wanten G(19), Schneider SM(20), Shaffer J(21); Home Artificial Nutrition & Chronic Intestinal Failure; Acute Intestinal Failure Special Interest Groups of ESPEN | ESPEN endorsed recommendations. Definition and classification of intestinal failure in adults | Clin Nutr. 2015 Apr; 34(2):171-80. doi: 10.1016/j.clnu.2014.08.017 |

Publications

Total impact factor: 32.5

Publications in journals with impact factor indexed in Journal Citation Reports:

- Pironi L; Arends J; Baxter J; Bozzetti F; Pelaez RB; Cuerda C; Forbes A; Gabe S; Gillanders L; Hoist M; Jeppesen PB; Joly F; Kelly D; Klek S; Irtun O; Damink SWO; Panisic M; Rasmussen HH; Staun M; Szczepanek K; Van Gossum A; Wanten G; Schneider SM; Shaffe. *ESPEN endorsed recommendations. Definition and classification of intestinal failure in adults.* CLINICAL NUTRITION. 2015; 34(2) 171-180. IF: 4.487. Quartile: 1. (Article).
- Tapia MJ; Ocón J; Cabrejas-Gómez C; Ballesteros-Pomar MD; Vidal-Casariego A; Arraiza-Irigoyen C; Olivares J; Conde-García MAC; García-Manzanares A; Botella-Romero F; Quilez-Toboso RP; Cabrerizo L; Rubio MA; Chicharro L; Burgos R; Pujante P; Ferrer M; Zuga. *Nutrition-related risk indexes and long-term mortality in noncritically ill inpatients who receive total parenteral nutrition (prospective multicenter study).* CLINICAL NUTRITION. 2015; 34(5) 962-967. IF: 4.487. Quartile: 1. (Article).

- Olveira G; Tapia MJ; Ocón J; Cabrejas-Gómez C; Ballesteros-Pomar MD; Vidal-Casariego A; Arraiza-Irigoyen C; Olivares J; Conde-García MC; García-Manzanares A; Botella-Romero F; Quilez-Toboso RP; Cabrerizo L; Matia P; Chicharro L; Burgos R; Pujante P; Ferre. *PREVALENCE OF DIABETES, PRE-DIABETES, AND STRESS HYPERGLYCEMIA: INSULIN THERAPY AND METABOLIC CONTROL IN PATIENTS ON TOTAL PARENTERAL NUTRITION (PROSPECTIVE MULTICENTER STUDY).* ENDOCRINE PRACTICE. 2015; 21(1) 59-67. IF: 2.074. Quartile: 3. (Article).
- Dreesen M; Pironi L; Wanten G; Szczepanek K; Foulon V; Willems L; Gillanders L; Joly F; Cuerda C; Van Gossum A. *Outcome Indicators for Home Parenteral Nutrition Care: Point of View From Adult Patients With Benign Disease.* JOURNAL OF PARENTERAL AND ENTERAL NUTRITION. 2015; 39(7) 828-836. IF: 3.517. Quartile: 2. (Article).
- Aguayo PS; Munoz JMGD; Lesmes IB; León MVC. *Endocrinologic diseases management during breastfeeding.* MEDICINA CLINICA. 2015; 144(2) 73-79. IF: 1.267. Quartile: 2. (Article).
- Olmos MAM; Cancer E; Breton I; Álvarez V; Abiles V; Abiles J; Peláez N; Mellado C; Mazure RA; Culebras JM. *INTRAGASTRIC BALLOON: A REVIEW CONCERNING ALTERNATIVE BALLOONS COMPARED TO THE CLASSICAL ONES (BIOENTERICS).* NUTRICION HOSPITALARIA. 2015; 31(1) 84-91. IF: 1.497. Quartile: 4. (Review).
- Wanden-Berghe C; Compes JCC; Peláez RB; Candela CG; Casas NV; de la Cruz AP; Villares JMM; Pérez FC; Orbaiz CG; Faedo CM; Lazaro MAP; Marín MG; Luna PPG; Martín PM; Paris AS; Pérez LML; Folgueras TM; Zafra MVG; Hernández A; Martín CC; Llanos JPS; Zugasti. *A home and ambulatory artificial nutrition (NADYA) Group Report, Home Parenteral Nutrition in Spain, 2013.* NUTRICION HOSPITALARIA. 2015; 31(6) 2533-2538. IF: 1.497. Quartile: 4. (Article).
- Gimeno CV; Compes CC; Puerta AA; Soriano LF; Álvarez MC; Lesmes IB; Mestre RP; Membrilla II; García-Perisi P. *IMPLEMENTATION OF A QUALITY MANAGEMENT SYSTEM IN A NUTRITION UNIT ACCORDING TO ISO 9001:2008.* NUTRICION HOSPITALARIA. 2015; 32(3) 1386-1392. IF: 1.497. Quartile: 4. (Article).

- Higuera-Pulgar I; Ribed A; Carrascal-Fabián ML; Breton-Lesmes I; Romero-Jiménez RM; Cuerda-Compes C; Velasco-Gimeno C; Camblor-Álvarez M. *DIE-TARY INTAKE AND NUTRITIONAL STATUS IN ONCOLOGY PATIENTS WHO START TREATMENT WITH TYROSINE KINASE INHIBITORS.* NUTRICION HOSPITALARIA. 2015; 32(3) 1200-1207. IF: 1.497. Quartile: 4. (Article).
 - Llanos JPS; Ferrer MF; Álvarez-Sala-Walther L; Bray BG; González LM; Lesmes IB; Esteban BM. *Protein malnutrition incidence comparison after gastric bypass versus biliopancreatic diversion.* NUTRICION HOSPITALARIA. 2015; 32(1) 80-86. IF: 1.497. Quartile: 4. (Article).
 - Wanden-Berghe C; Cunill JLP; Compes CC; Villares JMM; de la Cruz AP; Peláez RB; Candela CG; Casas NV; Lazaro MAP; Faedo CM; Orbaiz CG; Marín MG; Paris AS; Alvarez J; Martos EAS; Folgueras TM; Martin CC; Martin PM; Zugasti A; Perez FC; Zafra MVG; Gonzalez. *HOME AND AMBULATORY ARTIFICIAL NUTRITION (NADYA) GROUP REPORT, HOME PARENTERAL NUTRITION IN SPAIN, 2014.* NUTRICION HOSPITALARIA. 2015; 32(6) 2380-2384. IF: 1.497. Quartile: 4. (Article).
 - Wanden-Berghe C; Hernández JA; Peláez RB; Compes CC; Martín PM; Pérez LML; Candela CG; de la Cruz AP; Fernández AC; Olmos MAM; González LL; Martin CC; García PL; Rocamora JAI; Llanos JPS; Pera DC; Marín MG; Lazaro MAP; Sánchez CB; Soler AR; Orbáiz CG; Gail. *A home enteral nutrition (HEN); Spanish registry of NADYA-SENPE group; for the year 2013.* NUTRICION HOSPITALARIA. 2015; 31(6) 2518-2522. IF: 1.497. Quartile: 4. (Article).
 - Olveira G; Tapia MJ; Ocón J; Cabrejas-Gómez C; Ballesteros-Pomar MD; Vidal-Casariego A; Arraiza-Irigoyen C; Olivares J; Conde-García MC; García-Manzanares A; Botella-Romero F; Quilez-Toboso RP; Matia P; Rubio MA. *Hypoglycemia in noncritically ill patients receiving total parenteral nutrition: A multicenter study. (Study group on the problem of hyperglycemia in parenteral nutrition; Nutrition area of the Spanish Society of Endocrinology and Nutrition).* NUTRITION. 2015; 31(1) 58-63. IF: 2.839. Quartile: 2. (Article).
 - González I; Rubio MA; Cordido F; Breton I; Morales MJ; Vilarrasa N; Monereo S; Lecube A; Caixas A; Vinagre I; Goday A; Garcia-Luna PP. *Maternal and Perinatal Outcomes After Bariatric Surgery: a Spanish Multicenter Study.* OBESITY SURGERY. 2015; 25(3) 436-442. IF: 3.346. Quartile: 1. (Article).
- Publications in journals without impact factor indexed in Journal Citation Reports:**
- Melero VMA; Llanes MMSO; Salas MS; Hualpa JCP; de la Cámara MM; Yurrita LC. *Comparison of differentiated thyroid carcinoma staging systems in a Spanish population.* Endocrinología y Nutrición. 2015; 62(4) 152-160. (Article).

| | No. | IF |
|---|-----------|-------------|
| Own publications | 2 | 3.0 |
| Joint publications | 12 | 29.5 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 3 | 12.3 |
| Second-quartile publications | 3 | 7.6 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 7 | 10.5 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 15 | 32.5 |

Vascular pathophysiology and pharmacology

Group director: FRANCISCO PÉREZ VIZCAÍNO

Type: Consolidated

Research programs and lines

- ▶ L1: Vasoactive factors involved in the regulation of pulmonary vascular tone.
- ▶ L2: Vascular protection mechanisms of flavonoids.

Group members

- **Bianca Barreira Barba:** Support technician.
- **María Callejo Arranz:** Research assistant.
- **Ángel Cogolludo Torralba:** Postdoctoral.
- **Andrea Martínez Ramas:** Support technician.
- **Gema Mondéjar Parreño:** Research assistant.
- **Daniel Morales Cano:** FPI.
- **Laura Moreno Gutiérrez:** Miguel Servet.
- **Rachele Pandolfi:** Postdoctoral.
- **Francisco Pérez Vizcaíno:** Group director.

Theses

| Doctoral student | Title | Supervisor(s) | University |
|------------------|---|--|------------|
| Rachele Pandolfi | Papel de los esfingolípidos en las alteraciones vasculares asociadas al daño pulmonar agudo | Francisco Pérez Vizcaíno, Laura Moreno Gutiérrez | UCM |

Publications

Total impact factor: 22.9

Publications in journals with impact factor indexed in Journal Citation Reports:

- Morales-Cano D; Moreno L; Barreira B; Pandolfi R; Chamorro V; Jiménez R; Villamor E; Duarte J; Pérez-Vizcaíno F; Cogolludo A. *Kv7 channels critically determine coronary artery reactivity: left-right differences and down-regulation by hyperglycaemia.* CARDIOVASCULAR RESEARCH. 2015; 106(1) 98-108. IF: 5.465. Quartile: 1. (Article).
- Toral M; Romero M; Jiménez R; Mahmoud AM; Barroso E; Gómez-Guzmán M; Sánchez M; Cogolludo A; García-Redondo AB; Briones AM; Vázquez-Carrera M; Pérez-Vizcaíno F; Duarte J. *Carnitine palmitoyltransferase-1 up-regulation by PPAR-beta/delta prevents lipid-induced endothelial dysfunction.* CLINICAL SCIENCE. 2015; 129(9) 823-837. IF: 4.996. Quartile: 1. (Article).
- Jiménez R; López-Sepulveda R; Romero M; Toral M; Cogolludo A; Pérez-Vizcaíno F; Duarte J. *Quercetin and its metabolites inhibit the membrane NADPH oxidase activity in vascular smooth muscle cells from normotensive and spontaneously hypertensive rats.* FOOD & FUNCTION. 2015; 6(2) 409-414. IF: 2.686. Quartile: 1. (Article).

- Toral M; Gómez-Guzmán M; Jiménez R; Romero M; Zarzuelo MJ; Utrilla MP; Hermenegildo C; Cogolludo A; Pérez-Vizcaíno F; Gálvez J; Duarte J. *Chronic peroxisome proliferator-activated receptor beta/delta agonist GW0742 prevents hypertension, vascular inflammatory and oxidative status, and endothelial dysfunction in diet-induced obesity.* JOURNAL OF HYPERTENSION. 2015; 33(9) 1831-1844. IF: 5.062. Quartile: 1. (Article).

- Prieto-Lloret J; Ramírez M; Olea E; Moral-Sanz J; Cogolludo A; Castaneda J; Yubero S; Agapito T; Gómez-Nino A; Rocher A; Rigual R; Obeso A; Pérez-Vizcaíno F; González C. *Hypoxic pulmonary vasoconstriction, carotid body function and erythropoietin production in adult rats perinatally exposed to hyperoxia.* JOURNAL OF PHYSIOLOGY-LONDON. 2015; 593(11) 2459-2477. IF: 4.731. Quartile: 1. (Article).

Publications in journals without impact factor indexed in Journal Citation Reports:

- Duarte J; Pérez-Vizcaíno F. *Cardiovascular protection by flavonoids. Pharmacokinetic mystery.* ARS PHARMACEUTICA. 2015; 56(4) 193-200. (Article).

| | No. | IF |
|---|-----|------|
| Own publications | 1 | 5.5 |
| Joint publications | 4 | 17.5 |
| First-decile publications | 1 | 4.7 |
| First-quartile publications | 5 | 22.9 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 6 | 22.9 |

NURSING GROUP

Area coordinator:
Ana M^a García Pozo



Research in nursing

Group director: ANA M^a GARCÍA POZO

Research lines

- ▶ L1: Evidence-based nursing care: implementation and evaluation of results in clinical practice and patient quality of life.
- ▶ L2: Advanced role in clinical care.

Research on the care provided by the nursing group is beginning to generate a large number of major, mainly collaborative projects. Some of these projects are funded with other nursing groups from other hospitals in the Comunidad de Madrid and the Universidad Complutense de Madrid (UCM).

These projects are integrated in the research line of health services and care.

The group is composed of nurses from all professional areas (care, teaching, and management), and a large number are lecturers at UCM.

Its organizational structure is unique in the Madrid health area, in that it provides support and advice and promotes research in nursing through the Unidad de Apoyo a la Investigación de Enfermería (UAIE [*Nursing Research Support Unit*]).

The group has a strong certified research training plan for nurses and nursing trainees. Similarly, the group runs a large number of research activities to promote research, such as one-day courses, prizes for research, and access to documentary and research resources.

Group members

- **Mónica Blanco Daza:** Predoctoral.
- **Elena Calderari Fernández:** Predoctoral.
- **Laura Collados Gómez:** Postdoctoral.
- **María Isabel Durango Limárquez:** Predoctoral.
- **Julita Fernández Arranz:** Predoctoral.
- **Raquel Fernández Blanco:** Predoctoral.
- **Ana María García Pozo:** Group director.
- **Concepción González Lluva:** Predoctoral.
- **Mª Dolores González Baz:** Predoctoral.
- **Luis Guerra Sánchez:** Postdoctoral.
- **Gloria Guerrero Márquez:** Predoctoral.
- **Esther Guijarro Jiménez:** Predoctoral.
- **Adela Harto Castaño:** Predoctoral.
- **Carmen Lobo Rodríguez:** Predoctoral.
- **Raquel López Sánchez:** Postdoctoral.
- **Milagros Martín Fernández:** Predoctoral.
- **Teresa Martínez Castellanos:** Predoctoral.
- **Margarita Medina Torres:** Predoctoral.
- **María Nieves Moro Tejedor:** Predoctoral.
- **Cristina Pascual Fernández:** Postdoctoral.
- **María de las Mercedes Peña Granger:** Predoctoral.
- **David Peña Otero:** Postdoctoral.
- **Julia de las Pozas Abril:** Predoctoral.
- **Manuel Jesús Ruiz Henestrosa Campos:** Predoctoral.
- **María Consuelo Soto Lucia:** Predoctoral.
- **Mª José Toraño Olivera:** Predoctoral.
- **Fernando Trujillo Gallego:** Predoctoral.
- **Paz Vaquero Lozano:** Predoctoral.



Research projects – Competitive calls

- Principal investigator: Ana María García Pozo
Title: Estudio de la relación de la autopercepción profesional de las enfermeras de la Comunidad de Madrid con los resultados de indicadores de calidad de cuidados.
Funding body: ISCIII
Start date: 2013
End date: 2015
- Principal investigator: Laura Collados Gómez
Title: Eficacia de leche materna extraída oral o sacarosa oral para la analgesia en neonatos pretérmino sometidos a venopunción.
Funding body: ISCIII
Start date: 2013
End date: 2015
- Principal investigator: Carmen Lobo Rodríguez
Title: Efectividad de una intervención precoz en el diagnóstico y tratamiento de la hiponatremia para la prevención de caídas en pacientes hospitalizados.
Funding body: F. Mutua Madrileña
Start date: 2014
End date: 2017

Theses

| Doctoral student | Título | Supervisor(s) | University |
|----------------------|--|-------------------------------------|-----------------------------|
| Raquel López Sánchez | Limitación del Esfuerzo Terapéutico en las Unidades de Cuidados Intensivos Pediátricos: Opinión y Actitud de los Profesionales | Ruth Gil Prieto, Ana Mª García Pozo | Universidad Rey Juan Carlos |

| Doctoral student | Título | Supervisor(s) | University |
|----------------------|---|--|-----------------------------|
| Laura Collados Gómez | Eficacia de leche materna extraída versus sacarosa oral para la analgesia en neonatos pretérminos sometidos a venopunción | Rodrigo Jiménez García, Ana Mª García Pozo | Universidad Rey Juan Carlos |
| Luis Guerra Sánchez | Efecto sobre la calidad de vida en pacientes con Insuficiencia Cardiaca en una Intervención Enfermera de mejora nutricional | Carmen Martínez Rincón | Universidad Complutense |

Publications

Total impact factor: 5.6

Publications in journals with impact factor indexed in Journal Citation Reports:

- Santiago B; Guerra L; García-Morin M; González E; González A; Izquierdo G; Martos A; Santos M; Navarro M; Hernández-Sampelayo MT; Saavedra-. *Clostridium difficile isolation in children hospitalized with diarrhea.* ANALES DE PEDIATRÍA. 2015; 82(6) 417-425. IF: 0.773. Quartile: 4. (Article).
- Fernández MCP; Cerro MCI; Estévez LC; Carrascosa MAJ; Torres MM; Pozo AMG. *Questionnaire to evaluate the importance of the family in nursing care. Validation of the Spanish version (FINC-NA).* ANALES DEL SISTEMA SANITARIO DE NAVARRA. 2015; 38(1) 31-39. IF: 0.783. Quartile: 4. (Article).
- Rodríguez-González CG; Martín-Barbero ML; Herranz-Alonso A; Durango-Limáquez MI; Hernández-Sampelayo P; Sanjurjo-Sáez M. *Use of failure mode, effect and criticality analysis to improve safety in the medication adminis-*

tration process. JOURNAL OF EVALUATION IN CLINICAL PRACTICE. 2015; 21(4) 549-559. IF: 1.053. Quartile: 3. (Article).

- Guerra-Sánchez L; Martínez-Rincón C; Fresno-Flores M. PREVALENCE OF UNDERNUTRITION IN HOSPITAL PATIENTS WITH UNBALANCED HEART FAILURE; SUBJECTIVE GLOBAL ASSESSMENT LIKE PROGNOSIS SIGN. NUTRICION HOSPITALARIA. 2015; 31(4) 1757-1762. IF: 1.497. Quartile: 4. (Article).
- Guerra-Sánchez L; Martínez-Rincón C; Fresno-Flores M. NUTRITIONAL SCREENING IN HEART FAILURE PATIENTS: 5 METHODS REVIEW. NUTRICION HOSPITALARIA. 2015; 31(2) 890-899. IF: 1.497. Quartile: 4. (Article).

Letters (not included in the impact factor):

- Márquez GG; Díez SG. On studies with multiple statistical comparisons. EMERGENCIAS. 2015; 27(2) 137-138. IF: 2.917. Quartile: 1. (Letter).

- Guerra-Sánchez L; Martínez-Rincón C; Fresno-Flores M. *Nutritional screening in heart failure patients: 5 methods review*. NUTRICION HOSPITALARIA. 2015; 31(6) 2783-2785. IF: 1.497. Quartile: 4. (Letter).

| | No. | IF |
|---|-----|-----|
| Own publications | 3 | 3.8 |
| Joint publications | 2 | 1.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 1.1 |
| Fourth-quartile publications | 4 | 4.6 |
| Nonindexed publications/No IF | 2 | - |
| Total publications (including publications without IF) | 7 | 5.6 |

4

Other research activities



- ▶ Clinical associate groups in the process of integration
- ▶ Publications generated together with Research Support Units
- ▶ Publications generated from the management of the IiSGM

Clinical associate groups in the process of integration

Publications

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Total impact factor: 63.1

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| | No. | IF |
|---|-----|------|
| Own publications | 2 | 7.7 |
| Joint publications | 15 | 55.4 |
| First-decile publications | 3 | 21.1 |
| First-quartile publications | 9 | 45.1 |
| Second-quartile publications | 3 | 9.0 |
| Third-quartile publications | 4 | 7.2 |
| Fourth-quartile publications | 1 | 1.8 |
| Nonindexed publications/No IF | 1 | - |
| Total publications (including publications without IF) | 18 | 63.1 |

Publications generated from the management of the IISGM

Publications

*Publications in journal with impact factor indexed
in Journal Citation Reports:*

- Olmedo C; Buno I; Pla R; Lomba I; Bardinet T; Banares R. Managing a health research institute: towards research excellence through continuous improvement. *Gaceta Sanitaria.* 2015; 29(6) 458-460. FI: 1,509. Cuartil: 3. (Article).

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| CSL BEHRING, S.A. | ROCHE FARMA, S.A. | BD MEDICAL SURGICAL |
| EPYCARDIO, S.L. | | LABORATORIOS VIIV HEALTHCARE, S.L. |
| FERRER INTERNACIONAL, S.A. | | |
| FRESENIUS KABI ESPAÑA, S.A. | | |
| FUNDACIÓN BIOGEN IDEC | | |

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