

Annual Scientific Report 2013



Instituto de investigación Sanitaria Gregorio Marañón

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1

Presentation

Presentation

As is now our tradition, we are pleased to present the Scientific Report of Instituto de Investigación Sanitaria del Hospital General Universitario Gregorio Marañón (Health Research Institute of Hospital General Universitario Gregorio Marañón [IiSGM]). The publication of this report is increasingly important, given the consolidation of the scientific activity and structure shown within. In fact, the 2013 Report not only represents an accurate and detailed analysis of the research activity carried out in the many Areas and Groups, but it also provides a unique opportunity for a detailed and strategic analysis of the Institute's development.

Visibility and dissemination of our research activity is paramount in two senses. On the one hand, it creates public awareness of the research activity of the IiSGM in recognition of the enormous effort made by the individual research groups. On the other, the importance of presenting the research and innovation capacity of IiSGM to other institutions and social agents.

From the perspective of describing our scientific activity, the Report expressly recognizes the efforts made by each and every research group in a particularly economic climate. In this sense, the scientific development associated with the priority research areas and their corresponding groups has generated considerable growth in the Institute's scientific output, which is now approaching an impact factor of 2000 points. Once again, we would like to stress the extreme rigor with which publications are assigned to the IiSGM and which is clearly responsible for the robustness of the indicator. However, this indicator is not the only one that has increased this year. The mean impact factor, the number of publications led by researchers from the IiSGM, the extent of our involvement in international publications, and the number of original articles published in first-decile and first-quartile journals illustrate the growing qualitative importance of our work.

Similarly, we would like to highlight the commitment made by IiSGM groups to the training of researchers, a commitment which can be seen in the considerable number of doctoral theses written and presented during 2013.

Another highly relevant aspect this year was the consolidation of the Committee and of the Innovation Unit, whose structure is now dynamic, open, streamlined, and modern. In the coming years,



innovation will play a key role in institutional research activity; therefore, the presence of the IiSGM Innovation Unit is critical if we are to become a reference institution in this area. The results of the unit's initial activity can be seen in the fact that the IiSGM now has an innovation portfolio that is adapted to the present situation. In addition, it has huge potential for growth, and is highly attractive for the productive and industrial sectors.

None of this progress would have been possible without our researchers' ability to perform effectively in competitive calls for resources. Of note, in 2013, despite the setback of not being awarded the Integrated Excellence Project, investigators from the IiSGM competed successfully in the various calls. Also worthy of mention is our ability to obtain human resources for our programs and thus prepare the next generation of researchers.

Refurbishment of the Experimental Medicine and Surgery Unit is a milestone. The improved and wider infrastructure facilitates access to Research Support Services and interaction between researchers from different areas and groups. This achievement, which was a result of the PROMIIS call in 2012 and the generous contribution of the research groups themselves is a major advance that fits clearly in the research axes set out in the Institute's Strategic Plan.

Presentation

Through the Biomedical Research Foundation of Hospital Gregorio Marañón (FIBHGM), the IISGM is making a considerable effort to continuously improve its internal quality and management processes. Moreover, these changes are being made in a particularly complex administrative and economic climate and have led to an ambitious training plan for researchers thanks to the incalculable competitive skills of the recently created Training Committee.

Annual scientific report provides us with an excellent opportunity to express our sincere thanks to all the researchers at the IISGM for their constant effort during this difficult time for hospital-based research. Only through a collective undertaking that is duly aligned with a strategy based on improving patient health can we provide the solid results presented in this report.

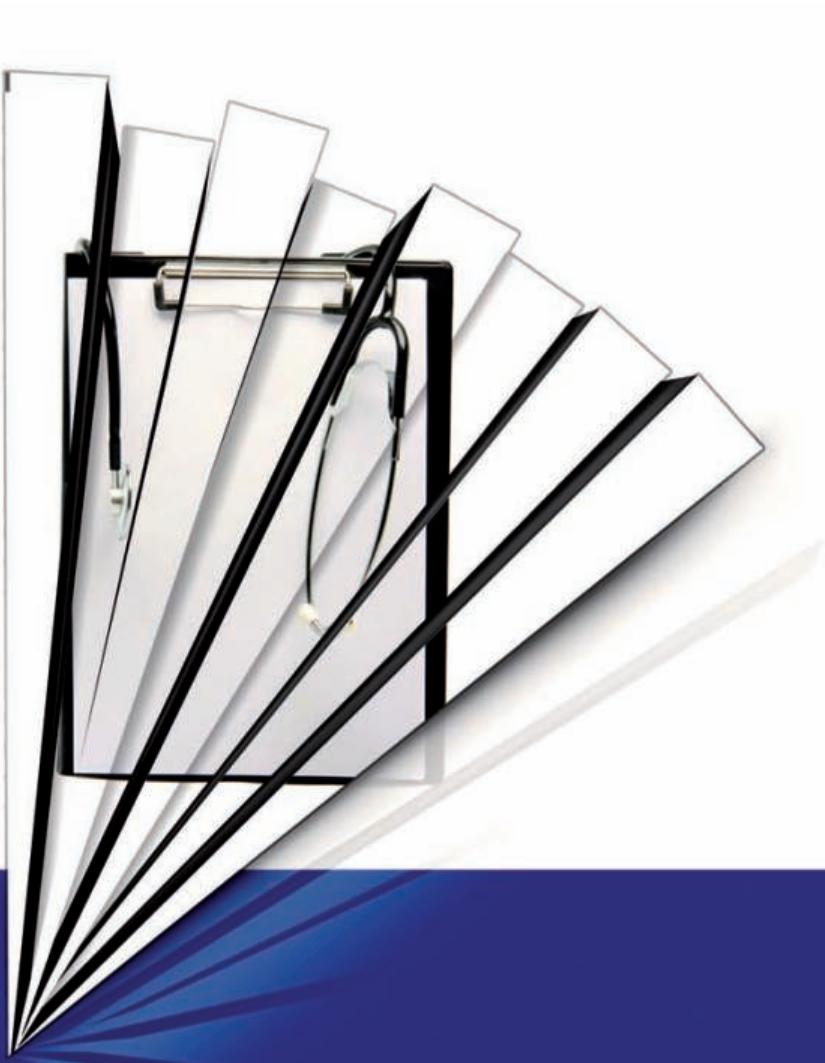
We are extremely grateful to the Area Coordinators, Group Directors, and all the Research Groups and Clinical Services that have played such an indispensable role in the development and reputation of the IISGM. Without their intense, committed, and constant participation over the years, the reality of the Institute would have been quite different. Special mention must be made of our young researchers, who, under very difficult circumstances, place their talent and their determination at the service of research in our Institute.

We would like to finish on an optimistic note. We believe our Institute is progressing appropriately and in such a way as to generate major expectations for future growth. Few institutions can boast of a structure that brings together so harmoniously the essential pillars of biomedical research, namely, the questions raised in daily practice and the cooperative vocation to answer them.

Thank you.

Dr. Rafael Bañares Cañizares
Scientific Director, IISGM

Ricardo Herranz Quintana
Manager, Hospital General Universitario Gregorio Marañón



2

Executive summary

GLOBAL ANALYSIS

The analysis of the scientific output of IISGM and its bibliographic impact is an essential element in the evaluation of the institute's research activity, given that it reflects the competitiveness of the institute's researchers.

The Scientific Report was prepared by analyzing journals indexed in Web of Science, more specifically in the Web of Science Core Collection.

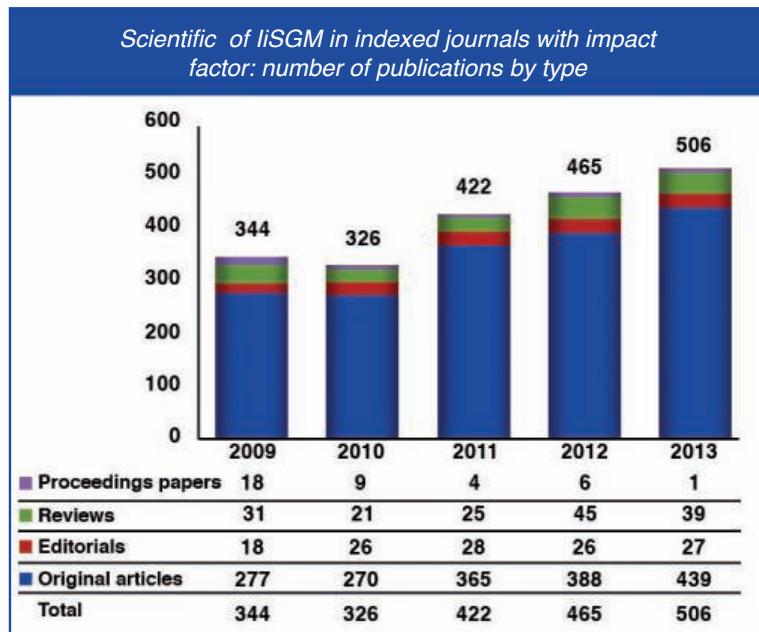
It is important to remember that only those publications in which Hospital General Universitario Gregorio Marañón was included in the affiliations in Web of Science were taken into consideration when assigning publications to Areas and Groups. Nevertheless, we also performed an exhaustive search to identify possible inaccurate denominations. Therefore, we have not included publications in which the researcher's affiliation to the Institute/Hospital does not appear.

As in previous years, 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 (eg, letters to the editor and case reports). The impact factor presented in the figures corresponds to the relevant 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.

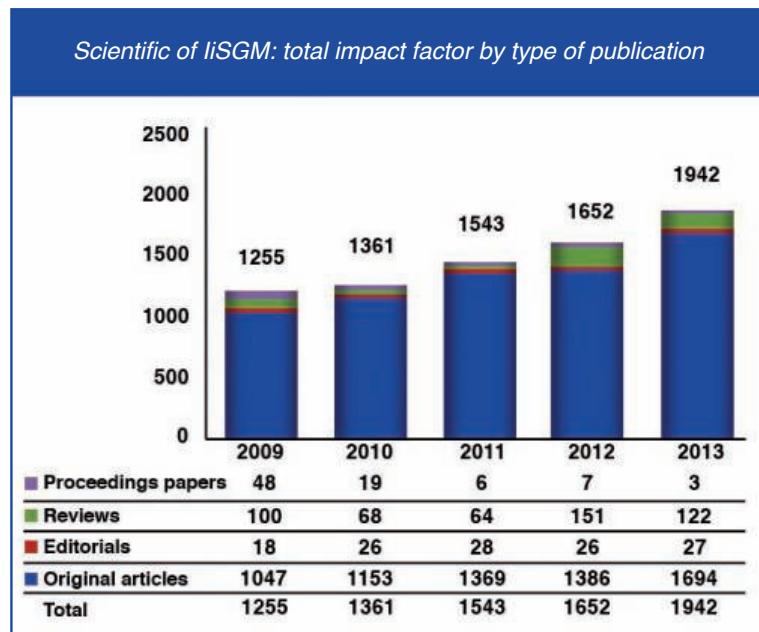
The objective of the methodology used is none other than to apply internationally validated bibliometric tools for the analysis of scientific output, thus ensuring the robustness of the data contained in the Research Report.

In quantitative terms, the scientific production of IISGM in 2013 consolidates the growing trend observed in recent years, with a total of 506 indexed publications, representing a total impact factor of 1942 points, ie, 17.5% higher than in 2012.

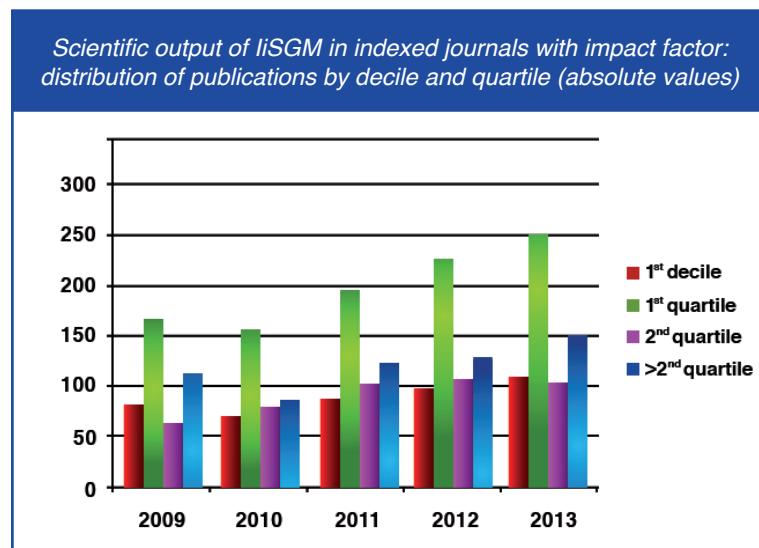
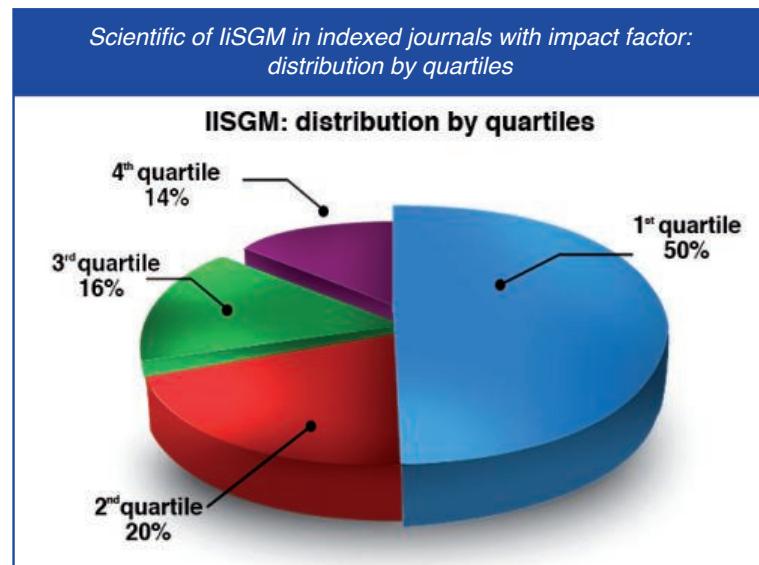


The following figure summarizes the global impact factor corresponding to the scientific production of the IISGM for each of the last 5 years and its distribution according to the different types of publication. As can be observed, the highest impact factor percentage corresponds to original articles and review articles, both of which account for 93% of the total impact factor. This year, it is important to note the increase in the number of editorials and reviews was achieved to the detriment mainly of original articles, and this shift probably represents the growing importance of the scientific opinion of researchers from the IISGM.

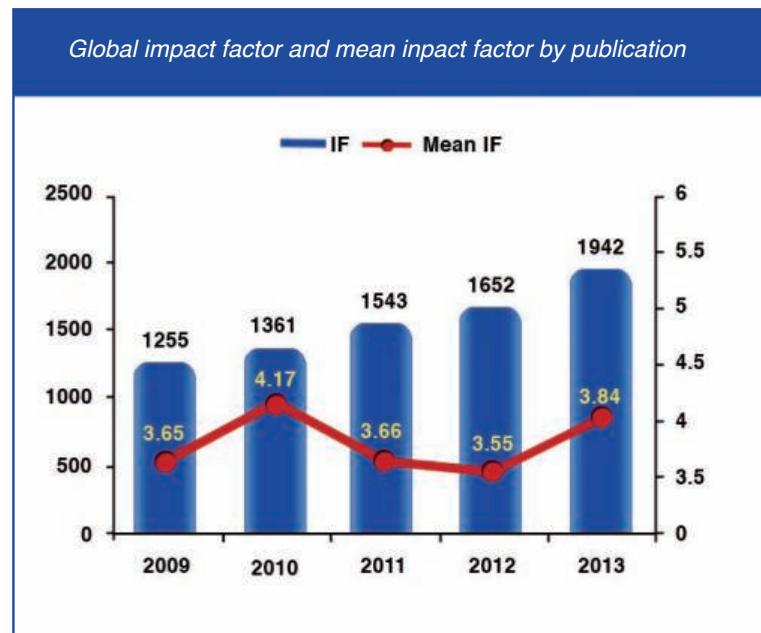
GLOBAL ANALYSIS



The distribution of liSGM publications according to quartile and decile is shown in the following figure. The number of first-decile and first-quartile publications continues to be greater than last year and slightly higher than the total number of publications for the year, whereas the mean has increased significantly.

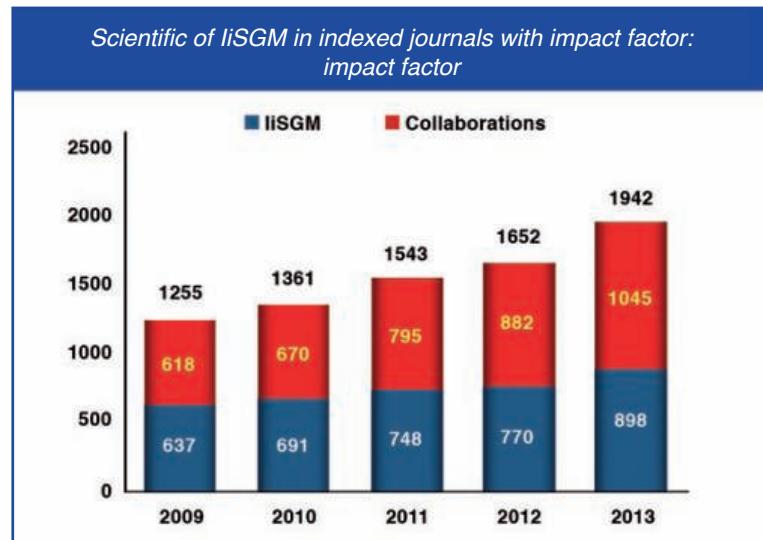
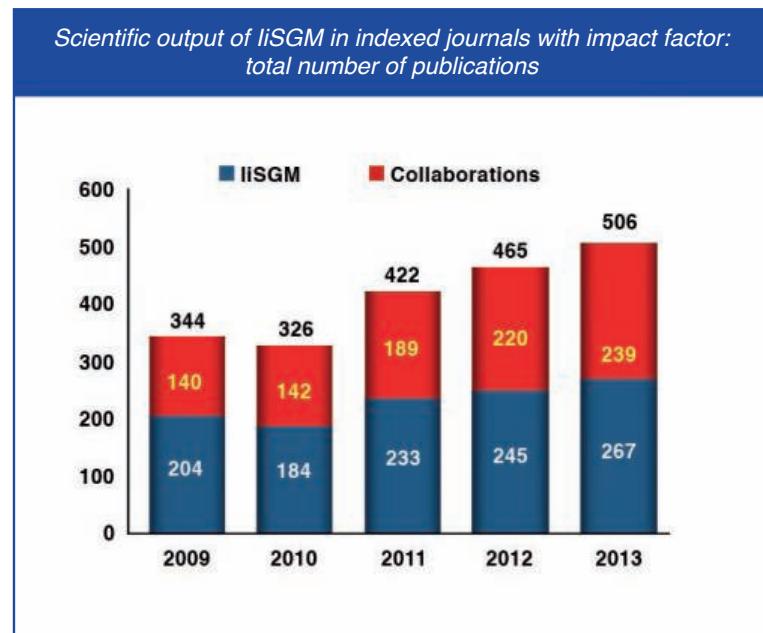


GLOBAL ANALYSIS



In the analysis of activity for this year, we specifically included those publications whose principal authors (first, last, or corresponding author) are liSGM researchers.

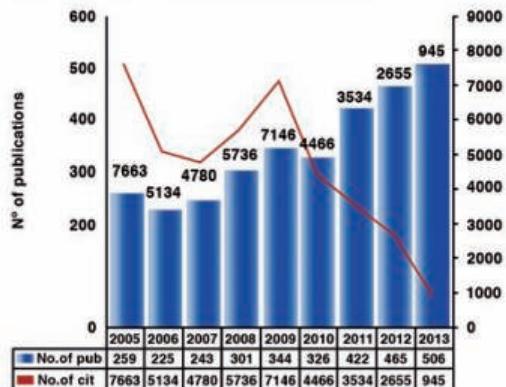
As for joint scientific output, 47% of publications and 54% of the impact factor arise from articles written with other institutions. Moreover, approximately 50% of the scientific output of liSGM is accounted for by articles whose leading authors belong to the Institute.



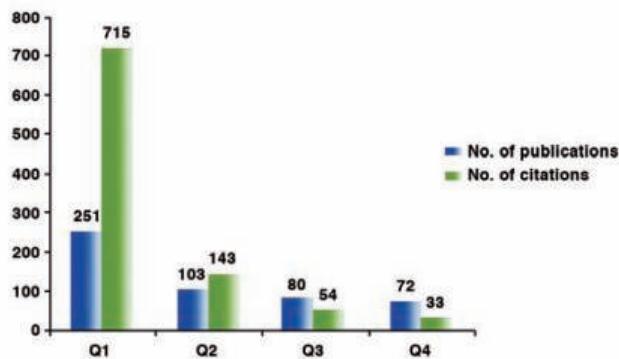
GLOBAL ANALYSIS

The number of citations for Institute publications over time is logically greater in older publications, although the number of citations in relatively recent publications (2008, 2009, and 2010) is noteworthy, as is the number of first-quartile citations.

Number of publications and citations



Number of publications and citations by quartile



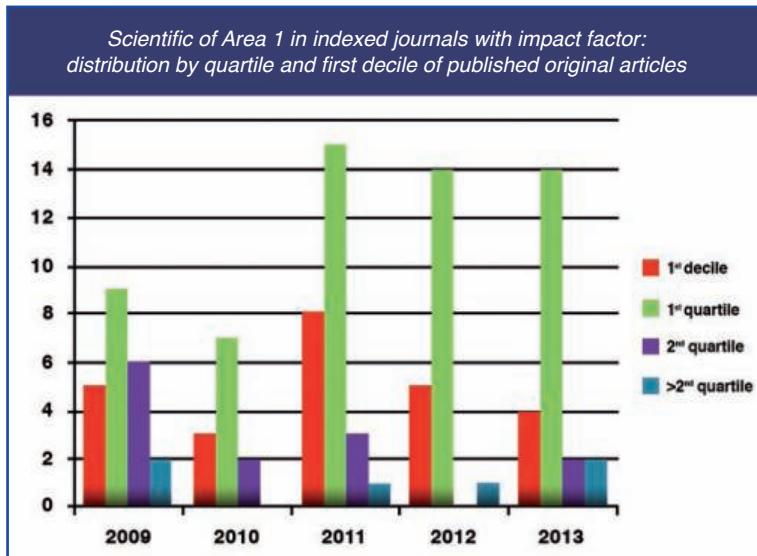
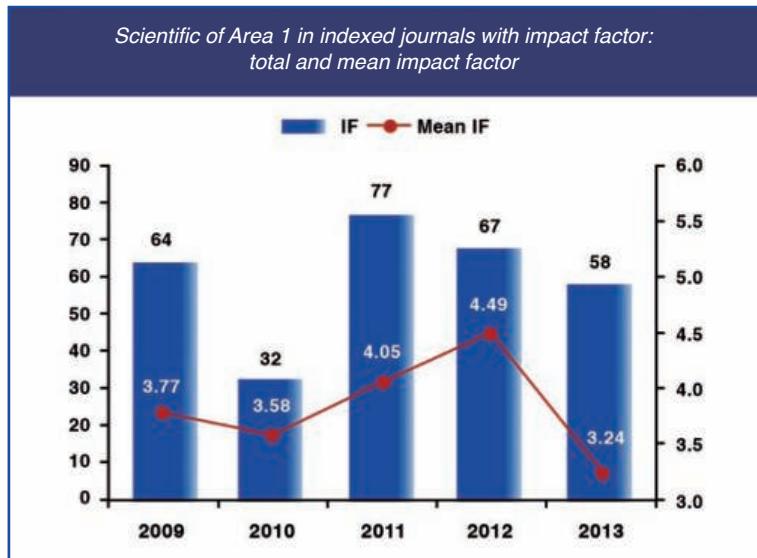
Finally, one of the most relevant elements within the scientific structure of research institutes is the grouping of research activity in priority areas, which are characterized by their scientific and social importance and by their capacity for transferring knowledge to society.

LiSGM has 7 priority research areas whose scientific activity is set out in detail in the two figures below: 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 quartile. Both figures show the scientific output for the last 5 years.

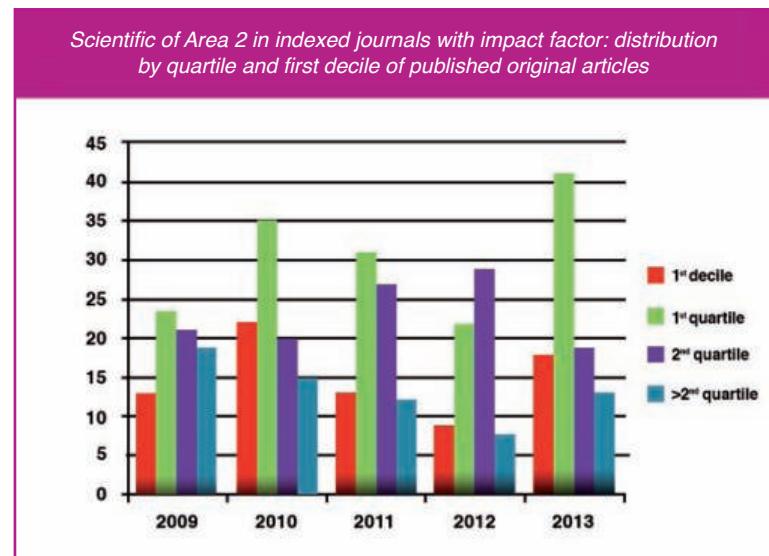
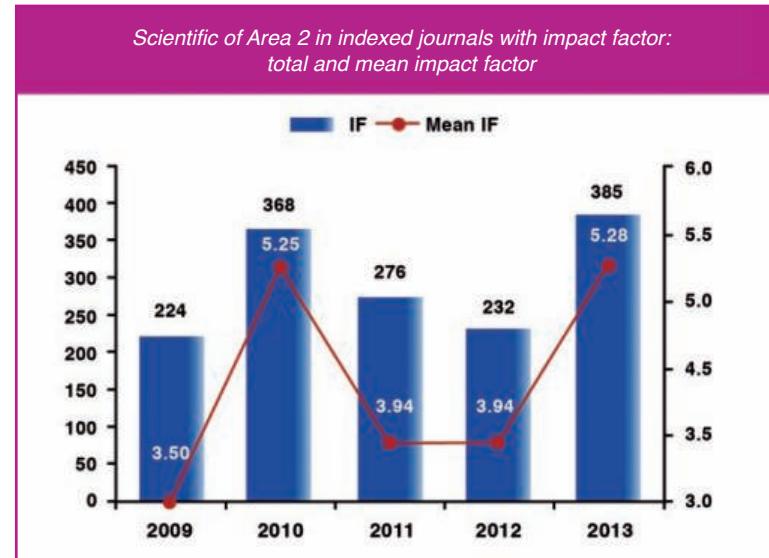
The research lines with the greatest scientific output were "Imaging support for clinical research" in the Biomedical Engineering Area, "Electrophysiology and arrhythmias" in the Cardiovascular Diseases Area, "Schizophrenia and other psychotic disorders" in the Neuroscience Area, "Invasive mycosis" in the Infectious Diseases Area, "Cellular and Molecular Biology of HIV" in the Diseases of the Immune System Area, "Coadjvant chemotherapy in breast cancer" in the Translational Oncology Area, "Innovation and safety in the medication use process" in the Systemic Diseases and Organ Transplantation Area, and, finally "Evidence-based nursing care" in the Nursing Area.

GLOBAL ANALYSIS

AREA 1: BIOMEDICAL ENGINEERING



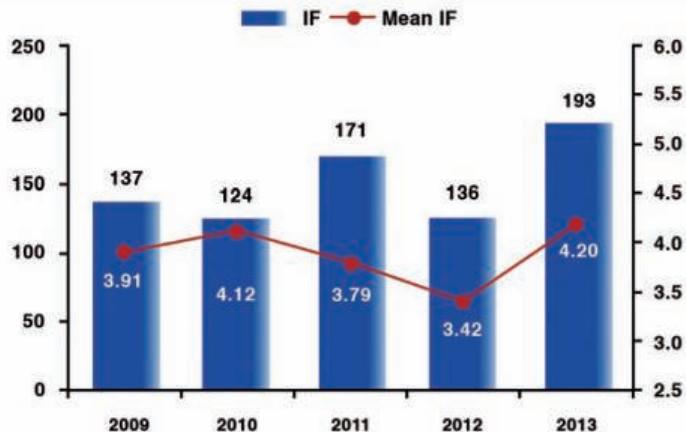
AREA 2: CARDIOVASCULAR DISEASE



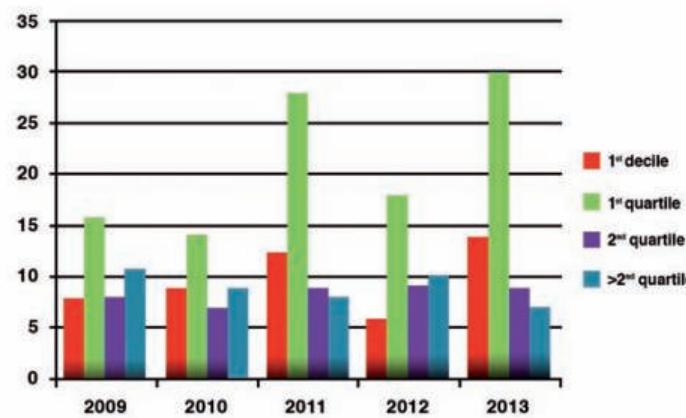
GLOBAL ANALYSIS

AREA 3: NEUROSCIENCE AND MENTAL HEALTH

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

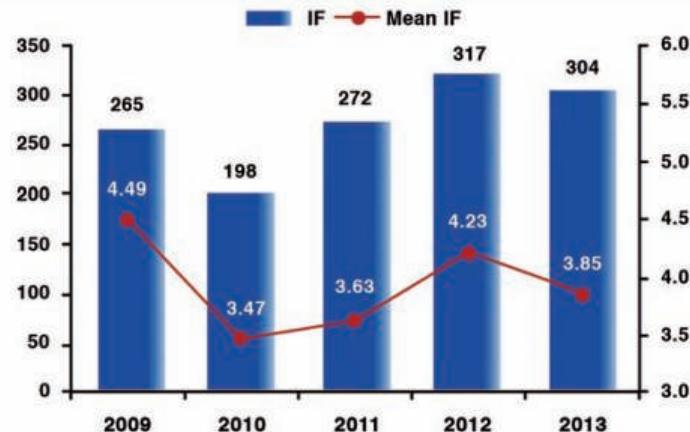


Scientific of Area 3 in indexed journals with impact factor:
distribution by quartile and first decile of published original articles

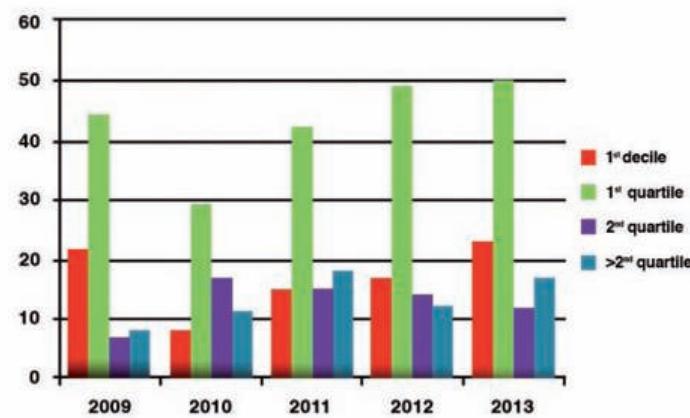


AREA 4: INFECTIOUS DISEASES AND AIDS

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



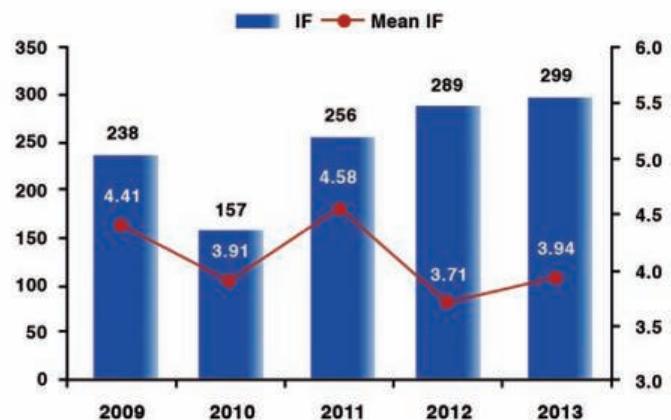
Scientific of Area 4 in indexed journals with impact factor:
distribution by quartile and first decile of published original articles



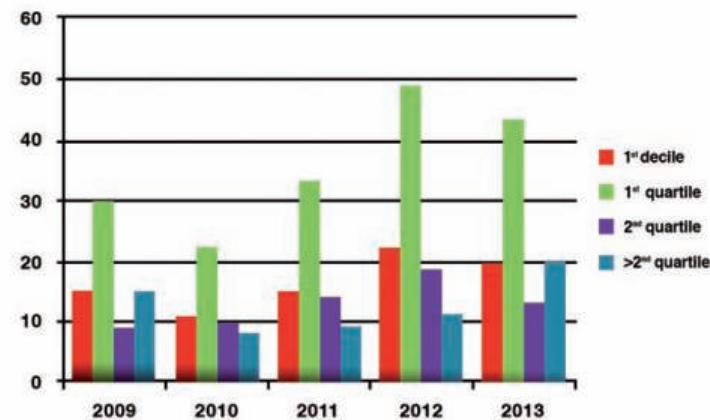
GLOBAL ANALYSIS

AREA 5: DISEASES OF THE IMMUNE SYSTEM

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

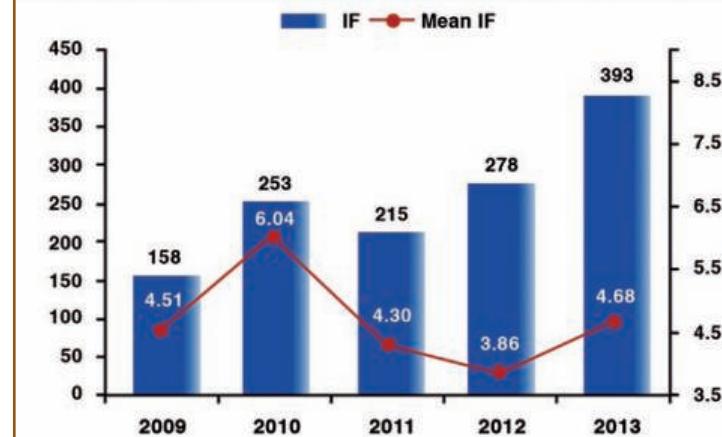


Scientific of Area 5 in indexed journals with impact factor:
distribution by quartile and first decile of published original articles

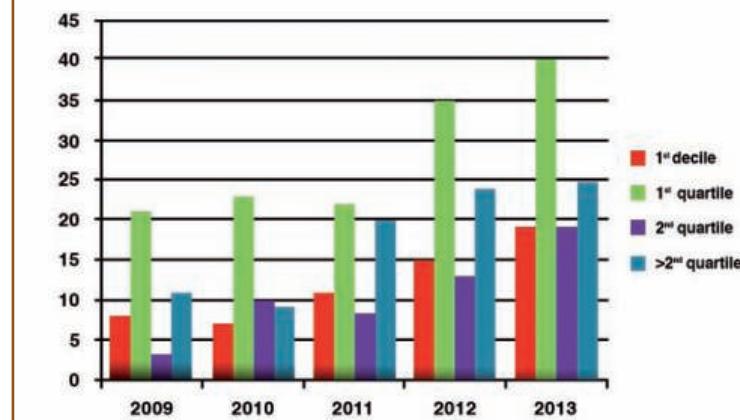


AREA 6: TRANSLATIONAL ONCOLOGY

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



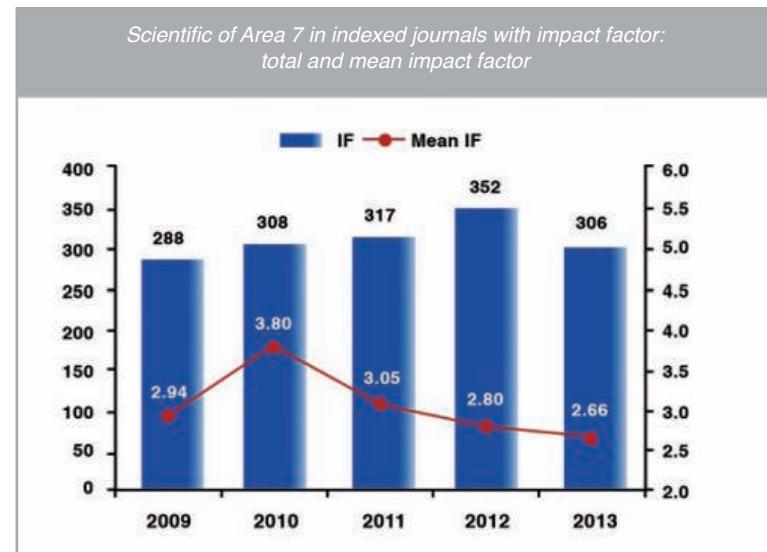
Scientific of Area 6 in indexed journals with impact factor:
distribution by quartile and first decile of published original articles



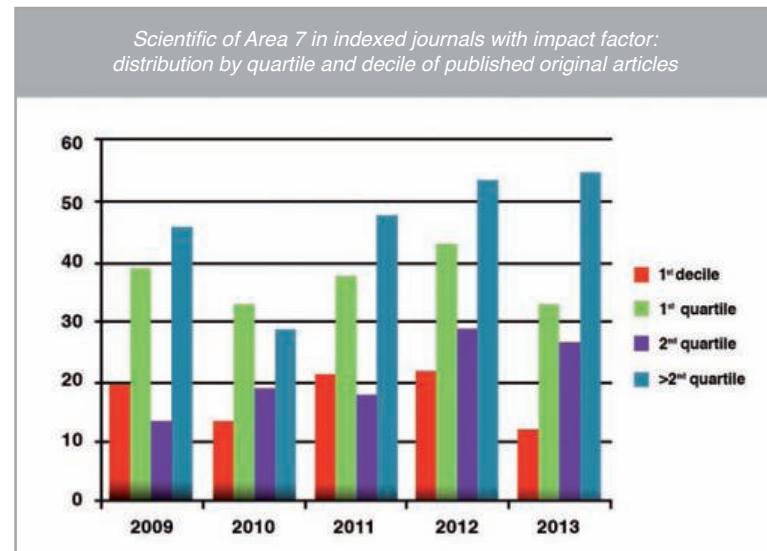
GLOBAL ANALYSIS

AREA 7: SYSTEMIC DISEASES AND ORGAN TRANSPLANTATION

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



Scientific of Area 7 in indexed journals with impact factor:
distribution by quartile and decile of published original articles



ORGANIZATIONAL STRUCTURE

GOVERNING COUNCIL

- **Chair:** Patricia Flores Cerdán
Vice-councilor of Health Care, Comunidad de Madrid.
- **First Deputy Chair:** Joaquín Plumet Ortega
Vice-chancellor of Research, Universidad Complutense Madrid.
- **Second Deputy Chair:** Juan Romo Urroz
Vice-chancellor of Teaching Staff and Departments, Universidad Carlos III, Madrid.
- **Members at large:**
 - Ricardo Herranz Quintana. Manager of Hospital General Universitario Gregorio Marañón.
 - Manuel Sánchez Luna. Chairman of the Clinical Research Ethics Committee.
 - Rafael Bañares Cañizares. Scientific Director of IISGM.
- **Members:**
 - Miguel López-Bravo Bascán. General Management of Research, Training, and Infrastructure, Consejería de Sanidad.
 - Emilio Bouza Santiago. FIBHGM trustee.
 - Manuel Desco Menéndez. FIBHGM trustee.
 - Celso Arango López. FIBHGM trustee.
 - Javier Rodríguez Rodríguez. FIBHGM trustee, Vice-deacon of Universidad Complutense de Madrid.
 - María Sanjurjo Sáez. FIBHGM trustee.
 - Francisco Fernández-Avilés Díaz. FIBHGM trustee.
 - Miguel Ángel Pozo García. FIBHGM trustee, Universidad Complutense de Madrid.
 - Carlos Balaguer Bernaldo de Quirós. FIBHGM trustee, Universidad Carlos III de Madrid.
- **Secretary:** Thierry Bardinet. Director of FIBHGM.

EXECUTIVE COMMITTEE

- Ricardo Herranz Quintana. Manager of Hospital General Universitario Gregorio Marañón.
- Celso Arango López. FIBHGM trustee.
- Emilio Bouza Santiago. FIBHGM trustee.
- Javier Rodríguez Rodríguez. FIBHGM trustee. Vice-deacon of Universidad Complutense de Madrid.
- Miguel Ángel Pozo García. FIBHGM trustee. Universidad Complutense de Madrid.
- Rafael Bañares Cañizares. Science Director, IISGM.
- Francisco Fernández-Avilés Díaz. FIBHGM trustee.
- Carlos Balaguer Bernaldo de Quirós. FIBHGM trustee. Universidad Carlos III de Madrid.

EXTERNAL SCIENTIFIC COMMITTEE

- 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.

RESEARCH COMMITTEE

- **Chair:** Rafael Bañares Cañizares.
- **Deputy 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, Manuel Sánchez Luna,

ORGANIZATIONAL STRUCTURE

Jesús Ruiz Cabello, Antonio Artés Rodríguez, Darío García de Viedma del Álamo, Pedro Luis Sánchez Fernández, Pascual Balsalobre López, Fernando Asensio Rubio, Ismael Buño Borde, Ana M^a García Pozo, Juana Gil Herrera, Paz Rodríguez Pérez, 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 Francisco Javier Rodríguez Rodríguez.

CLINICAL RESEARCH ETHICS COMMITTEE

- **Chair:** Manuel Sánchez Luna
- **Vice-Chair:** Felipe Atienza Fernández
- **Secretary:** Fernando Díaz Otero
- **Members:** Carlos Manuel González Fernández, M^a Luisa Baeza Ochoa de Ocariz, M^a Antonia Beltrán López, 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, María de los Ángeles Muñoz Fernández, Ana Mur Mur, María del Carmen de la Cruz Arguedas, Luis Puente Maestu, M^a Begoña Quintana Villamandos, and Andrés Jesús Muñoz Martín.
- **Technical Secretary:** Santos Puerta Cruz

ANIMAL EXPERIMENTATION ETHICS COMMITTEE

- **Chair:** Fernando Asensio Rubio.
- **Secretary:** Jesús López Herce Cid.
- **Members:** Carlos Simón Adiego, Laura Moreno Márquez, Miguel Reloso Cereceda, Alberto Tejedor Jorge, Begoña Quintana Villamandos, Javier Vaquero Martín, M^a Luisa Baeza Ocariz, Antonio Martínez Escandell.

INNOVATION COMMITTEE

- **Chair:** Rafael Bañares Cañizares.
- **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

- **Head of Training:** Alberto Tejedor Jorge. Lecturer. Universidad Complutense de Madrid
- **Training Committee:** Alberto Tejedor Jorge, Rafael Bañares Cañizares, Ismael Buño Borde, José María Bellón Cano, Milagros González Rivera, Carmen Olmedo Lucerón, Constancio Medrano López, Thierry Bardinet, and Rafael Correa Rocha

RESEARCH SUPPORT SERVICES

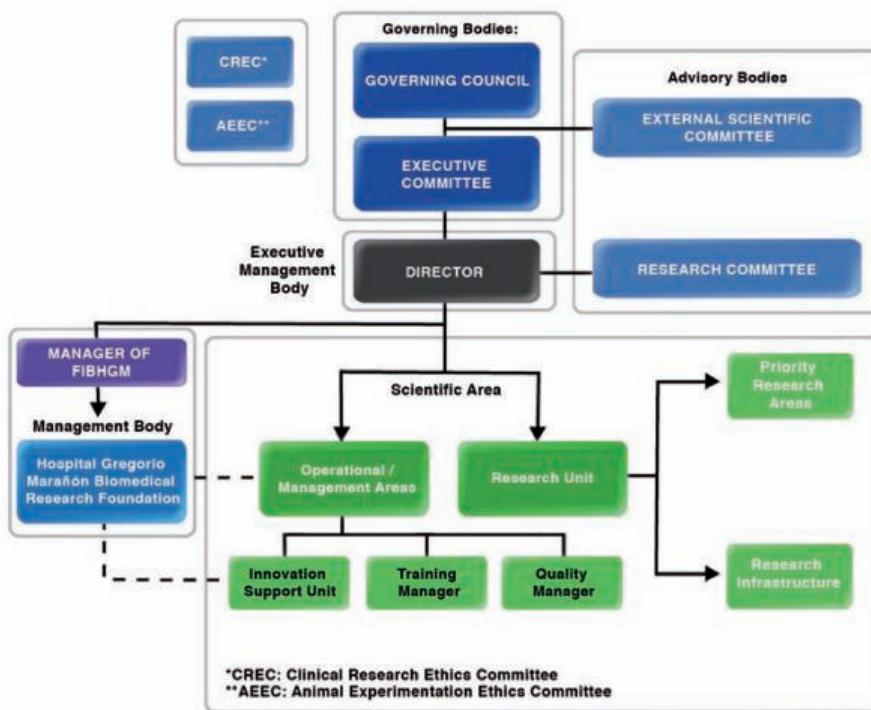
- **Head of Research Support Services:** Milagros González Rivera. Sequencing and Genotyping Unit. HGUGM.

HOSPITAL GREGORIO MARAÑÓN BIOMEDICAL RESEARCH FOUNDATION

- **Director:** Thierry Bardinet.
- **Scientific Management and Quality Assurance:** María del Carmen Olmedo Lucerón.
- **Project Managers:** Laura Moreno Márquez, Miriam Arriaga García, Carlos Arias López, Luis Fernández Vera, and Isabel Ballesteros López.
- **Clinical Trials:** María del Carmen de la Cruz Arguedas.

ORGANIZATIONAL STRUCTURE

- **Human Resources:** Alberto Gómez Moreno.
- **Accounting:** Estefanía Lavilla Guevara , and M^a Isabel Olmedo Andueza.
- **Invoicing:** Marta Martín-Arriscado Arroba.
- **Legal Department/Purchasing:** Miguel Ángel Conejo Martín.
- **Secretary:** María Rosario Calle Benito.



STRUCTURE OF RESEARCH AREAS AND GROUPS

STRUCTURE OF RESEARCH AREAS AND 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 |

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UCM: Universidad Complutense de Madrid; UCIII: Universidad Carlos III de Madrid

AREA 2: Cardiovascular Diseases

Coordinator: **Francisco Fernández-Avilés Díaz**

| Group | Group director | Type of group | Organization |
|---|-----------------------------------|---------------------|--------------|
| Natural history of heart disease | Francisco Fernández-Avilés Díaz | 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 |

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 |
| Parkinson disease and movement disorders | Francisco Javier Grandas Pérez | Emerging | HGUGM |
| Clinical neurology | | Associated clinical | HGUGM |
| Clinical and etiopathogenic aspects of neuromuscular diseases | José Luis Muñoz Blanco | Emerging | HGUGM |
| Neuroimmunology | Clara de Andrés Frutos | Emerging | HGUGM |
| Biology of inflammation | Maria Concepción Guisasola Zulueta | Associated | HGUGM |

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STRUCTURE OF RESEARCH AREAS AND GROUPS

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 aggression after heart surgery | Francisco Javier Hortal Iglesias | Associated clinical | HGUGM |

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AREA 5: Diseases of the Immune System

Coordinator: **Dr. 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 | Mª Ángeles Muñoz Fernández | Consolidated | HGUGM |
| Autoimmune systemic diseases | Luis Carreño Pérez | Consolidated | HGUGM |
| Immuno-oncology | Paloma Sánchez-Rubio Mateos | Consolidated | HGUGM |
| Pathogenesis of the immunoallergic response | José Manuel Zubeldia Ortuño | In the process of consolidation | HGUGM |
| Immunology of HIV infection in pediatric patients | María Dolores Gurbindo Gutiérrez | Consolidated | HGUGM |
| Infections in pediatric patients | María Luisa Navarro Gómez | Consolidated | HGUGM |
| Allergic diseases in pediatric patients | Elena Alonso Lebrero | Associated clinical | HGUGM |

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STRUCTURE OF RESEARCH AREAS AND GROUPS

AREA 6: Translational Oncology

Coordinator: **Dr. Miguel Martín Jiménez**

| Group | Group director | Type of group | Organization |
|---|------------------------------|---------------------|--------------|
| Interdisciplinary oncology and biotechnology | Felipe Calvo Manuel | Consolidated | HGUGM-UCM |
| Translational medical oncology and personalized cancer therapy | Miguel Martín Jiménez | Consolidated | HGUGM-UCM |
| Genetics and clinical aspects of hematologic malignancies and hematopoietic stem cell transplantation | José Luis Díez Martín | Consolidated | HGUGM |
| 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 |

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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 the 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 |

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STRUCTURE OF RESEARCH AREAS AND GROUPS

AREA 7: Systemic Diseases and Organ Transplantation

Coordinator: **Rafael Bañares Cañizares**

| Group | Group director | Type of group | Organization |
|--|-----------------------------|---------------------------------|--------------|
| Emergency medicine | Javier Muñoz González | Associated clinical | HGUGM |
| 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 system development: cardiovascular y osteochondral | 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 the process of consolidation | HGUGM |

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UCM: Universidad Complutense de Madrid; UCIII: Universidad Carlos III de Madrid

AREA 7: Systemic Diseases and Organ Transplantation

Coordinator: **Rafael Bañares Cañizares**

| Group | Group director | Type of group | Organization |
|---|---------------------------------|---------------------------------|--------------|
| Hereditary diseases and pediatric endocrinology | Begoña Ezquieta Zubizaray | Emerging | HGUGM |
| Artificial circulation laboratory | Juan Francisco del Cañizo López | Emerging | HGUGM-UCM |
| Evaluation of health services and clinical epidemiology | María Paz Rodríguez Pérez | Emerging | HGUGM |
| Hospital pharmacy and pharmacogenomics | María Sanjurjo Sáez | In the process of consolidation | HGUGM |
| Clinical nutrition | Pilar García Peris | Emerging | HGUGM |

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Research in Nursing

Coordinator: **Ana García Pozo**

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

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PUBLICLY FUNDED RESEARCH STAFF CONTRACTS

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 (methodological support) | lISGM |
| Rafael Samaniego García | Research support (confocal microscopy) | lISGM |
| Amaya Rocío Puig Kröger | Diseases of the immune system | Immuno-oncology |

Instituto De Salud Carlos III Miguel Servet Contracts

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

Sara Borrell Contracts

| | Area | Group |
|-------------------------|--------------------------------|---|
| Marta Rapado Castro | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Pilar Escribano Martos | Infectious diseases and AIDS | Infectious diseases |
| Verónica Briz Sebastián | Diseases of the immune system | Molecular biology of HIV |
| Sara Ferrando Martínez | Diseases of the immune system | Molecular biology of HIV |
| Sergio Álvarez Pérez | Infectious diseases and AIDS | Infectious diseases |

PUBLICLY FUNDED RESEARCH STAFF CONTRACTS

Río Hortega Contracts

| | Area | Group |
|--|---|---|
| Teresa Aldamiz-Echevarría Lois | Infectious diseases and AIDS | Clinical and epidemiological aspects of HIV infection and associated conditions |
| Paula López Roa | Infectious diseases and AIDS | Infectious diseases |
| María Covadonga Martínez Díaz-Caneja | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Mª Elena Martino Casado | Biomedical engineering | Advanced technological applications and human health |
| Teresa Mombiela Ramírez de Ganzuza | Diseases of the immune system | Molecular biology of HIV |
| María del Palacio Tamarit | Diseases of the immune system | Molecular biology of HIV |
| Talia Sainz Costa | Diseases of the immune system | Molecular biology of HIV |
| María José Solana García | Systemic diseases and organ transplantation | Diseases of the critically ill child |
| Elena Reigadas Ramírez | Diseases of the immune system | Molecular biology of HIV |
| Mª de las Candelas Pérez del Villar Moro | Cardiovascular diseases | Cardiovascular diseases |
| María Goretti Morón Nozaleda | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders | Neuroscience and mental health |
| María Guembe Ramírez | Diseases of the immune system | Molecular biology of HIV |

Support Contracts

| | Area | Group |
|----------------------------|-------------------------------|--------------------------|
| Ana Estecha Palomero | Diseases of the immune system | Immuno-oncology |
| María Alonso Martínez | Infectious diseases and AIDS | Infectious diseases |
| Javier Sicilia Alonso | Animal facility | IIISGM |
| Mª Isabel Clemente Mayoral | Diseases of the immune system | Molecular biology of HIV |
| Laura Díaz Muñoz | Diseases of the immune system | Molecular biology of HIV |
| Raquel Lorente Rodríguez | Diseases of the immune system | Molecular biology of HIV |

Predoctoral Contracts

| | Area | Group |
|----------------------------|---|---|
| Teresa Sánchez Gutiérrez | Neuroscience and mental health | Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders |
| Marta Martínez Bonet | Diseases of the immune system | Molecular biology of HIV |
| Rafael González Cortés | Systemic diseases and organ transplantation | Diseases of the critically ill child |
| Mª Ángeles Espinosa Castro | Cardiovascular diseases | Noninvasive cardiology |

PUBLICLY FUNDED RESEARCH STAFF CONTRACTS

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 |
| Marjorie Pion | Diseases of the immune system | Molecular biology of HIV |
| Javier Vaquero Martín | Systemic diseases and organ transplantation | Pathophysiology and natural history of liver and gastroenterological diseases |

Juan de la Cierva Contracts

| | Area | Group |
|--------------------|------------------------------|---------------------|
| Laura Pérez García | Infectious diseases and AIDS | Infectious diseases |

Support Contracts

| | Area | Group |
|---------------------------|------------------------|--|
| Cristina Chavarriás Navas | Biomedical engineering | Advanced technological applications and human health |

RESEARCH SUPPORT SERVICES

IISGM has organized research support services into various technology platforms according to the object of research. This approach differs from that of science parks, which are organized around the technology itself. Thus, IISGM 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/CAIBER | |
| 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 | |

RESEARCH SUPPORT SERVICES



PATIENT PLATFORM

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

The UCAICEC is a research support unit for all those Institute researchers who require support in the logistic, operational, and regulatory design of clinical trials and observational studies.

The UCAICEC also represents the liSGM as a participating unit in the Clinical Trials and Research Unit Platform (SCREN) that the ISCIII called in 2013 as part of its Health Action Strategy 2013-2016. This platform has been set up as a stable cooperative research network in specific cross-sectional areas with the aim of performing cooperative clinical research projects of general interest.

Services provided

Advice on the preparation and performance of research projects

- Support in the management of documentation for evaluation by the CREC and regulatory bodies (Spanish Medication Agency [AEMPS] and regional government bodies).
- Advice, management, and support with the preparation and follow-up of administrative documentation linked to the project.
- 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.

Contact

María del Carmen de la Cruz Arguedas, Scientific Manager
 E-mail: ucaicec@fibhgm.org
 Tel.: (+34) 914 269 232

2. METHODOLOGY AND STATISTICS

Methodology and Statistics 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. It provides the necessary assistance for researchers to achieve their research objectives.

Services provided

Methodological support

- Most appropriate study type and design
- Calculation of sample size
- Most appropriate statistical techniques for 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 evaluation of research proficiency

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, Scientific Manager
 E-mail: josemaria.bellon@salud.madrid.org
 Tel: (+34) 915 866 454



ORGAN PLATFORM

1. CELL PRODUCTION UNIT

The Cell Therapy Unit provides support for basic and clinical research in the field of cell therapy and regenerative medicine.

Services provided

- Infrastructure for preclinical studies in cell therapy and regenerative medicine
- Infrastructure certified under Good Manufacturing Practice (GMP) norms and investigational products (IP) approved by the Spanish Medications Agency (AEMPS) for the production of different cell types:
 - Bone marrow mononuclear cells (IP No. 05-042)
 - Stromal vascular fraction (fresh fat cells) (IP No. 11-020)
 - Bone marrow mesenchymal cells (IP No. 09-109)
 - Fatty tissue mesenchymal cells (IP No. 09-065)
- All work is carried out within the framework of GLP, GCP, and AEMPS certification, ie, a rigid quality assurance system ensures robust results that can be easily transferred to clinical practice.

Technology

Therapy laboratory

- BIO II-A laminar flow hood (TELSTAR)
- Thermo 371 CO₂ incubator
- Axiovert 40 fluorescence microscope
- Sepax (Biosafe) for cell separation and refrigerated centrifuge 5810R (Eppendorf)

Cell Production Unit

- BIO II-A and II-A-P laminar flow hoods (TELSTAR)
- Thermo 371 CO₂ and Steri-Cult incubators with Model 3308 S/N thermal sterilization routine
- Axiovert 40 CFL microscope

- HandiLaz Mini particle counter
- ULTRA-TURRAX mechanical tissue homogenizer
- Automatic lyophilization vial crimper and bag sealer

Quality assurance:

- MacsQuant flow cytometer
- BioRad thermal cycler
- Luminometer
- SafeFAST Elite safety cabinet
- Microbiological culture incubator (37°C and 22°C)

Contact

M^a Eugenia Fernández Santos, Scientific Manager
E-mail: mariuge@fibhgm.org

2. BIOARTIFICIAL MATRIX AND ORGAN LABORATORY

This section comprises 3 laboratories (cell processing laboratory, cell production-GMP laboratory, and bioartificial organ laboratory). It has all the necessary equipment for the production of bioartificial organs by means of decellularization and recellularization of solid organs and tissue. The section also has quality assurance systems in place (GLP).

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 by co-culture of decellularized matrices
- Recellularization program using bioreactors (Harvard Apparatus)
- Human cell culture
 - a) Vascular fat fraction or “fresh cells” from liposuction
 - b) Bone marrow mononuclear cells
 - c) Bone marrow mesenchymal cells
 - d) Fatty tissue mesenchymal cells
- Culture of cells from animal tissue: mesenchymal cells and

RESEARCH SUPPORT SERVICES

- cardiomyocytes
- 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

M^a Eugenia Fernández Santos, Scientific Manager
E-mail: mariuge@fibhgm.org

3. BIOLOGICAL SAMPLE STORAGE

3.1. Biobank

The IISGM Biobank forms part of the biobank network funded by the ISCIII. In addition, the IISGM owns the HIV Biobank of the RIS (AIDS Research Network).

The Biobank was established as a biological sample bank (blood, plasma, DNA, tissue, and biopsy specimen) that benefits from the participation of many Spanish hospitals, which deposit samples from HIV-infected patients of different origins (previous informed consent provided). The Biobank of Hospital Gregorio Marañón has provided samples for research projects both in Spain and abroad.

Services provided

- Management, preparation, publication, and follow-up of all the documentation necessary for deposition of samples in the Biobank (reception, processing, cryopreservation, and loan).
- Reception, processing, and cryopreservation of biological material from different cohorts (previous signature of the corresponding deposit agreement).
- Assurance of quality, traceability, and maximum viability of biological material stored in the Biobank of Hospital Gregorio Marañón
- Recording of basic information associated with the samples
- Adaptation of the Biobank database to enable the coordinators of the different cohorts to register the clinical and analytical information of persons participating in the donation of samples

- Advice to the coordinators of the different cohorts on the use of the Biobank database.
- Consolidation of data associated with the samples available in the Biobank with the coordinators of the cohorts and with the services that deposit the biological material
- Loan of samples for research projects previously approved by an ethics committee and a scientific committee
- Periodic publication of the activities carried out by the Biobank of Hospital Gregorio Marañón

Technical resources

The HIV Biobank of Hospital Gregorio Marañón has 2 cryopreservation rooms and a laboratory for processing samples. The equipment includes the following:

- Three laminar flow hoods and 3 microscopes
- A 4°C refrigerator and a -20°C freezer
- Two centrifuges with swing rotor and 2 microcentrifuges
- An incubator
- Thermostatic bath
- Thermal cycler
- Seven -80°C cyclers
- Four nitrogen tanks
- Telephonic alarms and computers

Contact person

M^a Angeles Muñoz. Scientific manager
E-mail: mmunoz.hgugm@salud.madrid.org

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 CNIO. 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 mission of the animal facility of the Experimental Medicine and Surgery Unit is to provide investigators with the animals that are best suited to their research and to maintain the appropriate environmental conditions for research to be carried out while ensuring animal well-being.

Equipment/Facilities

The animal facility comprises both a housing area and a common area.

The housing area comprises the following sections:

- Two minipig rooms.
- Four rodent rooms.
- One rabbit room with 3 shelves and 18 cages.

The animal facility has the following equipment:

- 1 isolation cabinet for animals in quarantine with 8/16 boxes (Euro Aire-VAP 110).
- 1 ventilated rack with a HEPA-ULPA filter: 25 cages (Tecniplast).
- Racks for conventional cages and cages with an air filter.
- 1 rack for metabolic studies: capacity for 12 animals (Panlab).
- 1 compatible ventilated rack for housing of rats and mice: 30 boxes (Allentown).
- 1 animal transport cage (Allentown).
- 1 compatible ventilated rack for housing of rats and mice that can be used as an animal transport unit (ATU) (Allentown).
- 1 class II biological safety unit (Euro Aire).

Contact

Fernando Asensio Rubio, Doctor in Veterinary Medicine, Head of the Animal Facility
E-mail: fernandoasensio.rubio@gmail.com
Tel: 91 586 6452/8102

2. EXPERIMENTAL OPERATING ROOM

The operating room has the necessary instruments and material for standard procedures. The tables are custom-designed for animals, and one is radiotransparent to enable x-ray techniques to be performed.

The operating room also has the necessary equipment for more specific procedures such as laparoscopic surgery and extracorporeal circulation.

Equipment/Facilities

The surgical area of the Experimental Medicine and Surgery Unit has a microsurgery operating room and a conventional operating room, with the following equipment:

- C-arm (Philips)
- Extracorporeal circulation equipment (Stockert Shiley, Jostra, Polystan)
- Camera (CCD: Braun, Fiegert, Olympus)
- TV monitor (Sony, Philips, Panasonic)
- Camera sensor (Fiegert)
- Video (Panasonic, Sony)
- Surgical insufflator (BCM)
- Pressure monitor (Jostra, Siemens)
- Closed general monitor for various signals (Datex; RGB)
- Portable x-ray machine (Philips)
- Modular registration system (ADML 880 P Power Lab). This equipment comprises the following:
 - ML138 Octal Bio Amp
 - ECG channel selector - MLA 114/S
 - 4 pressure amplifiers ML 142 GP Amp

RESEARCH SUPPORT SERVICES

- ML136 Animal Bio Amp
- Temperature module ML 309
- T-type Ultra Fast Thermocouple Probe (IT-23)
- Respirator with pressure or volume control (SAR 830/P)
- Hydraulic operating table (Mod. Bruxelles)
- Stereoscopic microscopes (Nikon SMZ-1).
- Microscopes (Zeiss OPMI 99).

Contact

Juan F. Del Cañizo López. Responsible for the Operating Area
Email: canizo@mce.hggm.es
Telno.: 91 4265015/ 91 5868103

3. EXPERIMENTAL SMALL-ANIMAL IMAGING TECHNOLOGY

The imaging platform is located in the Experimental Medicine and Surgery building: it comprises a magnetic resonance device, a tomograph, and a radiotracer synthesis unit.

Equipment/Facilities

a) The 7-tesla small-animal magnetic resonance imaging equipment has the following characteristics:

- Bruker 7/210 USR magnet (Ultra Shielded) with a principal 7-tesla magnetic field.
- Open bore diameter of 210 mm, useful imaging diameter of 72 mm.
- Four reception channels for parallel or multinuclear imaging.
- Gradient unit fed to 500V and 300A, with an intensity of 750 mT/m and a slew rate of 4570 T/m/s.
- Various antennas: surface, linear, and quadrature mode resonators; phased array for brain and heart studies; 13-C and 31-P spectroscopy.

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]). The area also has the necessary software for combining magnetic resonance imaging with the other imaging modalities available in the laboratory.

b) High-resolution SPECT with the following characteristics:

- U-SPECT-II (MILabs, The Netherlands).
- Three human detectors (gamma-cameras) in triangle formation, motorized sample bed allowing linear displacement on 3 axes (XYZ).
- Set of interchangeable cylindrical collimators (each with 75 pinhole apertures) suitable for different study types (full-body rat/mouse, specific organs).
- User interface that enables selection of the field of vision to be examined by acquisition of optical images.
- Statistical iterative reconstruction algorithm. The collimators that are currently available in the laboratory make it possible to obtain mouse images with a spatial resolution of <0.5 mm and a sensitivity of >1500 cps/MBq and rat images with a spatial resolution of <0.9 mm and a sensitivity of >700 cps/MBq (using 99mTc tracers). Therefore, this system can identify molecular concentrations of 0.04 µL in mice and 0.5 µL in rats.

c) Gallea (General Electric) is a Ge-68 radiotracer synthesis system, which can generate highly specific tracers in a PET imaging center that does not have a cyclotron. Its components are as follows:

- FASTlab
- FASTlab control computer with Gallea application
- Gallea cassette parts – set of 10
- Gallea Microwave 100 System

Contact

Head of Unit: Dr. Manuel Desco Menéndez, Scientific Manager
E-mail: desco@mce.hggm.es
Tel: 91 4265015/ 91 5868103



CELL PLATFORM

1. CELL CULTURE

The mission of this research support unit is to assist research studies requiring ex vivo experimentation with primary cell cultures from both human tissue (healthy or diseased) and experimental animals (rat, mouse, and pig) or with cell lines already generated in culture (immortalized cell lines, tumor cell lines).

Services provided

The technical staff ensure appropriate maintenance and functioning of the facilities according to current legislation for this type of facility and the principles of Good Laboratory Practice. Similarly, they support and supervise researchers from the center who require cell cultures for the performance of their research projects.

For example, experiments on protection against nephrotoxic drugs are performed by determining the extent of cell death (apoptosis). Experiments are also performed to measure transepithelial resistance in intestinal epithelial cells, stimulate these cells with proinflammatory molecules, and assess the effect of specific drugs on the inflammatory cascade. The growth of hepatocytes in response to different growth factors is also studied.

Equipment

- Flow cabinets (2) (Telstar BioSafety II).
- Cell incubators (2) (Heraeus)
- Microscopes:
 - Inverted (Leitz fluovert FS)
 - Slide (Nikon)
- Freezer (1) (Fagor)

Contact

Dr. Paloma Sánchez Mateos, Scientific Manager
E-mail: rsanchezma.hgugm@salud.madrid.org
Tel: (+34) 915 868 624

2. FLOW CYTOMETRY AND CELL SORTER

Flow cytometry is a research support unit that provides assistance to research studies requiring the analysis of cells or cell populations using molecular markers, with applications for the discovery, identification, and monitoring of cell markers, thus facilitating separation of cell populations.

Services provided

Flow cytometry

- Assessment on and optimization of study protocols or experiment design.
- Analysis of cell viability using markers: 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 calcium movement by marking with Fluo-4.
- Analysis of the activation of caspase-3 pathway apoptosis.

Cell separation by flow cytometry

- Cloning
- Separation of subpopulations
- Separation of live cells

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.

Technology

10-color flow cytometer

RESEARCH SUPPORT SERVICES

- Reading of up to 10 colors. Three lasers (blue 488 nm, red 638 nm, and violet 405 nm), computer-controlled, with rapid start and stabilization system.
- Latest-generation photomultipliers with high sensitivity for the red range and excellent linearity throughout the range.

Flow cytometry cell separator

- Integration in type II biosafety cabinet for samples (biorisk group II and III).
- Aerosol evacuation and sample shaking systems.
- Controlled sample temperature (heating or cooling).
- Six solid-state lasers (640 nm, 592 nm, 561 nm, 532 nm, 488 nm, and 405 nm) and 7 pinholes.
- Acquisition rate greater than 100,000 cells/s; automatic recognition by photomultipliers (PMT) and PODs that makes it possible to detect various configurations depending on the objective.
- Various collection systems: multiwell plates, propylene tubes.

Fluorescence microscope (Eclipse 50i, with Nikon CFI60 optical system)

Contact

Dr. Laura Díaz Muñoz, Technical Manager
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Tel: 91 529 0509

3. CONFOCAL MICROSCOPY

The confocal microscopy service provides support to research studies requiring visualization of tissues, cells, and/or internal structures, including live cell dynamics.

Services provided

Fixed-sample microscopy

Visualization and acquisition of high-resolution images for the following:

- Cellular and subcellular markers and colocalization studies
- Panoramic microscopy of cell cultures and histology slides
- Samples of up to 1 mm in thickness: cell matrices or superficial organ layers.

Live cell microscopy

- Visualization and acquisition of images of live cells, since the system offers environmental control of temperature and CO₂.
- FRAP and FRET analysis using the 'Microlab' application.

Technology

Inverted confocal fluorescence microscope (LEICA-sp2): confocal module

- High-sensitivity multiband with AOBS
- Independent and adjustable internal fluorescence detectors (PMT) and an internal detector for differential interference contrast (DIC).
- Digitalization of images: 4096 x 4096 pixels, 12 bits per channel.
- Laser sweeping system with AOTF: maximum 2000 lines/s. ROI scan under varying conditions for each region.
- "Lambda line-switching" sweeping technology.
- Multidimensional (7D) acquisition that can be regulated according to image area, height, time, rotation, wavelength, and intensity.

Laser Module

Multiple laser configuration with 8 excitation lines:
- Ar/ArKr laser: 458, 476, 488, 496, and 514 nm.

RESEARCH SUPPORT SERVICES

- He-Ne lasers: 594 and 633 nm.
- Gre-Ne laser: 561 nm.
- Blue diode laser: 405 nm.

Inverted motorized microscope (DM IRE2 Fluo TCS)

Objective lenses:

- HC PL-APO 10x/numerical aperture of 0.4.
- HC PL-APO 20x/0.70 multi-immersion Lambda Blue.
- HCX PL-APO 40x/1.25-0.75 oil immersion.
- HCX PL-APO 63x/1.4-0.6 oil immersion.
- PL-APO 63x/1.3 glycerol immersion.

Fluorescence filters in the blue, green, red, and ultraviolet excitation bands.

Motorized galvanometric stage with control in Z and XY.

Environmental control (temperature and CO₂) for cell experiments and tissues ex vivo.

Computer equipment:

- HP computer running Windows XP.
- Software: LCS version 15.37 and "Microlab" software license for FRAP and FRET.

Processing station:

- HP computer running Windows XP.
- Software: LCS version 15.37 and "Microlab" software license for FRAP and FRET.

Contact

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



MOLECULAR PLATFORM

SEQUENCING AND GENOTYPING

The sequencing and genotyping section 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 marker; single reaction or multiplex); PCR (fluorescent marker) using commercially available reagents (SGM, MSI, MLPA, PPW). Size 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 (SNP): 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

1. Researcher needs analysis not 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.

RESEARCH SUPPORT SERVICES

2. Massive parallel sequencing
 - Study design
 - Sample preparation
 - Agreements on outsourcing of next-generation sequencing using commercially available approaches: Illumina, Roche, Life Technologies (SOLID, Ion Torrent).
3. Large-scale genotyping
 - Study design
 - Sample preparation
 - Agreements on outsourcing of genotyping: SNP Arrays, Sequenom Mass Array.

Technology

Gene analyzer 3130 xl – Life Technologies Inc.
GeneAmp PCR system 9700 – Applied Biosystems
TouchGene Gradient – Techne
MasterCycler Vapo-Protect ProS – Eppendorf
Additional equipment
Computer
Software: Data Manager v3.0, Sequencing Analysis v5.1, Variant Reporter v1.0, and GeneMapper v4.0

Contact

Director: Dr. Milagros González Rivera. Scientific Manager
E-mail: mgonzalezrivera@salud.madrid.org

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
- Post-translational modification studies. Phosphoproteomics
- Cell isolation by laser microdissection

Contact

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

INNOVATION, TRANSFER, AND APPLICATION

Innovation Support Unit

Innovation is a key element of research activity, especially in the health sector. We are totally committed to research and, consequently, have developed a structure aimed at easing the way for our researchers, from the initial idea to final development.

The objectives of the IISGM include the advancement of 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 economy.

The Innovation Support Unit came into being through a powerful research and technological design group in the area of biomedical instrumentation and engineering at Hospital General Universitario Gregorio Marañón (Experimental Medicine and Surgery Unit), which has 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 these proposals into products and services that add value to the health system and to society.

The objectives of the Innovation Support Unit are as follows:

- Providing the necessary support in innovation to professionals working at the hospital.
- 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 different agents that participate in the field of innovation, including other management structures, research organizations, and private companies.

The Unit is composed of the following members:

- Innovation managers:

- Anna Riera Guerra - ariera@hggm.es
- Eva Carravilla - ecaravilla@hggm.es
- M^a Isabel Ballesteros López - iballesteros@fibhgm.org
- Marco A. Rivas Fernández - mrivas@hggm.es

- Head of Information and Communications Technology: Javier Pascau González-Garzón – jpascau@hggm.es
- Head of Electronics: Juan José Vaquero López - juanjo@hggm.es
- Head of Biomedical Experimentation: M^a Luisa Soto Montenegro - marisa@hggm.es
- Head of Surgery: Juan Francisco del Cañizo López - canizo@hggm.es

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

In 2012, the Innovation Committee was set up to provide assistance in the management of innovation by analysis, study, and regular follow-up of IISGM innovation projects. It also provides advice and support to guarantee appropriate implementation and development.

The Committee comprises the many professional profiles associated with the institution: researchers, physicians, directors, and staff from other areas (eg, nursing), administrative/management staff, and technical staff.

The Committee is formed by the following members:

- Steering Committee
 - Chair: Rafael Bañares (Scientific Director of the IISGM)
 - Vice-chair: Manuel Desco (Director of the Innovation Support Unit)
 - Thierry Bardinet (Manager of the Foundation)
- Members at large:
 - Francisco Fernández Avilés (Head of Cardiology)
 - Emilio Bouza (Head of Microbiology and Infectious Diseases)
 - Pascual Balsalobre (Hematology Service)
 - Paloma Domingo (Director of the Science Park of Universidad Carlos III)

INNOVATION, TRANSFER, AND APPLICATION

- Attendees: Isabel Ballesteros López (Innovation Support Unit)
- Secretary: Anna Riera Guerra (Innovation Support Unit)

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

Of note, during 2013, a considerable effort was made to disseminate the work of the Innovation Support Unit via the hospital. More than 20 presentations were made throughout the hospital to make staff aware of the services provided by the Innovation Support Unit.

In this context, the intense activity of IiSGM in the field of technology transfer can be seen in the number of patents and intellectual property registrations applied for and in the companies set up by professionals from the IiSGM.

Finally, it is important to point out the growing importance of activities associated with innovation and knowledge transfer in the field of health care, both at the level of individual curricula and at institutional level. The website of IiSGM now hosts a specific section on innovation (<http://www.iisgm.com/innovacion/>), which provides a form to suggest ideas for projects, raise doubts, and present the latest developments in innovation.



INNOVATION, TRANSFER, AND APPLICATION

Innovation Portfolio

Below, we set out the intellectual and industrial property generated by IISGM, which forms part of the overall technology portfolio: 50 new projects—at the conception, development, or marketing phase—at the close of 2013 (96 projects open in total).

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|--|--|--|---|--|
| Matriz artificial de gel de fibrina endotelizada superproductora de factores proangiogénicos | P200501182 PCT/ES2006/070059 | FIBHGM | José María Lasso Vázquez, Paola Nava Pérez | Regenerative medicine in plastic surgery |
| Aparato de Tomografía Multimodalidad | P200502612 PCT/ES2006/070160 US2009213983 EP1947835 | FIBHGM SUINSA MEDICAL SYSTEMS, S.A. | Juan José Vaquero López, Manuel Desco Menéndez | Advanced technology applications and human health |
| Método y Aparato de Hemodiafiltración | PCT/ES2007/070081EP2140889 US2010187176 | FIBHGM | Juan Francisco del Cañizo López | Artificial circulation laboratory |
| Incubadora para Imagen con Radiación No Ionizante | PCT/ES2007/070214 EP2221035 US2011125010 | FIBHGM | Juan José Vaquero, Manuel Desco Menéndez, Manuel Sánchez Luna | Advanced technology applications and human health. Neonatal and developmental pathophysiology |
| Uso de la cilastatina para reducir la nefrotoxicidad en distintos compuestos | EP2143429 US2011165264 PCT/ES2007/070214 | FIBHGM | Alberto Tejedor Jorge, Alberto Lázaro Fernández, Sonia Camaño Páez, Ana María Torres Redondo, José Antonio Lázaro Manero, Manuela Castilla Barba, María del Carmen de Lucas Collantes | Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology |
| Procedimiento mejorado para evaluar el riesgo cardiovascular | P200901923 PCT/ES2010/070622 | FIBHGM | María Concepción Guisasola Zulueta, Elena Dulín Iñiguez | Biology of inflammation |
| Aparato de adquisición de datos para tomografía computerizada por emisión de radiación gamma y su funcionamiento | P200702836 | FIBHGM - UPM | Juan José Vaquero López, Manuel Desco Menéndez, , Pedro Guerra Gutiérrez, Andrés Santos y Lleo, Giancarlo Sportelli | Advanced technology applications and human health |

INNOVATION, TRANSFER, AND APPLICATION

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|--|--|---|---|---|
| Procedimiento y dispositivo para la detección y discriminación de eventos válidos en detectores de radiación gamma | P2011290029 PCT/ES2009/070456 | FIBHGM | Eduardo Lage Negro, Gustavo Tapias Gil, José Antonio Sánchez González, Javier del Pino Vaquero, Juan José Vaquero López, .Manuel Desco Menéndez | Advanced technology applications and human health |
| Método para visualizar la información contenida en imágenes tridimensionales del corazón | P201000363 PCT/ES2011/000069 US20130069945 | FIBHGM - UPM | Esther Pérez David, Ángel Arenal Maíz, Javier Bermejo Thomas, Francisco Fernández Avilés, Manuel Desco Menéndez, MºJesús Ledesma Carballo, Andrés de Santos Lleó, José Luis Rubio Guivernau. | Natural history of heart disease. Advanced technology applications and human health. Neonatal and developmental pathophysiology |
| Dendrimeros carboxilos catiónicos obtenidos mediante "click chemistry", su preparación y sus usos | P201130804 | FIBHGM-UAH, Instituto Científico y Tecnológico de Navarra, S.A. | 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, Mº Jesús Serramía Lobera, Conchita Tros de Ilarduya | Molecular biology of HIV |
| Método de Diagnóstico de Insuficiencia Renal | P201131506 | FIBHGM, UAH, Fundación PUIGVERT | Ricardo Bosch Martínez, Arancha Ortega de Mues, Jordi Bover San Juan, Alberto Lázaro Fernández, Alberto Tejedor Jorge | Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology |
| Dispositivo de Asistencia Ventricular | P201230211 P201331422 | FIBHGM | Juan Francisco del Cañizo López. Manuel Ruiz Hernández | Artificial circulation laboratory |

INNOVATION, TRANSFER, AND APPLICATION

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|---|---|---|---|---|
| Sistema de planificación para radioterapia intraoperatoria y procedimiento para llevar a cabo dicha planificación | PCT/ES2008/000240 | GMV Aerospace and Defense S.A. Desarrollada por la FIBHGM - | Manuel Desco Menéndez, Javier Pascau González-Garzón, Felipe Calvo Manuel, Juan José Vaquero López, Manlio Fabio Valdivieso Cacique, Carlos Guillermo Illana Alejandro. | Advanced technology applications and human health. Oncologic radiotherapy |
| Dendrímeros carbosilanos con un núcleo polifenólico y su uso como antivirales | P201030450 | UAH - HGUGM | 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. | Molecular biology of HIV |
| Dendrímeros carbosilanos y su uso como antivirales | P201030233 WO2011101520 PCT/ES/2011/070104 EP 11719842.4 USA13/579,849 Australia 2011217142 China 201180010129,5 Japón 20120553360 | UAH - HGUGM | Francisco Javier De La Mata, Rafael Gómez Ramírez, Mª Ángeles Muñoz-Fernández, D. Javier Sánchez-Nieves Fernández, Dª. Beatriz Rasines Moreno, D. Louis Chonco Jiménez, D. Eduardo Arnaiz Garrido, Mª Jesús Serramía Lobera. | Molecular biology of HIV |
| Compuestos dendríticos carbosilanos homo y hetero-funcionalizados | P201231187 PCT/ES2009/070456 | UAH - HGUGM | Francisco Javier de la Mata, D. 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, Cornelia Peña González, Mª Jesús Serramía Lobera, Rosa Reguera. | Molecular biology of HIV |

INNOVATION, TRANSFER, AND APPLICATION

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|--|---------------------------|-----------------|--|--------------------------------------|
| 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 | P201330340 | FIBHGM - SERGAS | Jesús López-Herce Cid, Santiago Mencía Bartolomé, Antonio Rodríguez Núñez, | Diseases of the critically ill child |
| Simulador de sutura uterina de compresión para hemorragia puerperal | U201230998 | FIBHGM | Oscar Martínez Pérez, Ignacio Cueto Hernández, Blanca González Garzón de Zumárraga | Obstetrics and gynecology |
| Simulador de útero para emergencias obstétrica | P201330161 | FIBHGM | Oscar Martínez Pérez, Ignacio Cueto Hernández, Blanca González Garzón de Zumárraga, María del Mar García Rezola, Ana Isabel Casas García | Obstetrics and gynecology |
| Dispositivo de sutura (Doble aguja) | U201230693 | FIBHGM | Óscar Martínez Pérez, Luis Ortiz Quintana, Ignacio Cueto Hernández, Blanca Gonzalez Garzón de Zumarraga, | Obstetrics and gynecology |
| Dispositivo para bombeo de sangre formado por una cámara rígida, una membrana tubular elástica interior y válvulas en los extremos de entrada y salida, con una consola de comando que consola de comando que controla la aspiración de la sangre por aplicación de vacío alrededor de la membrana elástica y su impulsión conectando la cámara con la atmósfera | P9501070 CL19960000890 | SERMAS - HGUGM | Juan Francisco del Cañizo López | Artificial circulation laboratory |

INNOVATION, TRANSFER, AND APPLICATION

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|--|---|--------------|--|--|
| Mongoose | Nº Asiento Registral 02/2010/4412 | FIBHGM | Javier Pascau González-Garzón, Manuel Desco Menéndez, Mónica Abella García, Alejandro Sisniega Crespo, Juan José Vaquero López | Advanced technology applications and human health. |
| CUSQ: CARDIO US/ Quantification | Número de Inscripción: M-003351/2008 | FIBHGM - UPM | Manuel Desco Menéndez , María Jesús Ledesma Carbayo, Andrés Santos Lleó | Advanced technology applications and human health. |
| FIRST (Fast Iterative Reconstruction Software for Tomography) | Registrado | FIBHGM - UCM | José Manuel Udías Moinelo, Joaquín López Herráiz, Samuel España Palomares, Manuel Desco Menéndez, Juan José Vaquero López | Advanced technology applications and human health. |
| QuTIS (Quantification Tool for in vivo Spectroscopy) | Registrado | FIBHGM | Manuel Desco Menéndez, Juan José Vaquero | Advanced technology applications and human health. |
| Herramienta informática para la Gestión Electrónica de la Agenda de Transplante Hematopoyético “gesTHronica” | Número de Inscripción: M-006478/2004 Nº de Asiento Registral: 16/2008/7735 | FIBHGM | Pascual Balsalobre, Ismael Buño, José Luis Diez | Genetic and clinical aspects of hematologic malignancy and stem cell transplant. |
| Mmwks | Registrado | FIBHGM | Manuel Desco Menéndez. Juan José Vaquero | Advanced technology applications and human health. |
| Estudio de impacto clínico de un plan docente de formación continuada sobre las infecciones asociadas a dispositivos intravasculares | Número de solicitud: M-003545/2013 | FIBHGM | Emilio Bouza, María Guembe, Patricia Muñoz, Mª Eugenia González, Mª Jesús Pérez, Mª del Mar San Segundo | Infectious diseases |
| Biblioteca de fármacos para bombas de infusión inteligentes en las unidades de cuidados intensivos pediátricos | Número de registro: 16/2011/7360 | FIBHGM | Amelia Sánchez, Caridad y Silvia Manrique Rodríguez | Pharmacy |

INNOVATION, TRANSFER, AND APPLICATION

PATENTS INTELLECTUAL PROPERTY REGISTRATIONS

| NAME | REFERENCE NUMBER | OWNER | INVENTOR | IISGM GROUP |
|---|------------------------------------|--------|---|------------------------------|
| Manual para la creación de una unidad funcional de terapias biológicas en pacientes con artritis crónicas | Número de registro: 16/2013/5179 | FIBHGM | Luis Carreño, Inmaculada de la Torre, Larisa Valor, Tamara del Río, Vicente Escudero, Diana Hernández, Carmen Rodríguez | Rheumatology |
| Gesteo | Número de solicitud: M-008531/2013 | FIBHGM | Rafael Bañares, Mª Carmen Olmedo, José Mª Bellón, Miriam Arriaga, Luis Fernández, M.Isabel Ballesteros, Maite Fontans, Xoan Barreiro, Alejandro López | Management of Technical Unit |

TECHNOLOGY COMPANIES

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 biomedical nanotechnology, 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.

PROJECTS OBTAINED IN 2013

Despite the complicated national economic situation, IISGM maintained its research activity during 2013. Of note, the Institute presented applications at competitive calls both in the public and in the private sector (see below).

Projects obtained in 2013

| | Convening body | Number | |
|---|--|--------|------|
| | | 2012 | 2013 |
| National and international public competitive projects | Instituto Salud Carlos III | 22 | 20 |
| | Ministerio de Salud y Política Social | 2 | 2 |
| | Programa Ibero-Americano de Ciencia, Tecnología y Desarrollo | 0 | 1 |
| | European Commission | 2 | 3 |
| National and international private competitive projects | Fundación Alicia Koplowitz | N/A | 2 |
| | Fundación MAPFRE | 3 | 0 |
| | Fundación Mutua Madrileña | 4 | 4 |

Active Projects

| | Active research projects funded through public competitive calls | Active research projects funded through private competitive calls |
|------|--|---|
| 2011 | 200 | 78 |
| 2012 | 186 | 46 |
| 2013 | 212 | 40 |

PROJECTS OBTAINED IN 2013

CLINICAL AND OBSERVATIONAL STUDIES 2013

During the year 2013, a total of 644 clinical studies (clinical trials and observational studies) were active in our hospital, that is, a 37% increase in new studies in comparison with the previous year. Almost 90% of the clinical trials started during the year 2013 were phase II and III studies. The Translational Oncology Area led 33% of the clinical studies.

CLINICAL STUDIES ACTIVE

| | |
|------|-----|
| 2013 | 644 |
|------|-----|

NEW CLINICAL STUDIES

| | |
|------|-----|
| 2011 | 157 |
| 2012 | 190 |
| 2013 | 199 |

NEW CLINICAL STUDIES

| | Clinical trials | Observational studies |
|------|-----------------|-----------------------|
| 2012 | 127 | 63 |
| 2013 | 132 | 67 |

DISTRIBUTION OF CLINICAL TRIALS SIGNED BY PHASE (%)

| | 2011 | 2012 | 2013 |
|--|------|------|------|
| Phase I | 2.1 | 3.2 | 3.8 |
| Phase II | 28.1 | 36.2 | 27.2 |
| Phase III | 53.1 | 45 | 60.6 |
| Phase IV | 16.6 | 11.8 | 5.3 |
| Other (health care products, vaccines) | 1.0 | 3.8 | 3 |

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2013 National/International

| | Number | % |
|---------------|--------|------|
| Nacional | 89 | 44.7 |
| International | 110 | 55.3 |

DISTRIBUTION OF CLINICAL STUDIES SIGNED IN 2013 (BY iiSGM RESEARCH AREA)

| | | % |
|---------------|----|-------|
| Area 1 | 0 | 0 |
| Area 2 | 22 | 11.1 |
| Area 3 | 12 | 6.03 |
| Area 4 | 15 | 7.53 |
| Area 5 | 29 | 14.56 |
| Area 6 | 66 | 33.1 |
| Area 7 | 38 | 19.07 |
| Nursing group | 1 | 0.05 |
| Other | 16 | 8.04 |

FUNDING OF THE IISGM IN 2013

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, joint projects, and donations.

The objective of this approach is to provide information on the capacity of the groups included in the IISGM to obtain resources.

The resources generated by researchers from the IISGM in 2013 amounted to €12,495,000, ie, 10% more than in 2012). Management of funds by the Biomedical Research Foundation of Hospital Gregorio Marañón made it possible to release more than €615,000 of financial income that went to the support and development of the groups' research activity.

Resources obtained through competition: 56%

The ability of the IISGM to generate resources through competition remains sound. Fifty-six percent of resources were obtained through competitive calls, of which 53% were public (3% regional, 45% national, and 5% European).

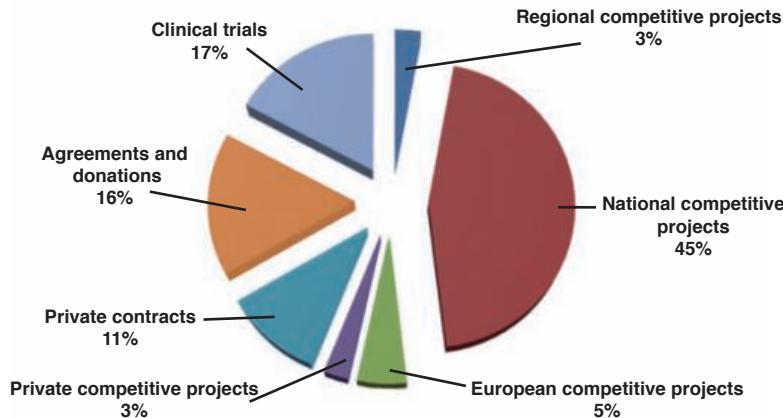
Resources obtained from the private sector: 47%

In 2013, our researchers attracted €5,813,000 from the private sector; 37% of this figure was from clinical trials and 35% from agreements and donations.

Compared with 2012, the relative weight of public funding has increased (+3%), whereas that generated by clinical trials and observational studies fell by the same percentage, even though the level in absolute terms was maintained.

As in previous years, for information provided by individual groups in this report, the only projects included are those obtained by the groups through competitive calls (public and private) in which the principal investigator was a researcher from the group. Therefore, other sources of funding were not taken into account. The objective of this approach is to provide information on the ability of each group to obtain funding in a competitive environment.

Resources generated by IISGM researchers (2013)



SCIENTIFIC PUBLICATIONS

The list that appears below reflects all publications referenced in 2013 in which researchers from the IISGM have participated. Publications with an impact factor greater than 10 points are shown in bold.

In order to calculate the total sum of the impact factor, only information from indexed publications (original articles, reviews, editorials, and proceedings papers) were taken into account. Other types of publication (eg, letters to the editor and case reports) were excluded.

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 for purposes of the total calculation of the Institute's impact factor.

| Journal | IF | No. | Sum IF | Q |
|--|-------|-----|--------|---|
| Acs Chemical Biology | 5.356 | 1 | 5.356 | 1 |
| Acta Psychiatrica Scandinavica | 5.545 | 1 | 5.545 | 1 |
| Actas Españolas de Psiquiatría | 0.759 | 2 | 1.518 | 4 |
| Actas Urologicas Españolas | 1.148 | 3 | 3.444 | 4 |
| Adicciones | 1.167 | 1 | 1.167 | 4 |
| Aesthetic Surgery Journal | 2.034 | 1 | 2.034 | 2 |
| Age | 3.445 | 1 | 3.445 | 1 |
| AIDS | 6.557 | 10 | 65.570 | 1 |
| AIDS Research and Human Retroviruses | 2.457 | 1 | 2.457 | 3 |
| Allergologia Et Immunopathologia | 1.580 | 2 | 3.160 | 4 |
| American Heart Journal | 4.555 | 3 | 13.665 | 1 |
| American Journal of Cardiology | 3.425 | 3 | 10.275 | 2 |
| American Journal of Health-System Pharmacy | 2.205 | 1 | 2.205 | 2 |

| Journal | IF | No. | Sum IF | Q |
|---|---------------|----------|---------------|----------|
| American Journal of Hematology | 3.477 | 1 | 3.477 | 2 |
| American Journal of Kidney Diseases | 5.756 | 1 | 5.756 | 1 |
| American Journal of Psychiatry | 13.559 | 1 | 13.559 | 1 |
| American Journal of Reproductive Immunology | 2.668 | 1 | 2.668 | 2 |
| Anaerobe | 2.364 | 1 | 2.364 | 3 |
| Anales de Pediatría | 0.772 | 10 | 7.720 | 4 |
| Annals of Biomedical Engineering | 3.231 | 1 | 3.231 | 1 |
| Annals of Clinical Psychiatry | 2.525 | 1 | 2.525 | 2 |
| Annals of Hematology | 2.396 | 1 | 2.396 | 3 |
| Annals of Hepatology | 2.193 | 2 | 4.386 | 3 |
| Annals of Nuclear Medicine | 1.507 | 1 | 1.507 | 3 |
| Annals of Oncology | 6.578 | 2 | 13.156 | 1 |
| Annals of Surgical Oncology | 3.943 | 1 | 3.943 | 1 |
| Annals of the Rheumatic Diseases | 9.270 | 4 | 37.080 | 1 |
| Annals of Thoracic Surgery | 3.631 | 1 | 3.631 | 1 |
| Antimicrobial Agents and Chemotherapy | 4.451 | 7 | 31.157 | 1 |
| Antiviral Research | 3.434 | 1 | 3.434 | 1 |
| Apoptosis | 3.614 | 1 | 3.614 | 2 |
| Archivos de Bronconeumología | 1.816 | 3 | 5.448 | 3 |
| Arteriosclerosis Thrombosis and Vascular Biology | 5.533 | 1 | 5.533 | 1 |
| Arthritis Care & Research | 4.039 | 1 | 4.039 | 2 |
| Atencion Primaria | 0.894 | 2 | 1.788 | 3 |
| Best Practice & Research in Clinical Rheumatology | 3.057 | 1 | 3.057 | 2 |
| Biochemical Pharmacology | 4.650 | 1 | 4.650 | 1 |
| Biology of Blood and Marrow Transplantation | 3.348 | 2 | 6.696 | 2 |
| Biopolymers | 2.288 | 1 | 2.288 | 3 |
| Biopreservation and Biobanking | 1.578 | 1 | 1.578 | 3 |

SCIENTIFIC PUBLICATIONS

| Journal | IF | No. | Sum IF | Q |
|--|---------------|----------|---------------|----------|
| BJU International | 3.130 | 1 | 3.130 | 1 |
| Blood | 9.775 | 2 | 19.550 | 1 |
| Blood Cancer Journal | 2.884 | 1 | 2.884 | 2 |
| Blood Purification | 1.920 | 3 | 5.760 | 2 |
| BMC Cancer | 3.319 | 1 | 3.319 | 2 |
| BMC Family Practice | 1.735 | 1 | 1.735 | 2 |
| BMC Genomics | 4.041 | 1 | 4.041 | 1 |
| BMC Infectious Diseases | 2.561 | 3 | 7.683 | 2 |
| BMJ-British Medical Journal | 16.378 | 1 | 16.378 | 1 |
| Bone Marrow Transplantation | 3.466 | 1 | 3.466 | 2 |
| Breast | 2.581 | 1 | 2.581 | 1 |
| Breast Cancer Research | 5.881 | 1 | 5.881 | 1 |
| Breast Cancer Research and Treatment | 4.198 | 2 | 8.396 | 1 |
| British Journal of Cancer | 4.817 | 1 | 4.817 | 1 |
| British Journal of Haematology | 4.959 | 2 | 9.918 | 1 |
| British Journal of Pharmacology | 4.990 | 1 | 4.990 | 1 |
| Canadian Journal of Cardiology | 3.940 | 1 | 3.940 | 1 |
| Cancer | 4.901 | 1 | 4.901 | 1 |
| Cancer Chemotherapy and Pharmacology | 2.571 | 1 | 2.571 | 2 |
| Cancer Treatment Reviews | 6.466 | 1 | 6.466 | 1 |
| Carcinogenesis | 5.266 | 1 | 5.266 | 1 |
| Cardiology clinics | 1.064 | 2 | 2.128 | 4 |
| Cardiovascular Drugs and Therapy | 2.952 | 1 | 2.952 | 2 |
| Cardiovascular Research | 5.808 | 2 | 11.616 | 1 |
| Catheterization and Cardiovascular Interventions | 2.396 | 1 | 2.396 | 2 |
| Circulation-Arrhythmia and Electrophysiology | 5.417 | 2 | 10.834 | 1 |
| Circulation-Heart Failure | 5.945 | 1 | 5.945 | 1 |
| Cirugia Española | 0.890 | 5 | 4.450 | 3 |

| Journal | IF | No. | Sum IF | Q |
|--|-------|-----|--------|---|
| Clinical & Translational Oncology | 1.600 | 9 | 14.400 | 4 |
| Clinical and Experimental Immunology | 3.278 | 1 | 3.278 | 2 |
| Clinical and Experimental Rheumatology | 2.973 | 2 | 5.946 | 2 |
| Clinical and Vaccine Immunology | 2.370 | 1 | 2.370 | 3 |
| Clinical Cancer Research | 8.193 | 1 | 8.193 | 1 |
| Clinical Cardiology | 2.225 | 1 | 2.225 | 2 |
| Clinical Drug Investigation | 1.704 | 1 | 1.704 | 3 |
| Clinical Genetics | 3.652 | 1 | 3.652 | 2 |
| Clinical Infectious Diseases | 9.416 | 1 | 9.416 | 1 |
| Clinical Journal of the American Society of Nephrology | 5.250 | 1 | 5.250 | 1 |
| Clinical Microbiology and Infection | 5.197 | 8 | 41.576 | 1 |
| Clinical Neuropathology | 1.311 | 1 | 1.311 | 4 |
| Clinical Nutrition | 3.940 | 1 | 3.940 | 1 |
| CNS Drugs | 4.376 | 1 | 4.376 | 1 |
| Colloids and Surfaces B-Biointerfaces | 4.287 | 2 | 8.574 | 1 |
| Comprehensive Psychiatry | 2.256 | 1 | 2.256 | 2 |
| Computer Methods and Programs in Biomedicine | 1.093 | 1 | 1.093 | 2 |
| COPD-Journal of Chronic Obstructive Pulmonary Disease | 2.620 | 1 | 2.620 | 2 |
| Critical Care | 5.035 | 1 | 5.035 | 1 |
| Critical Reviews in Oncology Hematology | 4.046 | 2 | 8.092 | 1 |
| Current Medicinal Chemistry | 3.715 | 1 | 3.715 | 1 |
| Current rheumatology reports | 2.454 | 1 | 2.454 | 3 |
| Dalton Transactions | 4.097 | 1 | 4.097 | 1 |
| Diabetes Care | 8.570 | 1 | 8.570 | 1 |
| Diagnostic Pathology | 2.411 | 1 | 2.411 | 2 |
| Digestive Diseases and Sciences | 2.550 | 1 | 2.550 | 2 |
| Drug and Alcohol Dependence | 3.278 | 1 | 3.278 | 1 |
| EJSO | 2.892 | 1 | 2.892 | 1 |

SCIENTIFIC PUBLICATIONS

| Journal | IF | No. | Sum IF | Q |
|--|---------------|----------|---------------|----------|
| Emotion | 3.371 | 1 | 3.371 | 1 |
| Enfermedades Infecciosas Y Microbiología Clínica | 1.881 | 8 | 15.048 | 3 |
| Epilepsia | 4.584 | 1 | 4.584 | 1 |
| European Child & Adolescent Psychiatry | 3.554 | 2 | 7.108 | 1 |
| European Heart Journal | 14.723 | 3 | 44.169 | 1 |
| European Journal of Anaesthesiology | 3.011 | 1 | 3.011 | 1 |
| European Journal of Cancer | 4.819 | 1 | 4.819 | 1 |
| European Journal of Cardio-Thoracic Surgery | 2.814 | 2 | 5.628 | 1 |
| European Journal of Clinical Investigation | 2.834 | 2 | 5.668 | 1 |
| European Journal of Clinical Microbiology & Infectious Diseases | 2.544 | 1 | 2.544 | 2 |
| European Journal of Clinical Nutrition | 2.950 | 1 | 2.950 | 2 |
| European Journal of Gastroenterology & Hepatology | 2.152 | 1 | 2.152 | 3 |
| European Journal of Hospital Pharmacy-Dcience and Practice | 0,471 | 2 | 0.942 | 4 |
| European Journal of Neurology | 3.852 | 1 | 3.852 | 1 |
| European Journal of Nuclear Medicine and Molecular Imaging | 5.217 | 2 | 10.434 | 1 |
| European Journal of Nutrition | 3.840 | 1 | 3.840 | 1 |
| European Journal of Obstetrics & Gynecology and Reproductive Biology | 1.627 | 1 | 1.627 | 3 |
| European Journal of paediatric neurology | 1.934 | 1 | 1.934 | 2 |
| European Journal of Physical and Rehabilitation Medicine | 1.946 | 1 | 1.946 | 1 |
| European Journal of Trauma and Emergency Surgery | 0.380 | 1 | 0.380 | 4 |
| European Neuropsychopharmacology | 5.395 | 1 | 5.395 | 1 |
| European Psychiatry | 3.210 | 2 | 6.420 | 1 |
| European Respiratory Journal | 7.125 | 2 | 14.250 | 1 |
| Experimental and Clinical Endocrinology & Diabetes | 1.760 | 1 | 1.760 | 3 |

| Journal | IF | No. | Sum IF | Q |
|---|---------------|----------|---------------|----------|
| Experimental Physiology | 2.871 | 2 | 5.742 | 2 |
| Expert Review of Neurotherapeutics | 2.834 | 1 | 2.834 | 2 |
| Expert Review of Pharmacoeconomics & Outcomes Research | 1.870 | 2 | 3.740 | 2 |
| Eye | 1.897 | 1 | 1.897 | 2 |
| Gastroenterología y Hepatología | 0.832 | 2 | 1.664 | 4 |
| Genes and Immunity | 3.789 | 1 | 3.789 | 2 |
| Gynecologic Oncology | 3.687 | 1 | 3.687 | 1 |
| Haematologica | 5.868 | 1 | 5.868 | 1 |
| Haematologica-the Hematology Journal | 5.868 | 1 | 5.868 | 1 |
| Head and Neck-Journal for the Sciences and Specialties of the Head and Neck | 3.006 | 1 | 3.006 | 1 |
| Heart Rhythm | 4.918 | 4 | 19.672 | 1 |
| Hemoglobin | 0.955 | 2 | 1.910 | 4 |
| Hepatology | 11.190 | 2 | 22.380 | 1 |
| HIV Clinical Trials | 2.141 | 2 | 4.282 | 3 |
| HIV medicine | 3.454 | 1 | 3.454 | 2 |
| Human Mutation | 5.050 | 1 | 5.050 | 1 |
| Human Pathology | 2.806 | 1 | 2.806 | 2 |
| Human reproduction | 4.585 | 1 | 4.585 | 1 |
| Hypertension Research | 2.936 | 1 | 2.936 | 2 |
| Immunologic Research | 3.525 | 1 | 3.525 | 2 |
| Infection | 2.864 | 1 | 2.864 | 2 |
| Infection Genetics and Evolution | 3.264 | 1 | 3.264 | 2 |
| Inflammatory Bowel Diseases | 5.475 | 1 | 5.475 | 1 |
| Influenza and Other Respiratory Viruses | 1.895 | 1 | 1.895 | 3 |
| Intensive Care Medicine | 5.544 | 4 | 22.176 | 1 |
| International Journal of Antimicrobial Agents | 4.259 | 2 | 8.518 | 1 |
| International Journal of Biomathematics | 0.654 | 1 | 0.654 | 4 |
| International Journal of Cardiology | 6.175 | 1 | 6.175 | 1 |

SCIENTIFIC PUBLICATIONS

| Journal | IF | No. | Sum IF | Q |
|--|---------------|----------|---------------|----------|
| International Journal of Chronic Obstructive Pulmonary Disease | 2.732 | 1 | 2.732 | 2 |
| International Journal of Clinical Pharmacy | 1.250 | 2 | 2.500 | 3 |
| International Journal of Developmental Biology | 2.567 | 1 | 2.567 | 3 |
| International Journal of Medical Microbiology | 3.420 | 2 | 6.840 | 2 |
| International Journal of Neuropsychopharmacology | 5.264 | 1 | 5.264 | 1 |
| International Journal of Oncology | 2.773 | 1 | 2.773 | 2 |
| International Journal of Pediatric Otorhinolaryngology | 1.319 | 1 | 1.319 | 3 |
| International Journal of Radiation Oncology Biology Physics | 4.176 | 1 | 4.176 | 1 |
| Investigational New Drugs | 2.927 | 1 | 2.927 | 2 |
| JAIDS-Journal of Acquired Immune Deficiency Syndromes | 4.394 | 3 | 13.182 | 1 |
| JAMA-Journal of the American Medical Association | 30.387 | 2 | 60.774 | 1 |
| Journal of Alzheimers Disease | 3.612 | 2 | 7.224 | 2 |
| Journal of Antimicrobial Chemotherapy | 5.439 | 5 | 27.195 | 1 |
| Journal of Applied Physiology | 3.434 | 2 | 6.868 | 1 |
| Journal of Arthroplasty | 2.369 | 1 | 2.369 | 2 |
| Journal of Assisted Reproduction and Genetics | 1.772 | 1 | 1.772 | 3 |
| Journal of Autism and Developmental Disorders | 3.384 | 1 | 3.384 | 1 |
| Journal of Biological Chemistry | 4.600 | 1 | 4.600 | 1 |
| Journal of Biomedical Optics | 2.752 | 1 | 2.752 | 1 |
| Journal of Cancer Research and Clinical Oncology | 3.009 | 1 | 3.009 | 2 |
| Journal of Cardiovascular Electrophysiology | 2.881 | 1 | 2.881 | 2 |
| Journal of Clinical Endocrinology & Metabolism | 6.310 | 1 | 6.310 | 1 |

| Journal | IF | No. | Sum IF | Q |
|--|---------------|----------|---------------|----------|
| Journal of Clinical Microbiology | 4.232 | 9 | 38.088 | 1 |
| Journal of Clinical Oncology | 17.879 | 2 | 35.758 | 1 |
| Journal of Clinical Pharmacology | 2.472 | 1 | 2.472 | 2 |
| Journal of Clinical Psychiatry | 5.139 | 1 | 5.139 | 1 |
| Journal of Clinical Psychopharmacology | 3.761 | 1 | 3.761 | 1 |
| Journal of Crohns & Colitis | 3.562 | 2 | 7.124 | 2 |
| Journal of Heart and Lung Transplantation | 5.611 | 1 | 5.611 | 1 |
| Journal of Hepatology | 10.401 | 1 | 10.401 | 1 |
| Journal of Hospital Infection | 2.782 | 3 | 8.346 | 2 |
| Journal of Hypertension | 4.222 | 1 | 4.222 | 1 |
| Journal of Immunology | 5.362 | 1 | 5.362 | 1 |
| Journal of Infection | 4.017 | 2 | 8,034 | 1 |
| Journal of Infectious Diseases | 5.778 | 1 | 5.778 | 1 |
| Journal of Investigational Allergology and Clinical Immunology | 2.642 | 5 | 13.210 | 3 |
| Journal of Investigative Dermatology | 6.372 | 1 | 6.372 | 1 |
| Journal of Magnetic Resonance Imaging | 2.788 | 1 | 2.788 | 1 |
| Journal of Medical Microbiology | 2.266 | 2 | 4.532 | 3 |
| Journal of Medical Virology | 2.217 | 1 | 2.217 | 3 |
| Journal of Neurology Neurosurgery and Psychiatry | 5.580 | 1 | 5.580 | 1 |
| Journal of Neuroscience | 6.747 | 1 | 6.747 | 1 |
| Journal of Obstetrics and Gynaecology | 0.604 | 1 | 0.604 | 4 |
| Journal of Paediatrics and Child Health | 1.193 | 1 | 1.193 | 3 |
| Journal of Pathology | 7.330 | 1 | 7.330 | 1 |
| Journal of Pediatric urology | 1.413 | 2 | 2.826 | 3 |
| Journal of Pediatrics | 3.736 | 1 | 3.736 | 1 |
| Journal of Perinatal Medicine | 1.425 | 1 | 1.425 | 3 |
| Journal of Perinatology | 2.347 | 1 | 2.347 | 1 |
| Journal of Psychosomatic Obstetrics and Gynecology | 1.226 | 1 | 1.226 | 3 |

SCIENTIFIC PUBLICATIONS

| Journal | IF | No. | Sum IF | Q |
|---|---------------|----------|---------------|----------|
| Journal of Reconstructive Microsurgery | 1.006 | 1 | 1.006 | 3 |
| Journal of Rheumatology | 3.173 | 1 | 3.173 | 2 |
| Journal of Sleep Research | 2.949 | 2 | 5.898 | 2 |
| Journal of Surgical Research | 2.121 | 2 | 4.242 | 2 |
| Journal of the Academy of Nutrition and Dietetics | 2.444 | 1 | 2.444 | 3 |
| Journal of the American Academy of Dermatology | 5.004 | 2 | 10.008 | 1 |
| Journal of the American Medical Directors Association | 4.781 | 1 | 4.781 | 1 |
| Journal of Thoracic and Cardiovascular Surgery | 3.991 | 1 | 3.991 | 1 |
| Journal of Thrombosis and Haemostasis | 5.550 | 1 | 5.550 | 1 |
| Journal of Ultrasound in Medicine | 1.532 | 1 | 1.532 | 2 |
| Journal of Viral Hepatitis | 3.307 | 1 | 3.307 | 2 |
| Journal of Virological Methods | 1.883 | 1 | 1.883 | 3 |
| Laboratory Animals | 0.800 | 1 | 0.800 | 3 |
| Lancet Oncology | 24.725 | 4 | 98.900 | 1 |
| Laryngoscope | 2.032 | 1 | 2.032 | 1 |
| Latin American Journal of Pharmacy | 0.319 | 4 | 1.276 | 4 |
| Leukemia & Lymphoma | 2.605 | 1 | 2.605 | 2 |
| Leukemia Research | 2.692 | 1 | 2.692 | 2 |
| Lung Cancer | 3.737 | 1 | 3.737 | 1 |
| Macromolecular Bioscience | 3.650 | 1 | 3.650 | 1 |
| Medical Hypotheses | 1.152 | 2 | 2.304 | 4 |
| Medical Mycology | 2.261 | 2 | 4.522 | 1 |
| Medical Physics | 3.012 | 1 | 3.012 | 1 |
| Medicina Clínica | 1.252 | 5 | 6.260 | 3 |
| Medicina Paliativa | 0.162 | 4 | 0.648 | 4 |
| Muscle & Nerve | 2.311 | 1 | 2.311 | 2 |
| Mycoses | 1.805 | 1 | 1.805 | 2 |

| Journal | IF | No. | Sum IF | Q |
|---|---------------|----------|---------------|----------|
| Nanomedicine-Nanotechnology Biology and Medicine | 5.978 | 1 | 5.978 | 1 |
| Nature Medicine | 28.054 | 1 | 28.054 | 1 |
| Nature Reviews Clinical Oncology | 15.696 | 1 | 15.696 | 1 |
| Nefrologia | 1.442 | 5 | 7.210 | 3 |
| Nephrology Dialysis Transplantation | 3.488 | 1 | 3.488 | 1 |
| Netherlands Heart Journal | 2.263 | 1 | 2.263 | 2 |
| Neuroimage | 6.132 | 1 | 6.132 | 1 |
| Neuroología | 1.352 | 4 | 5.408 | 4 |
| Neuropsychopharmacology | 7.833 | 1 | 7.833 | 1 |
| Nicotine & Tobacco Research | 2.805 | 1 | 2.805 | 1 |
| Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment | 1.316 | 1 | 1.316 | 2 |
| Nutrición Hospitalaria | 1.250 | 4 | 5.000 | 4 |
| Nutrients | 3.148 | 1 | 3.148 | 2 |
| Nutrition | 3.046 | 1 | 3.046 | 2 |
| Nutrition Metabolism and Cardiovascular Diseases | 3.875 | 1 | 3.875 | 1 |
| Obesity Surgery | 3.739 | 1 | 3.739 | 1 |
| Oncologist | 4.540 | 2 | 9.080 | 1 |
| Onkologie | 0.835 | 1 | 0.835 | 4 |
| Optics Express | 3.525 | 1 | 3.525 | 1 |
| Oral Diseases | 2.404 | 1 | 2.404 | 1 |
| Orphanet Journal of Rare Diseases | 3.958 | 1 | 3.958 | 1 |
| Orthopedics | 0.977 | 1 | 0.977 | 3 |
| Pancreatology | 2.504 | 1 | 2.504 | 2 |
| Parkinsonism & Related Disorders | 4.126 | 1 | 4.126 | 1 |
| Pediatric Dermatology | 1.520 | 1 | 1.520 | 3 |
| Pediatric Infectious Disease Journal | 3.135 | 3 | 9.405 | 1 |

SCIENTIFIC PUBLICATIONS

| Journal | IF | No. | Sum IF | Q |
|--|-------|-----|--------|---|
| Pediatrics | 5.297 | 1 | 5.297 | 1 |
| Pharmacogenomics Journal | 5.513 | 1 | 5.513 | 1 |
| Pharmacological Research | 3.976 | 1 | 3.976 | 1 |
| Physics in Medicine and Biology | 2.922 | 3 | 8.766 | 1 |
| Pituitary | 2.222 | 1 | 2.222 | 3 |
| Plos Genetics | 8.167 | 1 | 8.167 | 1 |
| PLOS ONE | 3.534 | 15 | 53.010 | 1 |
| Psychiatry Research | 2.682 | 1 | 2.682 | 2 |
| Psychological Medicine | 5.428 | 1 | 5.428 | 1 |
| Research in Autism Spectrum Disorders | 2.378 | 1 | 2.378 | 1 |
| Research in Veterinary Science | 1.511 | 1 | 1.511 | 1 |
| Respiratory Care | 1.840 | 1 | 1.840 | 3 |
| Respiratory Medicine | 2.917 | 2 | 5.834 | 2 |
| Revista Clínica Española | 1.314 | 3 | 3.942 | 3 |
| Revista De Neurología | 0.926 | 3 | 2.778 | 4 |
| Revista de Psiquiatría y Salud Mental | 1.044 | 3 | 3.132 | 3 |
| Revista Española de Cardiología | 3.342 | 10 | 33.420 | 2 |
| Revista Española de Documentacion Científica | 0.717 | 1 | 0.717 | 2 |
| Revista Española de Enfermedades Digestivas | 1.317 | 1 | 1.317 | 4 |
| Revista Española de Quimioterapia | 0.905 | 4 | 3.620 | 4 |
| Revista Española De Salud Pública | 0.600 | 2 | 1.200 | 4 |
| Revista Internacional de Andrología | 0.220 | 2 | 0.440 | 4 |
| Revista Portuguesa de Cardiología | 0.525 | 1 | 0.525 | 4 |
| Rheumatology | 4.435 | 3 | 13.305 | 1 |
| RSC Advances | 3.708 | 1 | 3.708 | 1 |
| Scandinavian Journal of Gastroenterology | 2.329 | 2 | 4.658 | 3 |
| Schizophrenia Research | 4.426 | 5 | 22.130 | 1 |
| Spine | 2.447 | 1 | 2.447 | 1 |

| Journal | IF | No. | Sum IF | Q |
|-------------------------------------|---------------|------------|---------------|----------|
| Strahlentherapie and Onkologie | 2.733 | 2 | 5.466 | 2 |
| Supportive Care in Cancer | 2.495 | 1 | 2.495 | 1 |
| Thrombosis and Haemostasis | 5.760 | 1 | 5.760 | 1 |
| Tissue Antigens | 2.350 | 1 | 2.350 | 2 |
| Toxicology and Applied Pharmacology | 3.630 | 1 | 3.630 | 1 |
| Translational Psychiatry | 4.360 | 1 | 4.360 | 1 |
| Transplant Immunology | 1.832 | 1 | 1.832 | 3 |
| Transplant International | 3.120 | 1 | 3.120 | 1 |
| Transplantation | 3.535 | 2 | 7.070 | 1 |
| Trends in Molecular Medicine | 10.110 | 1 | 10.110 | 1 |
| Tuberculosis | 3.503 | 1 | 3.503 | 1 |
| Ultraschall in der Medizin | 4.645 | 1 | 4.645 | 1 |
| Urology | 2.132 | 2 | 4.264 | 2 |
| Vascular | 1.000 | 1 | 1.000 | 4 |
| Veterinary Journal | 2.165 | 1 | 2.165 | 1 |
| World Psychiatry | 12.846 | 2 | 25.692 | 1 |
| Total general | | 506 | 1942.1 | |

Finally, publications in indexed journals with no impact factor and nonindexed journals are included in an appendix.

TRAINING: COURSES, SEMINARS, ONE-DAY SESSIONS

In 2013, the results of surveys completed by our researchers showed that training and content were areas for improvement. Therefore, since it was necessary to obtain a more in-depth knowledge of the training needs of our target population, we designed a questionnaire to detect training requirements. Similarly, we created the IISGM Training Committee, whose objective is to detect, analyze, and prioritize training, as well as plan and carry out priority training activities.

As part of the annual training plan, the IISGM developed the Course on Animal Experimentation and the Basic Course in Research Methodology, with 3 editions of 20 hours each offered to the different research areas, which selected the best candidates to attend.

In 2013, the Institute developed its first Research Seminars. These included the so-called "Updates on Research Activity," in which researchers with specific contracts (eg, Miguel Servet, Ramón y Cajal, and Sara Borrell) presented their research projects.

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| <i>Transportadores de folato y metotrexato en la polarización de macrófagos humanos.</i> Amaya Puig-Kröger. |
| <i>Síndromes de depleción del ADN mitocondrial.</i> Emiliano González |
| <i>Cilastatina, una nueva alternativa terapéutica en la nefrotoxicidad de sustancias tóxicas.</i> Alberto Lázaro. |
| <i>Direct phenotypical and functional dysregulation of primary human B cells by Human Immunodeficiency Virus (HIV) type 1 in vitro.</i> Marjorie Pion. |
| <i>Estudios pluridisciplinares en Inmunología Pediátrica. Papel de las células Treg.</i> Rafael Correa |
| <i>ISG asociados a respuesta al tratamiento con interferón/ribavirina y genotipo IL28B en pacientes coinfectados VHC/VIH.</i> Luis López |
| <i>Typical and atypical structural brain development during adolescence.</i> Joost Janssen. |
| <i>Trayectorias de cambio en el rendimiento cognitivo de adolescentes fumadores de cannabis con un primer episodio psicótico a 2 años de seguimiento.</i> Teresa Sánchez. |
| <i>¿Qué hemos aprendido sobre la aspergilosis invasora en los últimos años?</i> Jesús Guinea. |
| <i>New insights into the controversial role of cytokine activation in liver regeneration.</i> Javier Vaquero. |

These seminars were presented alongside the "Practical Research Seminars," which are of a more informative nature.

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| <i>Plan Horizon 20/20.</i> Lino Sánchez. |
| <i>Propiedad intelectual e industrial.</i> Nuria Marcos. |
| <i>Protección de animales utilizados en investigación: Real Decreto 53/2013.</i> Fernando Asensio. |
| <i>Servicios de Apoyo a la Investigación en el IISGM: aspectos prácticos.</i> Milagros González Rivera y responsables SAIS |
| <i>Unidad de Innovación.</i> Manuel Desco Menéndez. |

Lastly, the Second Series of One-Day Courses on Research and Innovation provided the Institute's groups with the opportunity to present the results of their research lines. The courses which were designed to be an open forum in where young researchers could actively participate, were a complete success. They proved to be completely successful.

CLINICAL PRACTICE GUIDELINES

One of the key challenges in biomedical research is to efficiently transfer the knowledge generated by research to clinical practice. The concept is best illustrated in the drafting of clinical practice guidelines.

LiSGM is a key player in the field of clinical research, and its professionals are committed to developing this important aspect of their work.

In 2013, researchers from LiSGM participated in the 33 clinical practice guidelines (see below):

| AUTHORS | TITLE | PUBLICATION | AREA |
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| Berardelli A, Wenning GK, Antonini A, Berg D, Bloem BR, Bonifati V, Brooks D, Burn DJ, Colosimo C, Fanciulli A, Ferreira J, Gasser T, Grandas F, et al. | EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease | European Journal of Neurology | 3 |
| Steg PG; James SK; Atar D; Badano LP; Lundqvist CB; Borger MA; di Mario C; Dickstein K; Ducrocq G; Fernandez-Aviles F; Gershlick AH; Giannuzzi P; Halvorsen S; Huber K; Juni P; Kastrati A; Knuuti J; Lenzen MJ; Mahaffey KW; Valgimigli M; van't Hof A; Widimsky P; Zahger D; Bax JJ; Baumgartner H; Ceconi C; Dean V; Deaton C; Fagard R; Funck-Brentano C; Hasdai D; Hoes A; Kirchhof P; Knuuti J; Kolh P; McDonagh T; Moulin C; Popescu BA; Reiner Z; Sechtem U; Sirnes PA; Tendera M; Torbicki A; Vahanian A; Windecker S; Hasdai D; Astin F; Astrom-Olsson K; Budaj A; Clemmensen P; Collet JP; Fox KA; Fuat A; Gustiene O; Hamm CW; Kala P; Lancellotti P; Maggioni AP; Merkely B; Neumann FJ; Piepoli MF; van de Werf F; Verheugt F; Wallentin L | ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting With ST-Segment Elevation | Revista Española de Cardiología | 2 |
| Bardaji A; Bodi V; Bover R; Martinez-Selles M; Sabate M; Sionis A; de Prada MV; Aros F; Arribas F; Barrabés J; de Castro OD; Heras M; Palop RL; Lopez-Sendon JL; Manito N; de Pablo MC; Ripoll T; San Roman A; de la Torre JM; Fernandez-Ortiz A; Gomez AMA; Anguita M; Cequier A; Comin J; Diaz-Buschmann I; Lozano IF; de Diego JJJ; Pan M; Worner F | Comments on the ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting With ST-Segment Elevation Spanish Society of Cardiology Working Group on the Clinical Practice Guidelines for ST-Elevation Acute Coronary Syndrome Group of Expert Reviewers for the Clinical Practice Guidelines for ST-Elevation Acute Coronary Syndrome Spanish Society of Cardiology Clinical Practice Guidelines Committee | Revista Española de Cardiología | 2 |
| Gonzalez-Vilchez F; Gomez-Bueno M; Almenar L; Crespo-Leiro MG; Arizon JM; Martinez-Selles M; Delgado J; Roig E; Lage E; Manito N | Spanish Heart Transplantation Registry. 24th Official Report of the Spanish Society of Cardiology Working Group on Heart Failure and Heart Transplantation (1984-2012) | Revista Española de Cardiología | 2 |

CLINICAL PRACTICE GUIDELINES

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|---|------------------------|------|
| Task Force Members, Montalescot G, Sechtem U, Achenbach S, Andreotti F, Arden C, Budaj A, Bugiardini R, Crea F, Cuisset T, Di Mario C, Ferreira JR, Gersh BJ, Gitt AK, Hulot JS, Marx N, Opie LH, Pfisterer M, Prescott E, Ruschitzka F, Sabaté M, Senior R, Taggart DP, van der Wall EE, Vrints CJ; ESC Committee for Practice Guidelines, 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, Knuuti J, Valgimigli M, Bueno H, Claeys MJ, Donner-Banzhoff N, Erol C, Frank H, Funck-Brentano C, Gaemperli O, Gonzalez-Juanatey JR, Hamilos M, Hasdai D, Husted S, James SK, Kervinen K, Kolh P, Kristensen SD, Lancellotti P, Maggioni AP, Piepoli MF, Pries AR, Romeo F, Rydén L, Simoons ML, Sirnes PA, Steg PG, Timmis A, Wijns W, Windecker S, Yildirir A, Zamorano JL. | 2013 ESC guidelines on the management of stable coronary artery disease: the Task Force on the management of stable coronary artery disease of the European Society of Cardiology. | European Heart Journal | 2 |
| Authors/Task Force Members, Rydén L, Grant PJ, Anker SD, Berne C, Cosentino F, Danchin N, Deaton C, Escaned J, Hammes HP, Hukuri H, Marre M, Marx N, Mellbin L, Ostergren J, Patrono C, Seferovic P, Uva MS, Taskinen MR, Tendera M, Tuomilehto J, Valensi P, Zamorano JL; ESC Committee for Practice Guidelines (CPG), 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, De Backer G, Sirnes PA, Ezquerro EA, Avogaro A, Badimon L, Baranova E, Baumgartner H, Betteridge J, Ceriello A, Fagard R, Funck-Brentano C, Gulba DC, Hasdai D, Hoes AW, Kjekshus JK, Knuuti J, Kolh P, Lev E, Mueller C, Neyses L, Nilsson PM, Perk J, Ponikowski P, Reiner Z, Sattar N, Schächinger V, Scheen A, Schirmer H, Strömberg A, Sudzhaeva S, Tamargo JL, Viigimaa M, Vlachopoulos C, Xuereb RG. | ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD: the Task Force on diabetes, pre-diabetes, and cardiovascular diseases of the European Society of Cardiology (ESC) and developed in collaboration with the European Association for the Study of Diabetes (EASD) | European Heart Journal | 2 |
| Brignole M, Auricchio A, Baron-Esquivias G, Bordachar P, Boriani G, Breithardt OA, Cleland J, Deharo JC, Delgado V, Elliott PM, Gorenek B, Israel CW, Leclercq C, Linde C, Mont L, Padeletti L, Sutton R, Vardas PE; ESC Committee for Practice Guidelines (CPG), 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, Kirchhof P, Blomstrom-Lundqvist C, Badano LP, Aliyev F, Bänsch D, Baumgartner H, Bsata W, Buser P, Charron P, Daubert JC, Dobeanu D, Faerstrand S, Hasdai D, Hoes AW, Le Heuzey JY, Mavrakis H, McDonagh T, Merino JL, Nawar MM, Nielsen JC, Pieske B, Poposka L, Ruschitzka F, Tendera M, Van Gelder IC, Wilson CM. | 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy: the Task Force on cardiac pacing and resynchronization therapy of the European Society of Cardiology (ESC). Developed in collaboration with the European Heart Rhythm Association (EHRA). | European Heart Journal | 2 |

CLINICAL PRACTICE GUIDELINES

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|--|---|------|
| Mancia G, Fagard R, Narkiewicz K, Redon J, Zanchetti A, Böhm M, Christiaens T, Cifkova R, De Backer G, Dominiczak A, Galderisi M, Grobbee DE, Jaarsma T, Kirchhof P, Kjeldsen SE, Laurent S, Manolis AJ, Nilsson PM, Ruilope LM, Schmieder RE, Sirnes PA, Sleight P, Viigimaa M, Waeber B, Zannad F, Redon J, Dominiczak A, Narkiewicz K, Nilsson PM, Burnier M, Viigimaa M, Ambrosioni E, Caufield M, Coca A, Olsen MH, Schmieder RE, Tsiofis C, van de Borne P, 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, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S, Clement DL, Coca A, Gillebert TC, Tendera M, Rosei EA, Ambrosioni E, Anker SD, Bauersachs J, Hitij JB, Caulfield M, De Buyzere M, De Geest S, Derumeaux GA, Erdine S, Farsang C, Funck-Brentano C, Gerc V, Germano G, Gielen S, Haller H, Hoes AW, Jordan J, Kahan T, Komajda M, Lovic D, Mahrholdt H, Olsen MH, Ostergren J, Parati G, Perk J, Polonia J, Popescu BA, Reiner Z, Rydén L, Sirenko Y, Stanton A, Struijker-Boudier H, Tsiofis C, van de Borne P, Vlachopoulos C, Volpe M, Wood DA. | 2013 ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). | European Heart Journal | 2 |
| Rodriguez-Yanez M; Castellanos M; Freijo MM; Fernandez JCL; Martí-Fabregas J; Nombela F; Simal P; Castillo J; Fuentes B; De Lecinana MA; Alvarez-Sabin J; Arenillas J; Calleja S; Casado I; Dávalos A; Diaz-Otero F; Egido JA; Gallego J; Pastor AG; Gil-Núñez A; Giló F; Irimia P; Lago A; Maestre J; Masjuan J; Martínez-Sánchez P; Martínez-Vila E; Molina C; Morales A; Purroy F; Ribo M; Roquer J; Rubio F; Segura T; Serena J; Tejada J; Vivancoso J | Clinical practice guidelines in intracerebral haemorrhage | Neurologia | 2 |
| de Lecinana MA; Diaz-Guzman J; Egido JA; Pastor AG; Martinez-Sánchez P; Vivancos J; Diez-Tejedor E | Endovascular treatment in acute ischaemic stroke. A Stroke Care Plan for the Region of Madrid | Neurologia | 2 |
| Royo-Bordonada MA, Lobos Bejarano JM, Villar Alvarez F, Sans S, Pérez A, Pedro-Botet J, Moreno Carriles RM, Maiques A, Lizcano A, Lizarbe V, Gil Núñez A, Fornés Ubeda F, Elosua R, de Santiago Nocito A, de Pablo Zarzosa C, de Álvaro Moreno F, Cortés O, Cordero A, Camafort Babkowski M, Brotons Cuixart C, Armario P; en nombre del Comité Español Interdisciplinario para la Prevención Cardiovascular (CEIPC). | Statement of the Spanish Interdisciplinary Cardiovascular Prevention Committee (CEIPC for its Spanish acronym) on the 2012 European Cardiovascular Prevention Guidelines. | Neurologia | 2 |
| Salvador-Carulla L; Garcia-Gutierrez JC; Gutierrez-Colosia MR; Artigas-Pallares J; Ibanez JG; Perez JG; Pla MN; Ines FA; Isus S; Cereza JM; Poole M; Lazcano GP; Monzon P; Leiva M; Parellada M; Nonell KG; Hernandez AMI; Rigau E; Martinez-Leal R | Borderline Intellectual Functioning: Consensus and good practice guidelines | Revista de Psiquiatria y Salud Mental | 3 |
| Marder SR; Alphs L; Anghelescu IG; Arango C; Barnes TRE; Caers I; Daniel DG; Dunayevich E; Fleischhacker WW; Garibaldi G; Green MF; Harvey PD; Kahn RS; Kane JM; Keefe RSE; Kinon B; Leucht S; Lindenmayer JP; Malhotra AK; Stauffer V; Umbricht D; Wesnes K; Kapur S; Rabinowitz J | Issues and perspectives in designing clinical trials for negative symptoms in schizophrenia | Schizophrenia Research | 3 |
| Fleischhacker, W.; Arango, C.; Arteel, P.; Barnes, T.; Carpenter, W.; Galderisi, S.; Knapp, M.; Marder, SR.; Sartorius, N. | Schizophrenia: Time to commit to policy change | Oxford PharmaGenesis™. Schizophrenia Bulletin | 3 |
| Nutt, D.; Gispen-de Wied, CC.; Arango, C.; Keefe, RS.; Penadés, R.; Murphy, DG.; Robbins, TW.; Sahakian, BJ | Cognition in schizophrenia: Summary Nice Consultation Meeting 2012. Guía de la European College of Neuropsychopharmacology (ECNP) | European Neuropsychopharmacology | 3 |

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| AUTHORS | TITLE | PUBLICATION | AREA |
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| Blasco AJ; Libre JM; Arribas JR; Boix V; Clotet B; Domingo P; Gonzalez-Garcia J; Knobel H; Lopez JC; Lozano F; Miro JM; Podzamczer D; Santamaria JM; Tuset M; Zamora L; Lazaro P; Gatell JM | Analysis of costs and cost-effectiveness of preferred GESIDA/National AIDS Plan regimens for initial antiretroviral therapy in human immunodeficiency virus infected adult patients in 2013 | Enfermedades Infecciosas y Microbiología Clínica | 4 |
| Domingo P; Polo R; Lozano F; Aldeguer JL; Aguirrebengoa K; Estrada V; Gutierrez F; Knobel H; Libre JM; Miralles C; Miro JM; Rivero A; Santos J; Tusset M; Antela A; Asensi V; Arribas JR; Blanco JR; Boix V; Garcia F; Gatell JM; Mallolas J; Martinez E; Moreno S; Palacios R; Perez-Elias MJ; Pineda JA; Vidal F; Berenguer J | Executive summary of the Consensus Document of GeSIDA and Spanish Secretariat for the National Plan on AIDS on combined antiretroviral treatment in adults infected by the human immunodeficiency virus (January 2013) | Enfermedades Infecciosas y Microbiología Clínica | 4 |
| Bassetti M; Marchetti M; Chakrabarti A; Colizza S; Garnacho-Montero J; Kett D; Munoz P; Cristini F; Andoniadou A; Viale P; Della Rocca G; Roilides E; Sganga G; Walsh T; Tascini C; Tumbarello M; Menichetti F; Righi E; Eckmann C; Viscoli C; Shorr A; Leroy O; Petrikos G; De Rosa FG | A research agenda on the management of intra-abdominal candidiasis: results from a consensus of multinational experts | Intensive Care Medicine | 4 |
| S. B. Debast ¹ , M. P. Bauer ² , E. J. Kuijper ³ , on behalf of the Committee* | European Society of Clinical Microbiology and Infectious Diseases: update of the treatment guidance document for Clostridium difficile infection | Clinical Microbiology and Infection | 4 |
| Bouza E, Giannella M, Pinilla B, Pujol R, Capdevila JA, Muñoz P. | The management of pneumonia in internal medicine. | Revista Clínica Española | 4 |
| Tumbarello M; Menichetti F; Righi E; Eckmann C; Viscoli C; Shorr A; Leroy O; Petrikos G; De Rosa FG. | A research agenda on the management of intra-abdominal candidiasis: results from a consensus of multinational experts | Intensive Care Medicine | 4 |
| Espinel-Ingroff A; Arendrup MC; Pfaller MA; Bonfietti LX; Bustamante B; Canton E; Chryssanthou E; Cuenca-Estrella M; Dannaoui E; Fothergill A; Fuller J; Gaustad P; Gonzalez GM; Guarro J; Lass-Florl C; Lockhart SR; Meis JF; Moore CB; Ostrosky-Zeichner L; Pelaez T; Pukinskas SRBS; St-Germain G; Szeszs MW; Turnidge J. | Interlaboratory Variability of Caspofungin MICs for Candida spp. Using CLSI and EUCAST Methods: Should the Clinical Laboratory Be Testing This Agent? | Antimicrobial Agents and Chemotherapy | 4 |

CLINICAL PRACTICE GUIDELINES

| AUTHORS | TITLE | PUBLICATION | AREA |
|---|---|--|------|
| Mondejar PL; Crespo RZ; Garrido EM; Roca RF; Oviedo AHR; Guajedo BA; de Castro RG; Lleti MS; Garcia JMA; Egalia MIA; Feijoo JR; Gil CL; Aguilar GA; Herreras JIG; Laderas JCD; Montero JG; Guijo BG; Garcia JP; Andres GQ; Estrella MC; Bernal MLPD; Garcia PM; Lerma FA; Alvarez CF; Abete JF; Lopez RL; Gonzalez CA; Vera JCV; Sa MB; Bouzada M; Gonzalo LS; Cuesta CS; Ramos EL; Rodriguez FA; Benveniste E; Ortiz FJGD; Valles J; Chinesta SS; Valero RR; Medrano FL; Llorente MAA; Sanchez-Belmonte MJPP; Gonzalez MC; Artazcoz PV; Vidal MV; Garcia A; Rodriguez MJ; Saez AC; Santos ED; Bello TT; Villanueva JRF; Ribo MTR; Pedros VT; Perez MA; Arenzana A; Hernandez RG; Navarro AA; Pascual JLA; Castillo C; Gonzalez N; Urbano FE; Lerma FA; Medel GT; Bengoeetxea U; Talavera JCP; Sanchez RJ; Andres GQ; Garcia VF; Hernandez PP; Vicente AB; Perez JC; de la Torre Prados MVD; Soto JM; Gonzalez CA; Vazquez AL; Monserrat FM; Montero JG; Martin ET; de Ceballos JPG; Gutierrez LQ; Doblas A; Cortes JG; Ramirez CS; Puente MG; Luque P; Valero MRI; del Portillo IP; Martin LG; Cervera M; Sanz MAB; Ortiz MD; Gomez ET; de Lamo FB; Aldecoa C; Loureiro MAP; Manzano MMC; Otero MEV; Tamayo JAP; Duran MV; Costa JRG; Puigdollers IM; Recio MT; Casas JFM; Leon R; Salvador S; Esparza CG; Palanco JL. | EPICO PROJECT. Development of educational recommendations using the DELPHI technique on invasive candidiasis in non- neutropenic critically ill adult patients | Revista Espanola de Quimioterapia | 4 |
| Bouza E; Marin M; Pelaez T; Alcala L. | The situation and management of Clostridium difficile infection in Spain: an opinion document. | Revista Espanola de Quimioterapia | 4 |
| Rodriguez RP; Clotet EP; de Medrano VAL; Andreu JB; Burillo-Putze G; Ramos JRB; Perez SC; Gonzalez RC; Sanchez-Migallon AD; Gutierrez CD; Beneitez OLF; Civera IG; del Castillo JG; Gomez MN; Tey JMG; Jimenez AJ; Munoz RP; Carbonell RP; Conejo PR; Gil ID; Andreu OM | Executive Summary. Consensus Statement of the National AIDS Plan Secretariat, Spanish Society of Emergency Medicine and AIDS Study Group of the Spanish Society of Infectious Diseases and Clinical Microbiology on Emergency and HIV Infection | Enfermedades Infecciosas y Microbiología Clínica | 5 |
| Gonzalez-Tome MI; Rivera M; Camano I; Norman F; Flores-Chavez M; Rodriguez-Gomez L; Fumado V; Hortelano MGL; Lopez-Velez R; Gonzalez-Granado LI; Garcia-Burguillo A; Santos MD; Avila O | Recommendations for the diagnosis, treatment and follow-up of the pregnant woman and child with Chagas disease | Enfermedades Infecciosas y Microbiología Clínica | 5 |
| Gomez JG; Lopez MEP; Bermejo MA; Alvarez YE; Mata JG | SEOM guide to antiemetic prophylaxis in cancer patients treated with chemotherapy 2013 | Clinical & Translational Oncology | 6 |
| Gallardo E; Arranz JA; Maroto JP; Leon LA; Bellmunt J | Expert opinion on chemotherapy use in castration-resistant prostate cancer progressing after docetaxel | Critical Reviews in Oncology Hematology | 6 |
| Carcavilla A, Santomé JL, Galbis L, Ezquieta B | Síndrome de Noonan | Revista Española de Endocrinología Pediátrica | 7 |
| Pilar García Peris, Laura Frías Soriano | Recomendaciones dietético nutricionales. Servicio Madrileño de Salud | Consejería de Salud | 7 |

CLINICAL PRACTICE GUIDELINES

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|--|--|------|
| Lopez-Herce J, Calvo C, Rey C, Rodriguez Nuñez A, Baltodano A | Manual de Cuidados Intensivos Pediátricos (4 ^a edición) | Ed Publimed | 7 |
| Cortes JIA; Domingo AA; Mir LA; Roura LC; Lopez MD; Sastre JL; Marcos JCM; Prieto AP; Fraile MD; Abizanda SS; Luna MS; Perez MJS; Cardoso RT | Prevention of Neonatal Group B Streptococcal Infection. Spanish Recommendations. Update 2012. SEIMC/SEGO/SEN/SEQ/SEMFYC Consensus Document | Enfermedades Infecciosas y Microbiología Clínica | 7 |
| Moral L; Torres-Borrego J; Murua JK; Valverde-Molina J; Belinchon JP; Praena-Crespo M; Casanueva CO; Callen-Blecua MT; Fernandez-Llamazares CM; Rey CC | Association between paracetamol exposure and asthma: update and practice guidelines | Anales de Pediatría | 7 |

DOCTORAL THESES

Providing more training opportunities to its members is a key aspect of research institute activity. This is best reflected in the supervision of doctoral theses.

During 2013, a total of 31 doctoral theses were defended. This was a record figure for the liSGM (see below).

| Student | Title | Director | University | Area |
|------------------------------|--|--|-----------------------------------|--------|
| Alejandro Sisniega Crespo | Contributions to the improvement of image quality in CBCT and CB μ CT and application in the development of a CB μ CT system | Juan José Vaquero López | Universidad Carlos III de Madrid | Area 1 |
| Judit Chamorro Servent | Using state-of-the-art inverse problem techniques to develop reconstruction methods for fluorescence diffuse optical tomography | Manuel Desco Menéndez, Jorge Ripoll Lorenzo | Universidad Carlos III de Madrid | Area 1 |
| Ernesto Martínez Martínez | Papel de la leptina sobre las alteraciones cardiovasculares asociadas a la obesidad: Mecanismos implicados | Victoria Cachofeiro, María Miana, María Luaces | Universidad Complutense de Madrid | Area 2 |
| Ana Torres do Rego | Efectos del consumo de bebidas alcohólicas en la trigliceridemia diurna en población general y de los marcadores de inflamación y de oxidación en población joven sana | Luis Álvarez sala, Victoria cachofeiro, Jesús Millán | Universidad Complutense de Madrid | Area 2 |
| Irene Amorós García | Modulación de los canales Kv4.3 cardíacos humanos por endocannabinoides y ácidos grasos | Eva Delpón, Juan Tamargo, Ricardo Caballero | Universidad Complutense de Madrid | Area 2 |
| Marta Gónzalez de la Fuente | Comparación de las corrientes iónicas implicadas en la repolarización de las aurículas derecha e izquierda humanas en pacientes en ritmo sinusal y con fibrilación auricular | Eva Delpón, Juan Tamargo, Ricardo Caballero | Universidad Complutense de Madrid | Area 2 |
| Eduardo Villacorta Argüelles | Participación de las nanopartículas calcificantes en la etiopatogenia de la valvulopatía aórtica degenerativa | Francisco Fernández-Avilés, Pedro Luís Sánchez Fernández | Universidad Complutense de Madrid | Area 2 |

DOCTORAL THESES

| Student | Title | Director | University | Area |
|--------------------------------|--|---|-----------------------------------|--------|
| Miriam Giráldez Quiroga | Síndrome Metabólico secundario a antipsicóticos en niños y adolescentes no tratados previamente | Celso Arango López | Universidad Complutense de Madrid | Area 3 |
| Ana Calvo Calvo | Estudio de la eficacia de una psicoterapia grupal en paralelo para adolescentes con psicosis de inicio temprano y sus familiares | Celso Arango López | Universidad Complutense de Madrid | Area 3 |
| Beatriz de la Casa Fages | Efecto de la estimulación subtalámica sobre el equilibrio en la enfermedad de Parkinson | Francisco Grandas | Universidad Complutense de Madrid | Area 3 |
| Carolina Navarro San Francisco | Evolución de las características clínicas y epidemiológicas de la coinfección por el virus de la inmunodeficiencia humana y el virus de la hepatitis C en la población española 2010 | Juan José González García, Francisco Arnalich Fernández, Juan Berenguer Berenguer | Universidad Autónoma de Madrid | Area 4 |
| Paula López Roa | Optimización del diagnóstico microbiológico de gripe basada en la experiencia de la pandemia de gripe A H1N1 de 2009 | Emilio Bouza Santiago Muñoz García-Paredes, Patricia | Universidad Complutense de Madrid | Area 4 |
| Sandra García Gallego | Síntesis de complejos metálicos basados en ligandos nitrogenados polianiónicos. Aplicaciones como agentes antivirales | Francisco Javier de la Mata de la Mata, Mª Ángeles Muñoz Fernández | Universidad Alcalá de Henares | Area 5 |
| Isabel María García Merino | importancia en la investigación de un biobanco especializado en muestras y datos de pacientes infectados por el virus de la inmunodeficiencia humana (VIH) | M. Ángeles Muñoz Fernández, Manuel Fresno Escudero | Universidad Autónoma de Madrid | Area 5 |
| Ana Judith Perisé Barrios | Efecto del VIH-1 en la desregulación de los linfocitos B. Papel de dendrímeros carbosilano en la respuesta inflamatoria, como agentes transfectantes y en la polarización de macrófagos de tipo M2 | M. Ángeles Muñoz Fernández, Marjorie Pion, Manuel Fresno Escudero | Universidad Autónoma de Madrid | Area 5 |

DOCTORAL THESES

| Student | Title | Director | University | Area |
|-------------------------------|--|---|-----------------------------------|--------|
| Alicia Prieto García | Los complejos triptasa-heparina de los mastocitos humanos y de ratón, impiden la generación de fibrina y la coagulación del plasma inducida por la trombina, mediante la destrucción proteolítica del fibrinógeno | José Manuel Zubeldia Ortúño | Universidad Autónoma de Madrid | Area 5 |
| Sandra García Gallego | Síntesis de complejos metálicos basados en ligandos nitrogenados polianiónicos. Aplicaciones como agentes antivirales | Mª Ángeles Muñoz Fernández, Francisco Javier de la Mata de la Mata, | Universidad Alcalá de Henares | Area 5 |
| Enrique Vacas Córdoba | Nanotecnología y VIH: Aplicación de dendrímeros en estrategias terapéuticas y preventivas frente a la infección | MªÁngeles Muñoz Fernández, Marjorie Pion | Universidad Autónoma de Madrid | Area 5 |
| Roberto Molina Escudero | Modelo predictivo para La recidiva bioquímica en los pacientes con cáncer de próstata localizado tratados con prostatectomía radical en monoterapia | Carlos Hernández Fernández, Felipe B. Herranz Amo | Universidad Complutense de Madrid | Area 6 |
| Fredy Raul Atahualpa Arenas | Contribución de la radioterapia intraoperatoria en el tratamiento del cáncer de páncreas localmente avanzado resecado | José Luis García Sabrido, Felipe Calvo Manuel | Universidad Complutense de Madrid | Area 6 |
| Carlos Javier Anguita Velasco | Estudio observacional según práctica clínica de la actividad movilizadora de un biosimilares de factor estimulante de colonias de granulocitos en pacientes con linfoma o mieloma candidatos a trasplante autólogo de progenitores hematopoyéticos | José Luis Díez Martín, Ismael Buño Borde, José Rafael Cabrera Marín | Universidad Autónoma de Madrid | Area 6 |
| Carmen Garrido Colino | Déficit de vitamina D y salud ósea en niños con enfermedad de células falciformes de la comunidad de Madrid: medidas de intervención | Elena Cela de Julián, Teresa Hernández Sampelayo | Universidad Complutense de Madrid | Area 6 |

DOCTORAL THESES

| Student | Title | Director | University | Area |
|------------------------------------|--|--|-----------------------------------|--------|
| Gonzalo Tapia Rico | Correlación entre los subtipos moleculares intrínsecos en el cáncer de mama por PAM50 y la inmunohistoquímica tumoral | Miguel Martín | Universidad Complutense de Madrid | Area 6 |
| Javier Narbona Cáceres | Presencia de células troncales mesenquimales en médula ósea. Estudio comparativo entre cresta ilíaca, metáfisis distal de fémur y metáfisis proximal de tibia | J. Vaquero Martin, M. E. Fernández Santos | Universidad Complutense de Madrid | Area 7 |
| Alberto Capa Grasa | Cirugía Ultra Mínimamente invasiva guiada por ultrasonidos para la liberación del túnel carpiano: Investigación, desarrollo y aplicación de una nueva técnica | J. Vaquero Martin, José Manuel Rojo Manaute | Universidad Complutense de Madrid | Area 7 |
| Jesús Cecilio López-Menchero Oliva | Péptido natriurético tipo B en niños: su relación con la insuficiencia cardiaca y utilidad pronóstica en el posoperatorio precoz de cirugía cardiaca por cardiopatías congénitas | Andrés Martínez Gutiérrez, Andrés José Alcaraz Romero | Universidad de Castilla La Mancha | Area 7 |
| Carmen María Cervantes Guijarro | Nuevas tecnologías, una alternativa de ayuda en Atención Primaria pediátrica | Manuel Sánchez Luna | Universidad Complutense de Madrid | Area 7 |
| Álvaro Giménez Manzorro | Impacto de un programa para la conciliación de la medicación habitual en una unidad quirúrgica | Rosa Mª Romero Jiménez, MA Calleja-Hernández, Fernando Martínez Martínez | Universidad de Granada | Area 7 |
| Lucía Cortejoso Fernández | Biomarcadores farmacogenéticos asociados a efectos adversos de la quimioterapia frente al cáncer colorrectal | Luis Andrés López Fernández, Irene Iglesias Peinado | Universidad Complutense de Madrid | Area 7 |

DOCTORAL THESES

| Student | Title | Director | University | Area |
|------------------------|--|---|-----------------------------------|--------|
| Leire Pérez Latorre | Papel de la elastografía de transición en el diagnóstico de la hipertensión portal en pacientes cirróticos monoinfectados por el virus de la hepatitis C y coinfecitados por el virus de la inmunodeficiencia humana. | Matilde Sánchez Conde, Juan Berenguer Berenguer, Rafael Bañares | Universidad Complutense de Madrid | Area 7 |
| José Ángel López Baena | Aclaramiento del verde de indocianina y flujos vasculares hepáticos intraoperatorios. Utilidad en la predicción de la función precoz del injerto hepático cadáverico completo, daño biliar no anastomótico y supervivencia | Jose Luis García Sabrido, Rafael Bañares | Universidad Complutense de Madrid | Area 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. These structures facilitate the progress of research and rapid transfer of scientific advances to the public health sector.

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]).

LiSGM 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 in 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. The impact of mental illness on society today is enormous. 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 our society 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 [Cardiovascular Research Network])

General coordinator: Dr. Francisco Fernández Avilés Díaz

The Cardiovascular Research Network (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 to develop the highest quality research and training to further our understanding of the mechanisms underlying cardiovascular disease 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

The RIC brings together more than 800 researchers from throughout Spain. These are organized in 64 research groups and develop their scientific and training activity based on 7 research programs.

Red de Innovación en Tecnologías Médicas y Sanitarias (Red ITEMAS [Medical Technology Innovation Network])

General coordinator: Dr. Manuel Desco Menéndez

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). ITEMAS aims to promote innovation in healthcare technology as a basic tool for ensuring the sustainability of the National Health System. It supports the development of a culture of innovation necessary to facilitate the integration of science and industry in the field of medical technology. The core of ITEMAS in 2013 comprised the Innovation Support Units of the 14 main hospitals in the National Health System. Until recently, the work of these units was not fully defined and involved providing advice to health professionals on various aspects of innovation and knowledge transfer: evaluation of ideas, support in protection of intellectual/industrial property rights, search for technical and/or commercial partners, training, and promotion of the culture of innovation in hospital centers.

Other organizations involved in health care innovation also participate in ITEMAS. These include technology centers, scientific societies, companies, and research groups. Appropriate communication and cooperation between innovation support units and these organizations is essential if the ideas and projects generated in hospital centers are to become products and services that provide value for the health system and society in general.

Both hospitals and the other partners that make up ITEMAS also participate in multidisciplinary working groups that aim to identify areas where a solid culture of innovation can be implemented. The issues discussed by these groups include analysis of the regulatory framework for technology transfer at national level and at the level of the Autonomous Communities (in order to ensure that their work is aligned with policies for the promotion of health innovation that are already in force), development of evaluation criteria that enable measurement of innovation activity in hospitals, and the creation of a web map to

facilitate—in real time—access to knowledge of the current situation of technological innovation in hospitals, thus enabling contacts and partnerships to be established.

Similarly, other hospital innovation units and other relevant institutions promoting innovation in medical technology (public and private) can join the network as collaborators.

Finally, the IiSGM is also home to research groups that participate in various cooperative research networks (see below).

COOPERATIVE RESEARCH

| Structure | Group | Group Director | Area | Role |
|--|---|----------------------------|---|-----------------------|
| 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 |
| RIC | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Associated clinical |
| RIC | Cardiovascular pathophysiology | Victoria Cachofeiro | Cardiovascular diseases | Associated clinical |
| RIC | Cardiac cellular electrophysiology | Eva Delpón | Cardiovascular diseases | Associated clinical |
| RIC | Cardiology and heart transplant in children | Constancio Medrano | Cardiovascular diseases | Associated clinical |
| Red de Innovación ITEMAS | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Network coordination |
| Plataforma Innovación en Tecnologías Médicas y Sanitarias (ITEMAS) | Advanced technology applications and human health | Manuel Desco | Biomedical engineering | Research 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 | Clinical and epidemiological aspects of HIV and associated conditions | Juan Berenguer | Infectious diseases and AIDS | Associated clinical |
| 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 |
| CIBERES | Infectious diseases | Emilio Bouza | Infectious diseases and AIDS | Research group |
| CIBEREHD | Fisiopatología e historia natural de las enfermedades hepáticas y gastroenterológicas | Rafael Bañares | Systemic diseases and organ transplantation | Research group |

COOPERATIVE RESEARCH

| Structure | Group | Group Director | Area | Role |
|--|--|----------------------------|---|---|
| Plataforma de Biobancos | Molecular immunobiology. Molecular biology of HIV | Mª Ángeles Muñoz Fernández | Diseases of the immune system | Collection of biological samples in association with: Histopathology HIV-infected patients Mother and child Pediatrics BioBank HIV |
| Red de terapia celular (TERCEL) | Natural history of heart disease | Francisco Fernández-Avilés | Cardiovascular diseases | Research group |
| Red SAMID (Red de salud materno infantil y del desarrollo) | Diseases of the critically ill child | Jesús López-Herce Cid | Systemic diseases and organ transplantation | Research group |
| RTICC-Red temática de investigación cooperativa en cancer | Genetics and clinical aspects of hematologic malignancy and hematopoietic stem cell transplant | José Luis Díez | Translational oncology | Research group |
| RTICC-Red temática de investigación cooperativa en cancer | Translational oncology and personalized cancer therapy | Miguel Martín | Translational oncology | Research group |
| RESITRA | Infectious diseases | Emilio Bouza | Infectious diseases and AIDS | Research group |
| RIS-Red Española de Investigación en Sida | Molecular biology of HIV | Mª Ángeles Muñoz | Diseases of the immune system | Research group |
| RIS-Red Española de Investigación en Sida | Infections in the pediatric population | Mª Luisa Navarro | Diseases of the immune system | 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 de la Cruz Arguedas | Research Support Services | Participating unit |



3

Group Scientific Output by Area

Area 1. Biomedical engineering

Area 2. Cardiovascular diseases

Area 3. Neuroscience and mental health

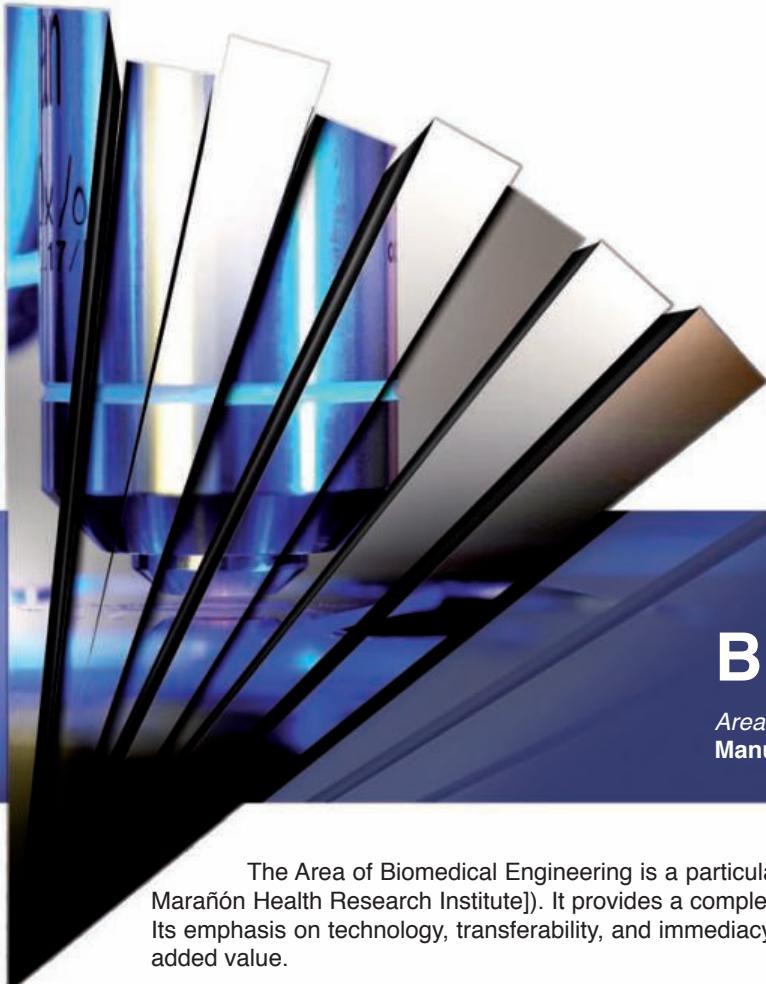
Area 4. Infectious diseases and AIDS

Area 5. Diseases of the immune system

Area 6. Translational oncology

Area 7. Systemic diseases and organ transplantation

Nursing



AREA 1

Biomedical Engineering

Area Coordinator:
Manuel Desco Menéndez

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, make 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, defining and strengthening the area's role in teaching, completing the strategic development of the Innovation Support Unit of Hospital General Universitario Gregorio Marañón (HGUGM)—which considerably stepped up its activity during the last year—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. Much 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 Institute, promoting multidisciplinary research capacity and rapid knowledge transfer, and, in short, responding effectively to key issues in the field of biomedicine.

RESEARCH AXES AND LINES

Strategic axes

- A1: Consolidation of collaboration with Universidad Carlos III, by boosting joint activities between liSGM and technology groups from UC3M.
- A2: Defining academic collaboration between the Institute and Universidad Carlos III in the teaching component 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, by continuing with its extension to other hospitals and institutions of the Comunidad de Madrid.

Strategic lines

1. Clinical research support

Strategic objectives:

- Intensify the 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 the development of fluorescence tomography systems (FMT and SPIM).

RESEARCH AXES AND LINES

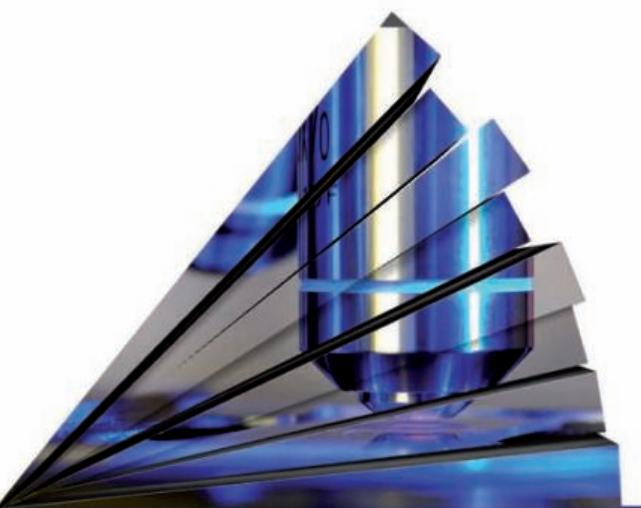
Strategic lines

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.

AREA 1 : GROUPS



Biomedical Engineering

Advanced technology applications and human health

ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

Group Director: Dr. Manuel Desco Menéndez

Group type: Consolidated



Research lines

L1. Imaging support for clinical research.

L2. Development of technology.

L3. Biomedical experimentation.

The group's work focuses mainly on research into medical imaging techniques, both in development of new technology and processing methods and in 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 Hospital Gregorio Marañón, both of which work together to form the iISGM. This markedly multidisciplinary character ensures a strong connection between the group and real clinical and preclinical needs. Cooperation with hospitals and other

centers for biomedical research facilitates rapid validation of results and has led to several successful cases of technology transfer to industry.

Consequently, we work with a wide range of imaging and processing techniques, some of which we have at our disposal before their commercial release, thus enabling us to offer highly advanced imaging services to research groups both within and outside our organization.

Research activities are centered along 3 main lines: technical support to clinical investigation, technological development of imaging tools, and biomedical research projects that require preclinical molecular imaging.

Group members

- **Mónica Abella García:** Postdoctoral
- **Yasser Alemán Gómez:** Predoctoral
- **Íván Balsa Lozano:** Support technician
- **Susana Carmona Cañabate:** Postdoctoral
- **Eva Carravilla Expósito:** Administrative staff
- **Cristina Chavarriás Navas:** Predoctoral
- **Rigoberto Chil Pérez:** Predoctoral
- **Lorena Cussó Mula:** Predoctoral
- **Manuel Desco Menéndez:** Senior researcher
- **Alexandra de Francisco López:** Support technician
- **Inés García Barquero:** Predoctoral
- **David García García:** Postdoctoral
- **Verónica García Vázquez:** Predoctoral
- **Trajana garrido huerta:** Management
- **M^a Victoria Gómez Gaviro:** Postdoctoral
- **Georgios Konstantinou:** Predoctoral
- **María La Calle aurioles:** Predoctoral
- **Pedro Macías Gordaliza:** Predoctoral
- **Asier Marcos Vidal:** Predoctoral
- **Eugenio Daniel Marinetto Carrillo:** Predoctoral
- **Kenia Martínez Martínez:** Postdoctoral
- **María Elena Martino Casado:** Postdoctoral

ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

- **José María Mateos Pérez:** Predoctoral
- **Claudia de Molina Gómez:** Predoctoral
- **Paula Montesinos Suárez de la Vega:** Predoctoral
- **Diego Muñoz Beltrán:** Support technician
- **Francisco Javier Navas Sánchez:** Predoctoral
- **Aurora María Olmo Castillo:** Predoctoral
- **Ana Ortega Gil:** Predoctoral
- **Javier Pascau González-Garzón:** Senior researcher
- **Santiago Peña Zalbidea:** Predoctoral
- **Juan Felipe Pérez-Juste Abascal:** Postdoctoral
- **Anna Riera Guerra:** Management
- **Jorge Ripoll Lorenzo:** Senior researcher
- **Marco Antonio Rivas Fernández:** Management
- **Yolanda Sierra Palomares:** Support technician
- **María Luisa Soto Montenegro:** Miguel Servet
- **Juan José Vaquero López:** Senior researcher
- **Maria del Rosario Vázquez Alcázar:** Management

Research Projects – Competitive Calls

Principal investigator: M. Luisa Soto Montenegro
Title: Obesidad: tratamiento mediante estimulación cerebral profunda en un modelo experimental.
Funding body: F. Mapfre Medicina
Start date: 2012
End date: 2013

Principal investigator: Javier Pascau González-Garzón
Title: Simulación y tratamiento guiado por imagen en radioterapia.
Funding body: Ministerio de Economía y Competitividad
Start date: 2010
End date: 2013

Principal investigator: Manuel Desco Menéndez
Title: Describing pathophysiology to promote focal therapy in treatment of schizophrenia - an animal experimental study.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

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: Manuel Desco Menéndez
Title: Coordinador RETICS de innovación en tecnologías médicas y sanitarias
Funding body: Instituto de Salud Carlos III
Start date: 2010
End date: 2013

Principal investigator: Juan José Vaquero Lopez
Title: ARTEMIS: imagen médica multimodal avanzada en el tiempo real.
Funding body: Consejería educación
Start date: 2010
End date: 2013

Principal investigator: Manuel Desco Menéndez
Title: Imagen médica multimodal en tiempo real para escenarios complejos de tratamiento (MITRA)
Funding body: Ministerio de Economía y Competitividad
Start date: 2011
End date: 2013

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: European Union
Start date: 2012
End date: 2017

ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

Principal investigator: Javier Pascau González-Garzón
Title: Tecnologías para procedimientos intraoperatorios seguros y precisos. XIORT
Funding body: Ministry of Economy and Competitiveness
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: Manuel Desco Menéndez
Title: Tecnologías de imagen molecular avanzadas (AMIT)
Funding body: Programa CENIT. CDTI. Ministerio de Ciencia e Innovación
Start date: 2010
End date: 2013

Theses

| DOCTORAL STUDENT | TITLE | DIRECTOR | UNIVERSITY |
|---------------------------|--|---|----------------------------------|
| Alejandro Sisniega Crespo | Contributions to the improvement of image quality in CBCT and CB μ CT and application in the development of a CB μ CT system | Juan José Vaquero López | Universidad Carlos III de Madrid |
| Judit Chamorro Servent | Using state-of-the-art inverse problem techniques to develop reconstruction methods for fluorescence diffuse optical tomography | Manuel Desco Menéndez, Jorge Ripoll Lorenzo | Universidad Carlos III de Madrid |

Patents and Intellectual Property Registrations

Title: Ciclotrón clásico superconductor compacto
Reference: P201330626
Owner: CIEMAT, Universidad Carlos III de Madrid
Inventors: L García-Tabares, CC. Oliver Amorós, F Toral, D Gavela, D Obradors, C Vázquez, I Podadera, J Munilla, J Calero, JM Pérez, M Desco, F Haug

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

ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

Title: Aparato de adquisición de datos para tomografía computerizada por emisión de radiación gamma y su funcionamiento

Reference: P200702836

Owner: FIBHGM

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 Lleo, José Luis Rubio Guiernau

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

Title: MANGOOSE

Reference: N° Asiento Registral 02/2010/4412

Owner: FIBHGM

Inventors: Javier Pascau González-Garzón, Manuel Desco Menéndez, Mónica Abellá García, Alejandro Sisniega Crespo, Juan José Vaquero López

Title: CUSQ: CARDIO US/Quantification

Reference: M-003351/2008

Owner: FIBHGM - UPM

Inventors: Manuel Desco Menéndez, María Jesús Ledesma Carbayo, Andrés Santos Lleo

Title: FIRST (Fast Iterative Reconstruction Software for Tomography)

Reference: Registrado

Owner: FIBHGM - UCM

Inventors: José Manuel Udiá Moinelo, Joaquín López Herraiz, Samuel España Palomares, Manuel Desco Menéndez, Juan José Vaquero López

Title: QuTIS (Quantification Tool for in vivo Spectroscopy)

Reference: Registrado

Owner: FIBHGM

Inventors: Manuel Desco Menéndez, Juan José Vaquero

Title: MMWKS

Reference: Registrado

Owner: FIBHGM

Inventors: Manuel Desco Menéndez, Juan José Vaquero

ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

Publications

Total impact factor: 58.3

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

- Ronald JA; Cusso L; Chuang HY; Yan XR; Dragulescu-Andrasi A; Gambhir SS. Development and Validation of Non-Integrative, Self-Limited, and Replicating Minicircles for Safe Reporter Gene Imaging of Cell-Based Therapies. *PLOS ONE*. 2013; 8(8). IF: 3.534. Quartile: 1.
- Martino ME; de Villoria JG; Lacalle-Aurioles M; Olazaran J; Cruz I; Navarro E; Garcia-Vazquez V; Carreras JL; Desco M. Comparison of different methods of spatial normalization of FDG-PET brain images in the voxel-wise analysis of MCI patients and controls. *ANNALS OF NUCLEAR MEDICINE*. 2013; 27(7) 600-609. IF: 1.507. Quartile: 3.
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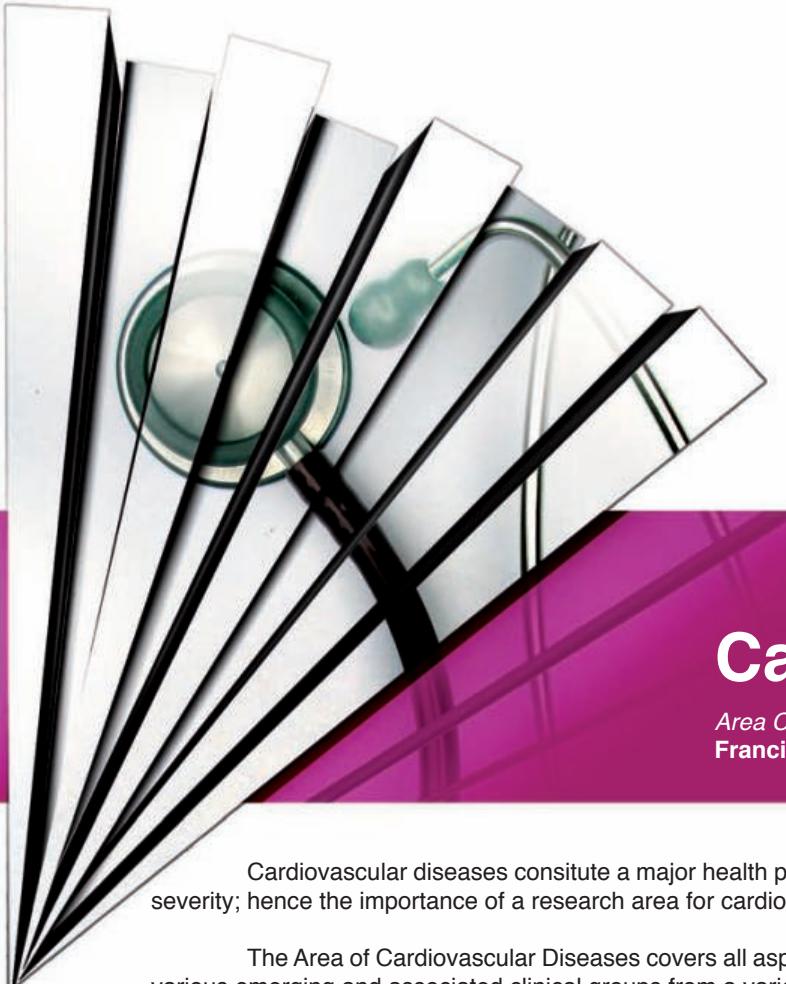
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ADVANCED TECHNOLOGY APPLICATIONS AND HUMAN HEALTH

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- Mateos-Pérez JM; Desco M; Dae MW; García-Villalba C; Cusso L; Vaquero JJ. Automatic TAC extraction from dynamic cardiac PET imaging using iterative correlation from a population template. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE. 2013; 111(2) 308-314. IF: 1.093. Quartile: 2.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 9 | 26.9 |
| Joint publications | 9 | 31.4 |
| First-decile publications | 4 | 19.9 |
| First-quartile publications | 14 | 52.8 |
| Second-quartile publications | 2 | 2.4 |
| Third-quartile publications | 1 | 1.5 |
| Fourth-quartile publications | 1 | 1.6 |
| Nonindexed publications | 0 | - |
| Total publications | 18 | 58.3 |



AREA 2

Cardiovascular Diseases

Area Coordinator:
Francisco Fernández-Avilés Díaz

Cardiovascular diseases constitute a major health problem in western 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 IISGM.

The Area of Cardiovascular Diseases covers all aspects of this modern epidemic, through basic research and, 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. In fact, 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 is the coordination during the last year of the only Cardiovascular Research Network in Spain, which was the result of the fusion of the previous groups. In addition, 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).

Despite the difficulties faced by researchers today, 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 axes and lines

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 area of basic research.

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 FP-7.
- 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.

4. Maintenance and consolidation of scientific production.

Strategic objectives:

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

Research axes and lines

Strategic lines

-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 funding 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 in the offer 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

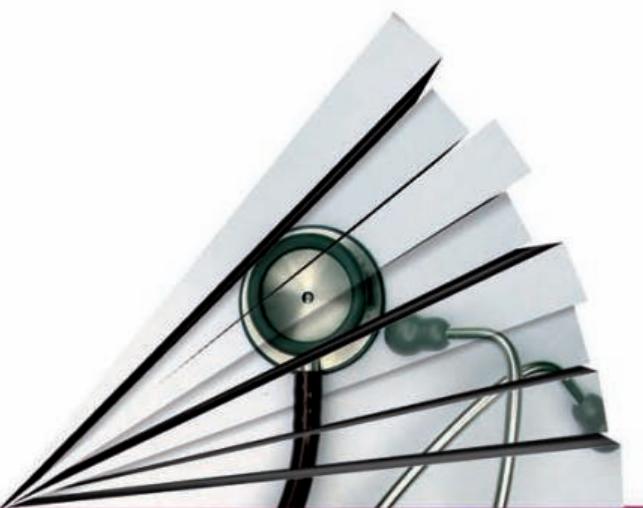
1. Layout and equipment of the Bioartificial Organ Laboratory.

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.

AREA 2: GROUPS



Cardiovascular Diseases

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

NATURAL HISTORY OF HEART DISEASE

Group Director: Dr. Francisco Fernández-Avilés Díaz

Group 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
- **Rocío Angulo Llanos:** Predoctoral
- **Ángel Arenal Maíz:** Senior researcher
- **Felipe Atienza Fernández:** Senior researcher

- **Javier Bermejo Thomas:** Senior researcher
- **Loreto Bravo Calero:** Predoctoral
- **Héctor Bueno Zamora:** Senior researcher
- **Tomas Datino Romaniega:** Postdoctoral
- **Pablo Díez Villanueva:** Predoctoral
- **Jaime Elizaga Corrales:** Postdoctoral
- **Maria Ángeles Espinosa Castro:** Predoctoral
- **Ana María Fernández Baza:** Group Management
- **Lucía Fernández Pena:** Data Management
- **M^a Eugenia Fernández Santos:** Senior researcher
- **Francisco Jesús Fernández-Avilés Díaz:** Senior researcher
- **Juan Fernández-Yáñez García-Monge:** Predoctoral
- **José Antonio García Robles:** Predoctoral
- **Ana González Mansilla:** Postdoctoral
- **Angel González Pinto:** Postdoctoral
- **Esteban González Torrecilla:** Postdoctoral
- **M^a Angeles González-Nicolás González:** Support technician
- **Enrique Gutiérrez Ibañez:** Predoctoral
- **Miriam Juárez Fernández:** Postdoctoral
- **Rosana López Jiménez:** Predoctoral
- **Maria Jose Lorenzo Hernández:** Data Management
- **Batiste Andreu Martínez Climent:** Postdoctoral
- **Manuel Martínez Selles:** Senior researcher
- **Teresa Mombiela Ramírez de Ganuza:** Rio Hortega
- **Alberto Nuñez García:** Predoctoral
- **Jesús Palomo Álvarez:** Postdoctoral
- **Esther Pérez David:** Postdoctoral
- **Candelas Pérez del Villar:** Predoctoral
- **Virginia Plasencia Martín:** Support technician
- **Raquel Prieto Arévalo:** Postdoctoral
- **Ricardo Sanz Ruiz:** Postdoctoral
- **Fernando Sarnago Cebada:** Postdoctoral
- **Javier Soriano Triguero:** Postdoctoral
- **Susana Suárez Sancho:** Predoctoral
- **María Eugenia Vázquez Álvarez:** Predoctoral
- **Alexandra Vázquez Castaño:** Data Management
- **Pilar Velasco Sevillano:** Support technician
- **Adolfo Villa Arranz:** Postdoctoral
- **Eduardo Villacorta Argüelles:** Postdoctoral

NATURAL HISTORY OF HEART DISEASE

- Raquel Yotti Álvarez: Senior researcher
- Eduardo Zataráin Nicolás: Predoctoral

Research Projects – Competitive Calls

Principal investigator: Fernández-Áviles Díaz, Francisco Jesús
Title: Proyecto europeo 7º programa marco. 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: Sánchez Fernández, Pedro Luis
Title: Decelularización de corazones humanos para el desarrollo de matrices cardiacas que sirvan como soporte a la bioingeniería de tejidos cardíacos funcionales.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Fernández-Avilés Díaz, Francisco Jesús
Title: Desarrollo de corazones y tejidos cardíacos funcionales a partir de matrices cardiacas y fuentes celulares autólogas.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Pérez David, Esther
Title: Utilidad de la fusión de angiografía y resonancia magnética y de la proteómica cardiaca para la caracterización del miocardio disfuncionante.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Yotti Álvarez, Raquel
Title: Proyecto fis 2012. Raquel Yotti Alvarez

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: Bermejo Thomas, Javier
Title: Proyecto FIS 2012. Javier Bermejo Thomas
caracterización de las propiedades diastólicas intrenseca 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: Fernández-Avilés Díaz, Francisco Jesús
Title: Red Cardiovascular. D. Francisco Fernandez-Avilés
Funding body: Instituto de Salud Carlos III
Start date: 2013
End date: 2014

Principal investigator: Fernández-Avilés Díaz, Francisco Jesús
Title: Proyecto CELLCAM. Programa I+D biomedicina com. Madrid
“Una nueva generación de medicamentos celulares más eficaces y seguros”
Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015

Principal investigator: Gómez Gaviro Mª Victoria
Title: Mesendot- regulation of mesenchimal stem cells by vasculature and enhancement of their regenerative potential for the treatment of acute myocardial infarction.
Funding body: European Commission
Start date: 2011
End date: 2013

Principal investigator: Fernández-Avilés Díaz, Francisco Jesús
Title: Proyecto europeo 7ºprograma marco. Bestageing.Biomarker research alliance for diagnosing heart disease in the ageing european population.

NATURAL HISTORY OF HEART DISEASE

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2017

Principal investigator: Fernández-Avilés Díaz, Francisco Jesús
Title: Proyecto FIS 2013. Estudio preclínico de la implantación de parches de tejido cardiaco 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: Arenal Maíz, Ángel

Title: Proyecto fis 2013. 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

Theses

| DOCTORAL STUDENT | TITLE | DIRECTOR | UNIVERSITY |
|------------------------------|---|--|-----------------------------------|
| Eduardo Villacorta Argüelles | Participación de las nanopartículas calcificantes en la etiopatogenia de la valvulopatía aórtica degenerativa | Francisco Fernández-Avilés, Pedro Luís Sánchez Fernández | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|---|---------------------------------|------|
| Steg PG; James SK; Atar D; Badano LP; Lundqvist CB; Borger MA; di Mario C; Dickstein K; Ducrocq G; Fernandez-Avilés F; Gershlick AH; Giannuzzi P; Halvorsen S; Huber K; Juni P; Kastrati A; Knuuti J; Lenzen MJ; Mahaffey KW; Valgimigli M; van't Hof A; Widimsky P; Zahger D; Bax JJ; Baumgartner H; Ceconi C; Dean V; Deaton C; Fagard R; Funck-Brentano C; Hasdai D; Hoes A; Kirchhof P; Knuuti J; Kohl P; McDonagh T; Moulin C; Popescu BA; Reiner Z; Sechtem U; Sirnes PA; Tendera M; Torbicki A; Vahanian A; Windecker S; Hasdai D; Astin F; Astrom-Olsson K; Budaj A; Clemmensen P; Collet JP; Fox KA; Fuat A; Gustiene O; Hamm CW; Kala P; Lancellotti P; Maggioni AP; Merkely B; Neumann FJ; Piepoli MF; van de Werf F; Verheugt F; Wallentin L | ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting With ST-Segment Elevation | Revista Española de Cardiología | 2 |

NATURAL HISTORY OF HEART DISEASE

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|---|---------------------------------|------|
| Bardaji A; Bodi V; Bover R; Martinez-Selles M; Sabate M; Sionis A; de Prada MV; Aros F; Arribas F; Barrabes J; de Castro OD; Heras M; Palop RL; Lopez-Sendon JL; Manito N; de Pablo MC; Ripoll T; San Roman A; de la Torre JM; Fernandez-Ortiz A; Gomez AMA; Anguita M; Cequier A; Comin J; Diaz-Buschmann I; Lozano IF; de Diego JJJ; Pan M; Worner F | Comments on the ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting With ST-Segment Elevation Spanish Society of Cardiology Working Group on the Clinical Practice Guidelines for ST-Elevation Acute Coronary Syndrome Group of Expert Reviewers for the Clinical Practice Guidelines for ST-Elevation Acute Coronary Syndrome Spanish Society of Cardiology Clinical Practice Guidelines Committee | Revista Española de Cardiología | 2 |
| Gonzalez-Vilchez F; Gomez-Bueno M; Almenar L; Crespo-Leiro MG; Arizon JM; Martinez-Selles M; Delgado J; Roig E; Lage E; Manito N | Spanish Heart Transplantation Registry. 24th Official Report of the Spanish Society of Cardiology Working Group on Heart Failure and Heart Transplantation (1984-2012) | Revista Española de Cardiología | 2 |

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|---|------------------------|------|
| Task Force Members, Montalescot G, Sechtem U, Achenbach S, Andreotti F, Arden C, Budaj A, Bugiardini R, Crea F, Cuisset T, Di Mario C, Ferreira JR, Gersh BJ, Gitt AK, Hulot JS, Marx N, Opie LH, Pfisterer M, Prescott E, Ruschitzka F, Sabaté M, Senior R, Taggart DP, van der Wall EE, Vrints CJ; ESC Committee for Practice Guidelines, 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, Knuuti J, Valgimigli M, Bueno H, Claeys MJ, Donner-Banzhoff N, Erol C, Frank H, Funck-Brentano C, Gaemperli O, Gonzalez-Juanatey JR, Hamilos M, Hasdai D, Husted S, James SK, Kervinen K, Kolh P, Kristensen SD, Lancellotti P, Maggioni AP, Piepoli MF, Pries AR, Romeo F, Rydén L, Simoons ML, Sirnes PA, Steg PG, Timmis A, Wijns W, Windecker S, Yildirim A, Zamorano JL. | 2013 ESC guidelines on the management of stable coronary artery disease: the Task Force on the management of stable coronary artery disease of the European Society of Cardiology | European Heart Journal | 2 |

NATURAL HISTORY OF HEART DISEASE

| AUTHORS | TITLE | PUBLICATION | AREA |
|---|---|------------------------|------|
| Authors/Task Force Members, Rydén L, Grant PJ, Anker SD, Berne C, Cosentino F, Danchin N, Deaton C, Escaned J, Hammes HP, Huikuri H, Marre M, Marx N, Mellbin L, Ostergren J, Patrono C, Seferovic P, Uva MS, Taskinen MR, Tendera M, Tuomilehto J, Valensi P, Zamorano JL; ESC Committee for Practice Guidelines (CPG), 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, De Backer G, Sirnes PA, Ezquerra EA, Avogaro A, Badimon L, Baranova E, Baumgartner H, Betteridge J, Ceriello A, Fagard R, Funck-Brentano C, Gulba DC, Hasdai D, Hoes AW, Kjekshus JK, Knuuti J, Kolh P, Lev E, Mueller C, Neyses L, Nilsson PM, Perk J, Ponikowski P, Reiner Z, Sattar N, Schächinger V, Scheen A, Schirmer H, Strömbärg A, Sudzhaeva S, Tamargo JL, Viigimaa M, Vlachopoulos C, Xuereb RG. | ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD: the Task Force on diabetes, pre-diabetes, and cardiovascular diseases of the European Society of Cardiology (ESC) and developed in collaboration with the European Association for the Study of Diabetes (EASD) | European Heart Journal | 2 |

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|---|------------------------|------|
| Brignole M, Auricchio A, Baron-Esquivias G, Bordachar P, Boriani G, Breithardt OA, Cleland J, Deharo JC, Delgado V, Elliott PM, Gorenek B, Israel CW, Leclercq C, Linde C, Mont L, Padeletti L, Sutton R, Vardas PE; ESC Committee for Practice Guidelines (CPG), 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, Kolh P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S; Document Reviewers, Kirchhof P, Blomstrom-Lundqvist C, Badano LP, Aliyev F, Bänsch D, Baumgartner H, Bsata W, Buser P, Charron P, Daubert JC, Dobreanu D, Faerstrand S, Hasdai D, Hoes AW, Le Heuzey JY, Mavrikis H, McDonagh T, Merino JL, Nawar MM, Nielsen JC, Pieske B, Poposka L, Ruschitzka F, Tendera M, Van Gelder IC, Wilson CM. | 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy: the Task Force on cardiac pacing and resynchronization therapy of the European Society of Cardiology (ESC). Developed in collaboration with the European Heart Rhythm Association (EHRA) | European Heart Journal | 2 |

NATURAL HISTORY OF HEART DISEASE

| AUTHORS | TITLE | PUBLICATION | AREA |
|---|---|------------------------|------|
| Mancia G, Fagard R, Narkiewicz K, Redon J, Zanchetti A, Böhm M, Christiaens T, Cifkova R, De Backer G, Dominicnak A, Galderisi M, Grobbee DE, Jaarsma T, Kirchhof P, Kjeldsen SE, Laurent S, Manolis AJ, Nilsson PM, Ruilope LM, Schmieder RE, Sirnes PA, Sleight P, Viigimaa M, Waeber B, Zannad F, Redon J, Dominicnak A, Narkiewicz K, Nilsson PM, Burnier M, Viigimaa M, Ambrosioni E, Caulfield M, Coca A, Olsen MH, Schmieder RE, Tsiofis C, van de Borne P, 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, Knuti J, Kohl P, Lancellotti P, Linhart A, Nihoyannopoulos P, Piepoli MF, Ponikowski P, Sirnes PA, Tamargo JL, Tendera M, Torbicki A, Wijns W, Windecker S, Clement DL, Coca A, Gillebert TC, Tendera M, Rosei EA, Ambrosioni E, Anker SD, Bauersachs J, Hitij JB, Caulfield M, De Buyzere M, De Geest S, Derumeaux GA, Erdine S, Farsang C, Funck-Brentano C, Gerc V, Germano G, Gielen S, Haller H, Hoes AW, Jordan J, Kahan T, Komajda M, Lovic D, Mahrholdt H, | 2013 ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC) | European Heart Journal | 2 |

| AUTHORS | TITLE | PUBLICATION | AREA |
|--|-------|-------------|------|
| Olsen MH, Ostergren J, Parati G, Perk J, Polonia J, Popescu BA, Reiner Z, Rydén L, Sirek Y, Stanton A, Struijker-Boudier H, Tsiofis C, van de Borne P, Vlachopoulos C, Volpe M, Wood DA. | | | |

Patents

Título: Método para visualizar la información contenida en imágenes tridimensionales del corazón

Referencia: P201000363, PCT/ES2011/000069

Titular: FIBHGM - UPM

Inventores: 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.

Publications

Total impact factor: 264.6

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

- Ledesma J; Bouza E; Gonzalez-Nicolas MA; de Viedma DG; Rodriguez-Sanchez B; Munoz P. BK polyomavirus genotyping at inter- and intra-patient level in Spain. JOURNAL OF MEDICAL VIROLOGY. 2013; 85(8) 1402-1408. IF: 2.217. Quartile: 3.
- Gasparini M; Proclemer A; Klersy C; Kloppe A; Lunati M; Ferrer JBM; Hersi A; Gulaj M; Wijfels MCEF; Santi E; Manotta L; Arenal A. Effect of Long-Detection Interval vs Standard-Detection Interval for Implantable Cardioverter-Defibrillators on Antitachycardia Pacing and Shock Delivery The ADVANCE III Randomized Clinical Trial. JAMA-JOURNAL

NATURAL HISTORY OF HEART DISEASE

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| | Number of documents | IF |
|------------------------------|---------------------|-------|
| Own publications | 17 | 103.8 |
| Joint publications | 28 | 160.8 |
| First-decile publications | 12 | 149.5 |
| First-quartile publications | 25 | 212.0 |
| Second-quartile publications | 14 | 44.2 |
| Third-quartile publications | 3 | 5.8 |
| Fourth-quartile publications | 3 | 2.7 |
| Nonindexed publications | 0 | - |
| Total publications | 45 | 264.6 |

CARDIAC CELLULAR ELECTROPHYSIOLOGY

Group Director: Dr. Eva Delpón Mosquera

Group 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: Identification of molecular determinants of drug blocking of cardiac channels.
- L6. Molecular determinants of block of inwardly rectifying K channels (Kir).

L7. Molecular determinants of voltage-dependent channel block.

L8. Modulation by endogenous mediators (eg, cannabinoids, nitric oxide) and miRNAs of human cardiac ion channel activity.

Group members

- Irene Amorós García: Predoctoral
- Ricardo Caballero Collado: Senior researcher
- Eva Delpón Mosquera: Group director
- Pablo Dolz Gaitón: FPI
- Marcos Matamoros Campos: FPI
- Mercedes Núñez Lozano: Postdoctoral ISCIII

Theses

| Doctoral student | Title | Director | University |
|-----------------------------|--|---|-----------------------------------|
| Irene Amorós García | Modulación de los canales Kv4.3 cardiacos humanos por endocannabinoides y ácidos grasos | Eva Delpón, Juan Tamargo, Ricardo Caballero | Universidad Complutense de Madrid |
| Marta González de la Fuente | Comparación de las corrientes iónicas implicadas en la repolarización de las aurículas derecha e izquierda humanas en pacientes en ritmo sinusal y con fibrilación auricular | Eva Delpón, Juan Tamargo, Ricardo Caballero | Universidad Complutense de Madrid |

CARDIAC CELLULAR ELECTROPHYSIOLOGY

| Publications | Total Impact Factor: 18.9 |
|--------------|---------------------------|
|--------------|---------------------------|

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

- Amoros I; Dolz-Gaiton P; Gomez R; Matamoros M; Barana A; de la Fuente MG; Nunez M; Perez-Hernandez M; Moraleda I; Galvez E; Iriepa I; Tamargo J; Caballero R; Delpon E. Propafenone blocks human cardiac Kir2.x channels by decreasing the negative electrostatic charge in the cytoplasmic pore. *BIOCHEMICAL PHARMACOLOGY*. 2013; 86(2) 267-278. IF: 4.65. Quartile: 1.
- Nunez L; Barana A; Amoros I; de la Fuente MG; Dolz-Gaiton P; Gomez R; Rodriguez-Garcia I; Mosquera I; Monserrat L; Delpon E; Caballero R; Castro-Beiras A; Tamargo J. p.D1690N Nav1.5 rescues p.G1748D mutation gating defects in a compound heterozygous Brugada syndrome patient. *HEART RHYTHM*. 2013; 10(2) 264-272. IF: 4.918. Quartile: 1.
- de la Fuente MG; Barana A; Gomez R; Amoros I; Dolz-Gaiton P; Sacristan S; Atienza F; Pita A; Pinto A; Fernandez-Aviles F; Caballero R; Tamargo J. Chronic atrial fibrillation up-regulates 1-Adrenoceptors affecting repolarizing currents and action potential duration. *CARDIOVASCULAR RESEARCH*. 2013; 97(2) 379-388. IF: 5.808. Quartile: 1.
- Dolz-Gaiton P; Nunez M; Nunez L; Barana A; Amoros I; Matamoros M; Perez-Hernandez M; de la Fuente MG; Alvarez-Lopez M; Macias-Ruiz R; Tercedor-Sanchez L; Jimenez-Jaimez J; Delpon E. Functional Characterization of a Novel Frameshift Mutation in the C-terminus of the Nav1.5 Channel Underlying a Brugada Syndrome with Variable Expression in a Spanish Family. *PLOS ONE*. 2013; 8(11). IF: 3.534. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 4 | 18.9 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 1 | 4.7 |
| First-quartile publications | 4 | 18.9 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 18.9 |

CARDIOVASCULAR PATHOPHYSIOLOGY

Group Director: Dr. Victoria Cachofeiro Ramos

Group 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 Institute. The fruits of this cooperation can be seen in the numerous publications in prestigious journals both within and outside the field of cardiovascular disease, for example, 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 RIC of the ISCIII since 2006.

Group members

- **Belén Bausá Miranda:** Predoctoral
- **María Visitación Bartolomé Pascual:** Postdoctoral
- **Victoria Cachofeiro Ramos:** Group director
- **Raquel Jurado López:** Support technician
- **Ernesto Martínez Martínez:** Predoctoral
- **María Miana Ortega:** Postdoctoral

Theses

| Doctoral student | Title | Director | University |
|---------------------------|--|--|-----------------------------------|
| Ernesto Martínez Martínez | Papel de la leptina sobre las alteraciones cardiovasculares asociadas a la obesidad: Mecanismos implicados | Victoria Cachofeiro, María Miana, María Luaces | Universidad Complutense de Madrid |
| Ana Torres do Rego | Efectos del consumo de bebidas alcohólicas en la trigliceridemia diurna en población general y de los marcadores de inflamación y de oxidación en población joven sana | Luis Álvarez Sala, Victoria Cachofeiro, Jesús Millán | Universidad Complutense de Madrid |

Publications

Total Impact Factor:42.1

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

- Stefanon I; Valero-Munoz M; Fernandes AA; Ribeiro RF; Rodriguez C; Miana M; Martinez-Gonzalez J; Spalenza JS; Lahera V; Vassallo PF; Cachofeiro V. Left and Right Ventricle Late Remodeling Following Myocardial Infarction in Rats. PLOS ONE. 2013; 8(5). IF: 3.534. Quartile: 1.

CARDIOVASCULAR PATHOPHYSIOLOGY

- Juarez GF; Luno J; Barrio V; de Vinuesa SG; Praga M; Goicoechea M; Cachofeiro V; Nieto J; Vega FF; Tato A; Gutierrez E. Effect of Dual Blockade of the Renin-Angiotensin System on the Progression of Type 2 Diabetic Nephropathy: A Randomized Trial. *AMERICAN JOURNAL OF KIDNEY DISEASES*. 2013; 61(2) 211-218. IF: 5.756. Quartile: 1.
- do Rego AT; Klop B; Birnie E; Elte JWF; Ramos VC; Walther LAAS; Cabezas MC. Diurnal Triglyceridemia in Relation to Alcohol Intake in Men. *NUTRIENTS*. 2013; 5(12) 5114-5126. IF: 3.148. Quartile: 2.
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- Aguado A; Galan M; Zhenyukh O; Wiggers GA; Roque FR; Redondo S; Pecanha F; Martin A; Fortuno A; Cachofeiro V; Tejerina T; Salaices M; Briones AM. Mercury induces proliferation and reduces cell size in vascular smooth muscle cells through MAPK, oxidative stress and cyclooxygenase-2 pathways. *TOXICOLOGY AND APPLIED PHARMACOLOGY*. 2013; 268(2) 188-200. IF: 3.63. Quartile: 1.
- Martinez-Martinez E; Miana M; Jurado-Lopez R; Rousseau E; Rossignol P; Zannad F; Cachofeiro V; Lopez-Andres N. A Role for Soluble ST2 in Vascular Remodeling Associated with Obesity in Rats. *PLOS ONE*. 2013; 8(11). IF: 3.534. Quartile: 1.
- Valero-Munoz M; Martin-Fernandez B; Ballesteros S; Martinez-Martinez E; Blanco-Rivero J; Balfagon G; Cachofeiro V; Lahera V; de las Heras N. Relevance of vascular peroxisome proliferator-activated receptor coactivator-1 to molecular alterations in atherosclerosis. *EXPERIMENTAL PHYSIOLOGY*. 2013; 98(5) 999-1008. IF: 2.871. Quartile: 2.
- Fernandez-Juarez G; Luno J; Barrio V; de Vinuesa SG; Praga M; Goicoechea M; Lahera V; Casas L; Oliva J. 25 (OH) Vitamin D Levels and Renal Disease Progression in Patients with Type 2 Diabetic Nephropathy and Blockade of the Renin-Angiotensin System. *CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*. 2013; 8(11) 1870-1876. IF: 5.25. Quartile: 1.
- de las Heras N; Valero-Munoz M; Ballesteros S; Gomez-Hernandez A; Martin-Fernandez B; Blanco-Rivero J; Cachofeiro V; Benito M; Balfagon G; Lahera V. Factors involved in rosuvastatin induction of insulin sensitization in rats fed a high fat diet. *NUTRITION METABOLISM AND CARDIOVASCULAR DISEASES*. 2013; 23(11) 1107-1114. IF: 3.875. Quartile: 1.
- Roque FR; Briones AM; Garcia-Redondo AB; Galan M; Martinez-Revelles S; Avendano MS; Cachofeiro V; Fernandes T; Vassallo DV; Oliveira EM; Salaices M. Aerobic exercise reduces oxidative stress and improves vascular changes of small mesenteric and coronary arteries in hypertension. *BRITISH JOURNAL OF PHARMACOLOGY*. 2013; 168(3) 686-703. IF: 4.99. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 4 | 13.8 |
| Joint publications | 6 | 28.3 |
| First-decile publications | 3 | 16.0 |
| First-quartile publications | 8 | 36.1 |
| Second-quartile publications | 2 | 6.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 10 | 42.1 |

CARDIOLOGY AND HEART TRANSPLANT IN CHILDREN

Group Director: Dr. Constancio Medrano López

Group type: Emerging

Research programs

- P1. Heart transplant in children.
- P2. Myocardiopathy 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.

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.

The most important research lines of this group include the respiratory infection line and respiratory syncytial virus and the continuation of the CIVIC study with the CIVIC5 study and Risk21, which will be developed during the next 2 years. They also include the line of echocardiography using specialized techniques (Speckle Tracking, 3D) in myocardiopathy, 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 on 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 oncohematology, and infant heart surgery, as well as with the cell regeneration laboratory.



Group members

- **Teresa Álvarez Martín:** Predoctoral
- **Olga Arroyo Riaño:** Predoctoral
- **Fernando Ballesteros Tejerizo:** Predoctoral
- **Manuela Camino López:** Predoctoral
- **Mirian Centeno Jiménez:** Predoctoral
- **Susana Cobos Hinojal:** Postdoctoral
- **Nuria Gil Villanueva:** Predoctoral
- **Enrique Maroto Álvaro:** Postdoctoral
- **Constancio Medrano López:** Senior researcher
- **Gloria Isabel Pinero Díaz:** Postdoctoral
- **Cristina Relaño García:** Postdoctoral
- **Alejandro Rodríguez Ogando:** Predoctoral
- **María Carmen Vázquez Álvarez:** RETIC
- **Samantha Wilkinson:** Support technician
- **José Luis Zunzúñegui Martínez:** Predoctoral

CARDIOLOGY AND HEART TRANSPLANT IN CHILDREN

Research Projects – Competitive Calls

Principal investigator: Enrique Maroto Álvaro

Title: Ensayo clínico de factibilidad y seguridad de la inyección intramiocárdica de células madre autólogas procedentes de médula ósea en niños con síndrome de ventrículo izquierdo hipoplástico. Estudio TABH.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2012

End date: 2013

Principal investigator: Constancio Medrano López

Title: Sildenafil en el postoperatorio de cirugía cardíaca en niños: estudio Ivory.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2015

Principal investigator: Enrique Maroto Álvaro

Title: Red cardiovascular.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

Publications

Total Impact Factor: 37.2

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

- Perez B; Gutierrez-Solana LG; Verdu A; Merinero B; Yuste-Checa P; Ruiz-Sala P; Calvo R; Jalan A; Marin LL; Campos O; Ruiz MA; San Miguel M; Vazquez M; Castro M; Ferrer I; Navarrete R; Desviat LR; Lapunzina P; Ugarte M; Perez-Cerda C. Clinical, biochemical, and molecular studies in pyridoxine-dependent epilepsy. Antisense therapy as possible new therapeutic option. *EPILEPSIA*. 2013; 54(2) 239-248. IF: 4.584. Quartile: 1.

- Almenar L; Zunzunegui JL; Baron G; Carrasco JI; Gomez-Doblas JJ; Comin J; Barrios V; Subirana MT; Diaz-Molina B. Update on Heart Failure, Heart Transplant, Congenital Heart Disease, and Clinical Cardiology. *REVISTA ESPANOLA DE CARDIOLOGIA*. 2013; 66(4) 290-297. IF: 3.342. Quartile: 2.

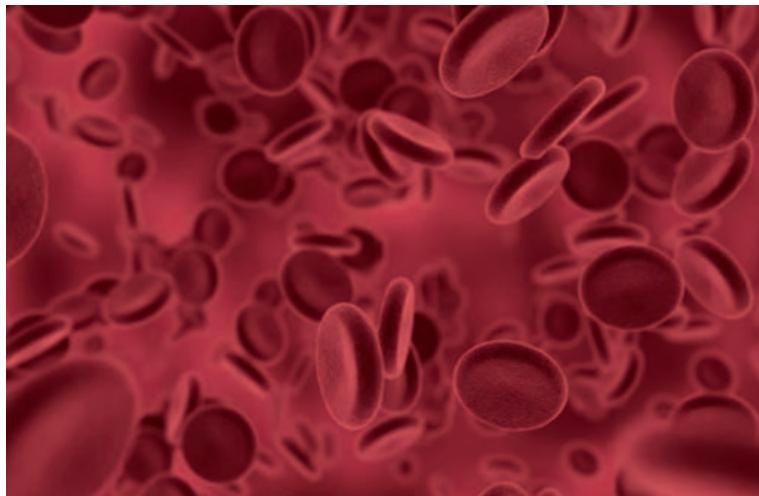
- Luxan G; Casanova JC; Martinez-Poveda B; Prados B; D'Amato G; MacGrogan D; Gonzalez-Rajal A; Dobarro D; Torroja C; Martinez F; Izquierdo-Garcia JL; Fernandez-Friera L; Sabater-Molina M; Kong YY; Pizarro G; Ibanez B; Medrano C; Garcia-Pavia P; Gimeno JR; M. Mutations in the NOTCH pathway regulator MIB1 cause left ventricular noncompaction cardiomyopathy. *NATURE MEDICINE*. 2013; 19(2) 193-201. IF: 28.054. Quartile: 1.

- Roldan-Martin MB; Rodriguez-Ogando A; Sanchez-Galindo AC; Parente-Hernandez A; Luengo-Herrero V; Sanchez-Sanchez C. Rare presentation of shock and acute mesenteric ischaemia secondary to acute adrenal insufficiency in an 11-year-old male. *JOURNAL OF PAEDIATRICS AND CHILD HEALTH*. 2013; 49(6) 498-500. IF: 1.193. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 0 | 0.0 |
| Joint publications | 4 | 37.2 |
| First-decile publications | 1 | 28.1 |
| First-quartile publications | 2 | 32.6 |
| Second-quartile publications | 1 | 3.3 |
| Third-quartile publications | 1 | 1.2 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 37.2 |

BLOOD LIPIDS AND CARDIOVASCULAR RISK

Group Director: Dr. Luis Antonio Álvarez-Sala Walther
Group 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
- **Jorge del Toro Cervera:** Predoctoral
- **Jesús Millán Núñez-Cortés:** Principal investigator
- **Carlos Pérez de Oteyza:** Postdoctoral
- **Gloria Pérez Rus:** Predoctoral
- **Carlos Recarte García-Andrade:** Predoctoral
- **Francisco Javier Rodríguez Rodríguez:** Postdoctoral

- **Ana Torres do Rego:** Postdoctoral
- **Inés Valdés Gross:** Data management

Theses

| Doctoral student | Title | Director | University |
|--------------------|--|--|-----------------------------------|
| Ana Torres do Rego | Efectos del consumo de bebidas alcohólicas en la trigliceridemia diurna en población general y de los marcadores de inflamación y de oxidación en población joven sana | Luis Álvarez sala, Victoria cachofeiro, Jesús Millán | Universidad Complutense de Madrid |

Publications

Total Impact Factor: 19.1

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

- Fuentes DS; Fernandez CS; Dalmau FGB; Prieto JMM; Gutierrez PC; Cuende JI. What was new about vascular risk in the year 2012?. REVISTA CLINICA ESPANOLA. 2013; 213(9) 442-452. IF: 1.314. Quartile: 3.
- de Miguel-Yanes JM; Porneala B; Pencina MJ; Fox CS; Florez JC; Siscovick DS; Dupuis J; Meigs JB. Lack of interaction of beta-cell-function-associated variants with hypertension on change in fasting glucose and diabetes risk: the Framingham Offspring Study. JOURNAL OF HYPERTENSION. 2013; 31(5) 1001-1009. IF: 4.222. Quartile: 1.
- Irun P; Mallen M; Dominguez C; Rodriguez-Sureda V; Alvarez-Sala LA; Arslan N; Bermejo N; Guerrero C; de Soto IP; Villalon L; Giraldo P; Pocovi M. Identification of seven novel SMPD1 mutations causing Niemann-Pick disease types A and B. CLINICAL GENETICS. 2013; 84(4) 356-361. IF: 3.652. Quartile: 2.

BLOOD LIPIDS AND CARDIOVASCULAR RISK

- Kooiman J; Den Exter PL; Cannegieter SC; Le Cessie S; Del Toro J; Sahuquillo JC; Pedrajas JM; Huisman MV. Impact of chronic kidney disease on the risk of clinical outcomes in patients with cancer-associated venous thromboembolism during anticoagulant treatment. *JOURNAL OF THROMBOSIS AND HAEMOSTASIS*. 2013; 11(11) 1968-1976. IF: 5.55. Quartile: 1.
- do Rego AT; Klop B; Birnie E; Elte JWF; Ramos VC; Walther LAAS; Cabezas MC. Diurnal Triglyceridemia in Relation to Alcohol Intake in Men. *NUTRIENTS*. 2013; 5(12) 5114-5126. IF: 3.148. Quartile: 2.
- Millan J; Alegria E; Guijarro C; Lozano JV; Vitale GC; Gonzalez-Timon B; Gonzalez-Juanatey JR. Dyslipidemia in diabetics treated with statins. Results of the Dyslipidemia International Study in Spain. *MEDICINA CLINICA*. 2013; 141(10) 430-436. IF: 1.252. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 3 | 8.6 |
| Joint publications | 3 | 10.5 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 2 | 9.8 |
| Second-quartile publications | 2 | 6.8 |
| Third-quartile publications | 2 | 2.6 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 6 | 19.1 |

ACUTE CEREBRAL ISCHEMIA. STROKE

Group Director: Dr. Antonio Gil Núñez

Group 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: 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, including 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, 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 has led the group to form part of liSGM, 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:** Senior researcher
- **M^a Paz Martín Torres:** Data management
- **Pilar Vázquez Alén:** Predoctoral
- **José Antonio Villanueva Osorio:** Predoctoral
- **José Shane Villanueva Miyamura:** Data management

ACUTE CEREBRAL ISCHEMIA. STROKE

Research Projects – Competitive Calls

Principal investigator: Antonio Gil Núñez
Title: ENOS: Eficacia del óxido nítrico en el ictus.
Funding body: Universidad de Nottingham (Dr. Philip Bath)
Start date: 2008
End date: 2013

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|---|-------------|
| Rodríguez-Yanez M; Castellanos M; Freijo MM; Fernandez JCL; Martí-Fabregas J; Nombeta F; Simal P; Castillo J; Fuentes B; De Lecinana MA; Alvarez-Sabin J; Arenillas J; Calleja S; Casado I; Dávalos A; Diaz-Otero F; Egido JA; Gallego J; Pastor AG; Gil-Núñez A; Gilo F; Irimia P; Lago A; Maestre J; Masjuan J; Martínez-Sánchez P; Martínez-Vila E; Molina C; Morales A; Purroy F; Ribo M; Roquer J; Rubio F; Segura T; Serena J; Tejada J; Vivancoso J | Clinical practice guidelines in intracerebral haemorrhage | NEUROLOGÍA |
| de Lecinana MA; Diaz-Guzman J; Egido JA; Pastor AG; Martinez-Sánchez P; Vivancos J; Diez-Tejedor E | Endovascular treatment in acute ischaemic stroke. A Stroke Care Plan for the Region of Madrid | NEUROLOGÍA |
| Royo-Bordonada MA, Lobos Bejarano JM, Villar Alvarez F, Sans S, Pérez A, Pedro-Botet J, Moreno Carrioles RM, Maiques A, Lizcano A, Lizarbe V, Gil Núñez A, Fornés Ubeda F, Elosua R, de Santiago Nocito A, de Pablo Zarzosa C, de Álvaro Moreno F, Cortés O, Cordero A, Camafont Babkowski M, Brotons Cuixart C, Armarrio P; en nombre del Comité Español Interdisciplinario para la Prevención Cardiovascular (CEIPC). | Statement of the Spanish Interdisciplinary Cardiovascular Prevention Committee (CEIPC for its Spanish acronym) on the 2012 European Cardiovascular Prevention Guidelines. | NEUROLOGÍA |

Publications

Total impact factor: 12.3

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

- Brotons C; Lobos JM; Royo-Bordonada MA; Maiques A; de Santiago A; Castellanos A; Diaz S; Obaya JC; Pedro-Botet J; Moral I; Lizarbe V; Moreno R; Perez A; Cordero A; Fornes-Ubeda F; Serrano-Saiz B; Camafont-Babkowski M; Elosua R; Sans S; de Pablo C; Gil-Nun. Implementation of Spanish adaptation of the European guidelines on cardiovascular disease prevention in primary care. BMC FAMILY PRACTICE. 2013; 14(36). IF: 1.735. Quartile: 2.
- Garcia-Pastor A. Knowledge of vascular status for therapeutic decision-making in acute ischemic stroke: which is the role of neurosonology?. Revista De Neurologia. 2013; 56(1) 35-42. IF: 0.926. Quartile: 4.
- de Lecinana MA; Diaz-Guzman J; Egido JA; Pastor AG; Martinez-Sánchez P; Vivancos J; Diez-Tejedor E. Endovascular treatment in acute ischaemic stroke. A Stroke Care Plan for the Region of Madrid. NEUROLOGIA. 2013; 28(7) 425-434. IF: 1.352. Quartile: 4.
- Rodriguez-Yanez M; Castellanos M; Freijo MM; Fernandez JCL; Martí-Fabregas J; Nombeta F; Simal P; Castillo J; Fuentes B; De Lecinana MA; Alvarez-Sabin J; Arenillas J; Calleja S; Casado I; Dávalos A; Diaz-Otero F; Egido JA; Gallego J; Pastor AG; Clinical practice guidelines in intracerebral haemorrhage. NEUROLOGIA. 2013; 28(4) 236-249. IF: 1.352. Quartile: 4.
- Garcia PS; Pastor AG; Arratibel AG; Peracho GV; Cruz PMR; Sanchez JRP; Otero FD; Alen PV; Osorio JAV; Nunez AG. Aetiological classification of ischaemic strokes: comparison of the new A-S-C-O classification and the classification by the Spanish Society of Neurology's Cerebrovascular Disease Study Group. NEUROLOGIA. 2013; 28(7) 417-424. IF: 1.352. Quartile: 4.
- Purroy F; Caballero PEJ; Gorospe A; Torres MJ; Alvarez-Sabin J; Santamarina E; Martinez-Sánchez P; Canovas D; Freijo MJ; Egido JA; Ramirez-Moreno JM; Alonso-Arias A; Rodriguez-Campello A; Casado I; Delgado-Mederos R; Martí-Fabregas J; Fuentes B; Silva Y;

ACUTE CEREBRAL ISCHEMIA. STROKE

Recurrent transient ischaemic attack and early risk of stroke: data from the PROMAPA study. JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY. 2013; 84(6) 596-603. IF: 5.58. Quartile: 1.

Publications in nonindexed journals in the Journal Citation Reports

- Royo-Bordonada MA; Lobos Bejarano JM; Villar Alvarez F; Sans S; Pérez A; Pedro-Botet J; Moreno Carriles RM; Maiques A; Lizcano A; Lizarbe V; Gil Núñez A; Fornés Ubeda F; Elosua R; de Santiago Nocito A; de Pablo Zarzosa C; de Álvaro Moreno F; Cortés O; Cor. Statement of the Spanish Interdisciplinary Cardiovascular Prevention Committee (CEIPC) on the 2012 European Cardiovascular Prevention Guidelines. Rev Esp Salud Publica. 2013; 87(2): 103-20.
- Royo-Bordonada MA; Lobos Bejarano JM; Villar Alvarez F; Sans S; Pérez A; Pedro-Botet J; Moreno Carriles RM; Maiques A; Lizcano A; Lizarbe V; Gil Núñez A; Fornés Ubeda F; Elosua R; de Santiago Nocito A; de Pablo Zarzosa C; de Álvaro Moreno F; Cortés O; Cor. Statement of the Spanish Interdisciplinary Cardiovascular Prevention Committee (CEIPC for its Spanish acronym) on the 2012 European Cardiovascular Prevention Guidelines. Clin Investig Arterioscler. 2013; 25(3): 127-39.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 2 | 2.3 |
| Joint publications | 4 | 10.0 |
| First-decile publications | 1 | 5.6 |
| First-quartile publications | 1 | 5.6 |
| Second-quartile publications | 1 | 1.7 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 4 | 5.0 |
| Nonindexed publications | 2 | - |
| Total publications | 8 | 12.3 |



AREA 3

Neuroscience and Mental Health

Area Coordinator:
Celso Arango López

One of the main research lines in the area of neuroscience is the study of the etiopathogenesis 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 associated with environmental and genetic risk factors, functional and structural imaging studies, and intermediate mechanisms such as the search for endophenotypes and neurologic bases of neuropsychology. The relevance of the work carried out resides in the group's ability to perform longitudinal studies of unusual types of patient, such as those with early-onset first psychotic episodes 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 psychotic episodes 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 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 AXES AND LINES

Strategic axes

A1: Consolidation of research networks and alliances in neuroscience.

A2: Consolidation of research lines in neuroscience.

A3: Consolidation of the teaching plan in neuroscience.

A4: Consolidation of infrastructure.

Strategic lines

Axis 1: Consolidation of research networks and alliances in neuroscience.

1. Consolidate 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 Universidad Complutense de Madrid and clinical practice at Hospital General Universitario Gregorio Marañón 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.

RESEARCH AXES AND LINES

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 Institute and pharmaceutical companies.
- Collaborate with potentially synergistic groups (medical imaging, engineering, Instituto Ramón y Cajal).

3. Extension of added sources of financing: autonomous, national, and international.

Strategic objectives:

- Participate in calls for consolidated groups within the Comunidad de Madrid.
- Participate in European calls within the 7th Framework Programme.
- Consolidate of emerging researchers with their own funding lines: promotion of participation in public and private calls.

4. Increase in scientific production 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 quality of services and evaluation of programs.
- Develop and validate specific instruments for evaluation and neuroimaging techniques for diagnosis and follow-up of disease.

5. Increase in scientific output in basic research.

Strategic objectives:

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

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

Strategic objectives:

- Continue and finish current studies.
- Lead and develop new collaborative studies.

RESEARCH AXES AND LINES

Strategic lines

-Promote collaboration with specific national and international consortia in this field of research in schizophrenia.

7. Complete lines in progress in the ALS-Neuromuscular Unit and increase multicenter collaboration for the study of this disease (included within “Rare Diseases”), as a group that is linked to Centro de Investigación en Red Enfermedades Neurodegenerativas (CIBERNED [Networked Center for Biomedical Research in Neurodegenerative Disease]).

Strategic objectives:

- Use 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 training program for neuroscience.

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

Strategic objectives:

- Obtain certification of courses by the Continuous Training Agency.
- 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 teaching capacity: 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.

AREA 3: GROUPS



Neuroscience and Mental Health

- Psychological and neurobiological basis of mental disorders. Neurodevelopmental disorders
- Parkinson disease and movement disorders
- Clinical and etiopathogenic aspects of neuromuscular diseases
- Neuroimmunology
- Clinical neurology
- Biology of inflammation

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

Group Director: Dr. Celso Arango López

Group type: Consolidated

Research programs and lines

P1. Schizophrenia and other psychotic disorders.

- L1. First psychotic episodes.
- 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.

This group, which is specialized in the study of the neurobiological and psychological basis of mental and neurodevelopmental disorders is part of the Department of Psychiatry of HGUGM. The group's main research lines cover schizophrenia and other psychotic disorders, as well as neurodevelopmental disorders, and the staff comprise clinicians who participate in research, contracted staff, and trainees dedicated exclusively to research. The group has also designed, coordinated, and implemented different regional, national, and international studies and research programs, as seen in the group's activity and annual reports (www.hggm.es/ua and www.cibersam.es).

This group is one of the few to gain international recognition in the field of schizophrenia and early onset psychosis. The Unit's research activity has been prolific in collaboration with national and international centers, as reflected in externally evaluated projects financed by competitive public funds and private funds, incorporation of contracted

researchers and research trainees, publications, and collaborations, as well as in the introduction of several research lines with other hospital departments (biochemistry, medical imaging, experimental medicine, cardiology, genetics, and nutrition).

The research team also has broad experience in training in research through a systematic training plan with regular quality checks as part of the EFQM quality assurance program implemented in the Unit.

The experience and the capacity for coordination of the Child and Adolescent Psychiatry Service is clearly reflected in the choice of its Principal Investigator as the Scientific Director of CIBERSAM.

The group currently participates in 6 active research programs financed within the EU's Seventh Framework Program, as well as in the IMI call. It has published a large number of articles on psychosis and etiopathophysiology in high-impact journals. Similarly, the Integrated Medical Care Program for Autism Spectrum Disorders is the first of its kind to provide specific care to patients with these diseases and a reference for the Comunidad de Madrid.



PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

Group members

- María Álvarez Blázquez: CIBER
- Celso Arango López: Senior researcher
- Leticia Boada Muñoz: Predoctoral
- Ana Belén Calvo Calvo: Predoctoral
- Lourdes Cerezo Román: Predoctoral
- Guadalupe Chiclana Actis: Predoctoral
- Javier Conejo Galindo: Predoctoral
- Azucena Corral Zarapuz: Management
- Sabrina Cruz Romaguera: Predoctoral
- Pedro Cuadrado Calleja: Postdoctoral
- Enrique de Portugal Fernández del Rivero: Postdoctoral
- Angel Luis del Rey Mejías: Predoctoral
- Carlos Delgado Lacosta: Predoctoral
- Eva María Díaz Mesa: Predoctoral
- María Luisa Dorado Martínez: Predoctoral
- Álvaro Esguevillas Cuesta: Predoctoral
- Ana Espliego Felipe: Predoctoral
- Joana Fernández Miró: Predoctoral
- David Fraguas Herráez: Predoctoral
- Leticia García Álvarez: Postdoctoral
- Enrique García Bernardo: Predoctoral
- Ainhoa Garibi Pérez: Predoctoral
- Santiago Gil Molina: Predoctoral
- Miguel Ángel González Barcenilla: Support technician
- Emiliiano González Vioque: Postdoctoral
- Oihana Guridi Garitaonandia: Predoctoral
- Joost Janssen Jeucken: Ramón y Cajal
- Estela Jiménez López: Predoctoral
- Lara Kehrmann Irisarri: Predoctoral
- Cloe Llorente Sarabia: Predoctoral
- Paula López González: Management
- Gonzalo López Montoya: Postdoctoral
- María Jesús Maldonado Belmonte: Predoctoral
- María Covadonga Martínez Díaz-Caneja: Rio Hortega
- María Mayoral Aragón: Postdoctoral
- Jessica Merchán Naranjo: CIBER
- Susana Merchán Ribera: Support technician
- María Goretti Monzón Nozaleda: Post-MIR FIBHGM

- M^a Dolores Moreno Pardillo: Postdoctoral
- Carmen Moreno Ruiz: Postdoctoral
- Estrella Munilla Suárez: Predoctoral
- María Soledad Olmeda García: Postdoctoral
- M^a José Parellada Redondo: Intensified
- María José Penzol Alonso: Predoctoral
- Laura Pina Camacho: Rio Hortega
- María Pouso Ríos: Predoctoral
- María José Ramos Rodríguez: Predoctoral
- Marta Rapado Castro: Sara Borrell
- Eva Rivas Cambronero: Predoctoral
- Pamela Rodríguez Latorre: CIBER
- Jose Juan Rodríguez Solano: Postdoctoral
- Elisa Rodríguez Toscano: PFIS
- Laura Roldán Díaz: Predoctoral
- José Romo Villa: Predoctoral
- Enrique Sainz Cortón: Postdoctoral
- Emilio Ignacio Sánchez Díaz: Predoctoral
- Teresa Sanchez Gutiérrez: PFIS
- Petra Sánchez Mascaraque: Predoctoral
- Elena Serrano Drozdowskyj: Postdoctoral
- Cecilia Tapia Casellas: CIBER
- Cristina Vilares Oliveira: Postdoctoral

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

Research Projects – Competitive Calls

Principal investigator: Arango López, Celso

Title: Proyecto europeo 7º programa marco. 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: Arango López, Celso

Title: Proyecto europeo 7º programa marco. Optimise. "Optimization of Treatment in the Management in Schizophrenia".

Funding body: European Commission

Start date: 2010

End date: 2016

Principal investigator: Arango López, Celso

Title: Proyecto europeo 7º programa marco. PERS. "Paediatric European Risperidone Studies".

Funding body: European Commission

Start date: 2010

End date: 2015

Principal investigator: Parellada Redondo, Mª José

Title: Efecto del tratamiento con ácidos grasos omega 3 durante 8 semanas sobre el metabolismo oxidativo en pacientes con trastornos del espectro autista: ensayo clínico randomizado, cruzado doble-ciego, controlado con placebo.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2011

End date: 2013

Principal investigator: Arango López, Celso

Title: Efecto del tratamiento con ácidos grasos omega-3 durante 24 semanas sobre la pérdida de sustancia gris al año y el metabolismo oxidativo en pacientes con primeros episodios psicóticos de inicio temprano: ensayo clínico randomizado doble-ciego, controlado con placebo.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2012

End date: 2013

Principal investigator: Rapado Castro, Marta

Title: Marcadores oxidativos y neuroinflamatorios de la disfunción cognitiva y de los síntomas negativos en espectroscopia por emisión de protones.

Funding body: F. Koplowitz

Start date: 2012

End date: 2014

Principal investigator: Moreno Ruiz, Carmen

Title: Mecanismos biológicos implicados en la neuroprotección mediante ácidos grasos omega-3 en la psicosis de inicio temprano.

Funding body: F. Koplowitz

Start date: 2012

End date: 2014

Principal investigator: García Amador, Margarita

Title: Modulación dopaminérgica para la incorporación de reglas en poblaciones que presentan primer episodio psicótico o riesgo para el desarrollo de la enfermedad bipolar o la esquizofrenia.

Funding body: F. Mutua Madrileña

Start date: 2011

End date: 2014

Principal investigator: Moreno Pardillo, Mª Dolores

Title: Modulación dopaminérgica para la incorporación de reglas en poblaciones que presentan primer episodio psicótico o riesgo para el desarrollo de la enfermedad bipolar o la esquizofrenia.

Funding body: Instituto de Salud Carlos III

Start date: 2011

End date: 2013

Principal investigator: Moreno Ruiz, Carmen

Title: Evolución de las alteraciones neuroanatómicas en trastorno bipolar de inicio temprano y mecanismos etiofisiopatológicos implicados.

Funding body: Instituto de Salud Carlos III

Start date: 2011

End date: 2013

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

Principal investigator: Parellada Redondo, M^a José

Title: From autism to schizophrenia: Study of the genetic mechanisms underlying brain dysfunction and structural phenotypes in schizophrenia and autistic spectrum disorders.

Funding body: Instituto de Salud Carlos III

Start date: 2011

End date: 2013

Principal investigator: Parellada Redondo, M^a José

Title: Determinantes clínicos y neurobiológicos de segundos episodios de esquizofrenia. Estudio longitudinal de primeros episodios psicóticos.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: Delgado Lacosta, Carlos

Title: Estudio de seguimiento tras cuatro años de la primera evaluación de niños y adolescentes hijos de pacientes con esquizofrenia o trastorno bipolar.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: De Portugal Fernández Del Rivero, Enrique

Title: Alteraciones neurocognitivas en la patogenia de las ideas delirantes en la paranoia (trastorno delirante).

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: Janssen Jeucken, Joost

Title: From ASD to SSD: a study of brain network efficiency and cognitive impairment in autism spectrum disorders and schizophrenia spectrum disorders.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: Arango López, Celso

Title: Estudio neurológico de la pérdida 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: Arango López, Celso

Title: Mecanismos estiofisiopatológicos en la pérdida de sustancia gris cerebral en los primeros episodios psicóticos de inicio temprano. Estudio a partir de un modelo humano y un modelo animal.

Funding body: Instituto de Salud Carlos III

Start date: 2010

End date: 2013

Principal investigator: Arango López, Celso

Title: Proyecto AGES. programa I+D biomedicina com. 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: Arango López, Celso

Title: Fundación Alicia Koplowitz. 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: Parellada Redondo, M^a Jose

Title: Fundación Alicia Koplowitz 2013. M^a José Parellada. 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: Arango López, Celso

Title: Proyecto europeo 7^aprograma marco. BESTAGEING. Biomarker

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

research alliance for diagnosing heart disease in the ageing european population.

Funding body: European Commission

Start date: 2013

End date: 2017

Principal investigator: Arango López, Celso

Title: Proyecto europeo 7º Programa Marco. Aggression subtyping for improved insight and treatment innovation in psychiatric disorders.

Funding body: European Commission

Start date: 2013

End date: 2018

Principal investigator: Arango López, Celso

Title: Proyecto europeo 7º Programa Marco. MATRICS. Multidisciplinary Approaches to Translational Research In Conduct Syndromes.

Funding body: European Commission

Start date: 2014

End date: 2019

Principal investigator: Arango López, Celso

Title: Proyecto europeo 7º Programa Marco. METSY. Neuroimaging platform for characterisation of metabolic co-morbidities in psychotic disorders.

Funding body: European Commission

Start date: 2013

End date: 2017

Principal investigator: Mayoral Aragón, María

Title: Proyecto FIS 2013.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

Theses

| Doctoral student | Title | Director | University |
|-------------------------|--|--------------------|-----------------------------------|
| Miriam Giráldez Quiroga | Síndrome Metabólico secundario a antipsicóticos en niños y adolescentes no tratados previamente | Celso Arango López | Universidad Complutense de Madrid |
| Ana Calvo Calvo | Estudio de la eficacia de una psicoterapia grupal en paralelo para adolescentes con psicosis de inicio temprano y sus familiares | Celso Arango López | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|---|---|---|
| Salvador-Carulla L; Garcia-Gutiérrez JC; Gutiérrez-Colosia MR; Artigas-Pallares J; Ibáñez JG; Pérez JG; Pla MN; Ines FA; Isus S; Cereza JM; Poole M; Lazcano GP; Monzón P; Leiva M; Parellada M; Nonell KG; Hernandez AMI; Rigau E; Martínez-Leal R | Borderline Intellectual Functioning: Consensus and good practice guidelines | Revista de Psiquiatría y Salud Mental |
| Marder SR; Alphs L; Anghelescu IG; Arango C; Barnes TRE; Caers I; Daniel DG; Dunayevich E; Fleischhacker WW; Garibaldi G; Green MF; Harvey PD; Kahn RS; Kane JM; Keefe RSE; Kinon B; Leucht S; Lindenmayer JP; Malhotra AK; Stauffer V; Umbricht D; Wesnes K; Kapur S; Rabinowitz J | Issues and perspectives in designing clinical trials for negative symptoms in schizophrenia | Schizophrenia Research |
| Fleischhacker, W.; Arango, C.; Arteel, P.; Barnes, T.; Carpenter, W.; Galderisi, S.; Knapp, M.; Marder, SR.; Sartorius, N. | Schizophrenia: Time to commit to policy change | Oxford PharmaGenesis™. Schizophrenia Bulletin |

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

| | | |
|---|---|----------------------------------|
| Nutt, D.; Gispen-de Wied, CC.; Arango, C.; Keefe, RS.; Penadés, R.; Murphy, DG.; Robbins, TW.; Sahakian, BJ | Cognition in schizophrenia: Summary Nice Consultation Meeting 2012. Guía de la European College of Neuropsychopharmacology (ECNP) | European Neuropsychopharmacology |
|---|---|----------------------------------|

Publications

Total impact factor: 142.1

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

- de Portugal E; Díaz-Caneja CM; González-Molinier M; de Castro MJ; del Amo V; Arango C; Cervilla JA. Prevalence of premorbid personality disorder and its clinical correlates in patients with delusional disorder. *PSYCHIATRY RESEARCH*. 2013; 210(3) 986-993. IF: 2.682. Quartile: 2.
- Sanchez-Gistau V; Baeza I; Arango C; González-Pinto A; de la Serna E; Parellada M; Graell M; Paya B; Llorente C; Castro-Fornieles J. Predictors of Suicide Attempt in Early-Onset, First-Episode Psychoses: A Longitudinal 24-Month Follow-Up Study. *JOURNAL OF CLINICAL PSYCHIATRY*. 2013; 74(1) 61-68. IF: 5.139. Quartile: 1.
- Darba J; Kaskens L; Aranda P; Arango C; Bobes J; Carmena R; Rejas J. A simulation model to estimate 10-year risk of coronary heart disease events in patients with schizophrenia spectrum disorders treated with second-generation antipsychotic drugs. *ANNALS OF CLINICAL PSYCHIATRY*. 2013; 25(1) 17-26. IF: 2.525. Quartile: 2.
- Arango C. To treat or not to treat? and How to treat? Two questions whose answers are far removed from evidence informed practice in

child psychiatry. *EUROPEAN CHILD & ADOLESCENT PSYCHIATRY*. 2013; 22(9) 521-522. IF: 3.554. Quartile: 1.

- de la Serna E; Andres-Perpina S; Puig O; Baeza I; Bombin I; Bartres-Faz D; Arango C; González-Pinto A; Parellada M; Mayoral M; Graell M; Otero S; Guardia J; Castro-Fornieles J. Cognitive reserve as a predictor of two year neuropsychological performance in early onset first-episode schizophrenia. *SCHIZOPHRENIA RESEARCH*. 2013; 143(1) 125-131. IF: 4.426. Quartile: 1.
- Arango C. Child neuropsychopharmacology: good news... the glass is half full. *WORLD PSYCHIATRY*. 2013; 12(2) 128-129. IF: 12.846. Quartile: 1.
- Paya B; Rodríguez-Sánchez JM; Otero S; Muñoz P; Castro-Fornieles J; Parellada M; González-Pinto A; Soutullo C; Baeza I; Rapado-Castro M; Sáenz-Herrero M; Moreno D; Arango C. Premorbid impairments in early-onset psychosis: Differences between patients with schizophrenia and bipolar disorder. *SCHIZOPHRENIA RESEARCH*. 2013; 146(1-3) 103-110. IF: 4.426. Quartile: 1.
- Salvador-Carulla L; García-Gutiérrez JC; Gutiérrez-Colosia MR; Artigas-Pallares J; Ibáñez JG; Pérez JG; Pla MN; Ines FA; Isus S; Cereza JM; Poole M; Lazcano GP; Monzón P; Leiva M; Parellada M; Nonell KG; Hernández AMI; Rigau E; Martínez-Leal R. Borderline Intellectual Functioning: Consensus and good practice guidelines. *REVISTA DE PSIQUIATRIA Y SALUD MENTAL*. 2013; 6(3) 109-120. IF: 1.044. Quartile: 3.
- de Portugal E; González N; del Amo V; Haro JM; Díaz-Caneja CM; del Castillo JDL; Cervilla JA. Empirical redefinition of delusional disorder and its phenomenology: the DELIREMP study. *COMPREHENSIVE PSYCHIATRY*. 2013; 54(3) 243-255. IF: 2.256. Quartile: 2.
- Marder SR; Alphs L; Anghelescu IG; Arango C; Barnes TRE; Caers I; Daniel DG; Dunayevich E; Fleischhacker WW; Garibaldi G; Green MF; Harvey PD; Kahn RS; Kane JM; Keefe RSE; Kinon B; Leucht S; Lindenmayer JP; Malhotra AK; Stauffer V; Umbricht D; Wesnes K; K. Issues and perspectives in designing clinical trials for negative symptoms in schizophrenia. *SCHIZOPHRENIA RESEARCH*. 2013; 150(2-3) 328-333. IF: 4.426. Quartile: 1.

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

- Bombin I; Mayoral M; Castro-Fornieles J; González-Pinto A; de la Serna E; Rapado-Castro M; Barbeito S; Parellada M; Baeza I; Graell M; Paya B; Arango C. Neuropsychological evidence for abnormal neurodevelopment associated with early-onset psychoses. *PSYCHOLOGICAL MEDICINE*. 2013; 43(4) 757-768. IF: 5.428. Quartile: 1.
- Parellada M; Boada L; Moreno C; Llorente C; Romo J; Muela C; Arango C. Specialty Care Programme for autism spectrum disorders in an urban population: A case-management model for health care delivery in an ASD population. *EUROPEAN PSYCHIATRY*. 2013; 28(2) 102-109. IF: 3.21. Quartile: 1.
- Caamano M; Boada L; Merchan-Naranjo J; Moreno C; Llorente C; Moreno D; Arango C; Parellada M. Psychopathology in Children and Adolescents with ASD Without Mental Retardation. *JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS*. 2013; 43(10) 2442-2449. IF: 3.384. Quartile: 1.
- Aleman-Gómez Y; Janssen J; Schnack H; Balaban E; Pina-Camacho L; Alfaro-Almagro F; Castro-Fornieles J; Otero S; Baeza I; Moreno D; Bargallo N; Parellada M. The Human Cerebral Cortex Flattens during Adolescence. *JOURNAL OF NEUROSCIENCE*. 2013; 33(38) 15004-15010. IF: 6.747. Quartile: 1.
- Bernardo M; Bioque M; Parellada M; Ruiz JS; Cuesta MJ; Llerena A; Sanjuan J; Castro-Fornieles J; Arango C; Cabrera B. Assessing clinical and functional outcomes in a gene-environment interaction study in first episode of psychosis (PEPs). *REVISTA DE PSIQUIATRIA Y SALUD MENTAL*. 2013; 6(1) 4-16. IF: 1.044. Quartile: 3.
- Bioque M; García-Bueno B; MacDowell KS; Meseguer A; Sáiz PA; Parellada M; González-Pinto A; Rodríguez-Jiménez R; Lobo A; Leza JC; Bernardo M. Peripheral Endocannabinoid System Dysregulation in First-Episode Psychosis. *EUROPSYCHOPHARMACOLOGY*. 2013; 38(13) 2568-2577. IF: 7.833. Quartile: 1.
- Nuevo R; Van Os J; Arango C; Chatterji S; Ayuso-Mateos JL. Evidence for the early clinical relevance of hallucinatory-delusional states in the general population. *ACTA PSYCHIATRICA SCANDINAVICA*. 2013; 127(6) 482-493. IF: 5.545. Quartile: 1.
- Nutt D; Gispen-de Wied CC; Arango C; Keefe RSE; Penades R; Murphy DG; Robbins TW; Sahakian BJ. Cognition in schizophrenia: Summary Nice Consultation Meeting 2012. *EUROPEAN NEUROPSYCHOPHARMACOLOGY*. 2013; 23(8) 769-778. IF: 5.395. Quartile: 1.
- Torrent C; Bonnin CDM; Martínez-Aran A; Valle J; Amann BL; González-Pinto A; Crespo JM; Ibanez A; Garda-Portilla MP; Tabares-Seisdedos R; Arango C; Colom F; Sole B; Pacchiarotti I; Rosa AR; Ayuso-Mateos JL; Anaya C; Fernández P; Landín-Romero R; Alonso-La. Efficacy of Functional Remediation in Bipolar Disorder: A Multicenter Randomized Controlled Study. *AMERICAN JOURNAL OF PSYCHIATRY*. 2013; 170(8) 852-859. IF: 13.559. Quartile: 1.
- Garcia-Portilla MP; Gomar JJ; Bobes-Bascaran MT; Menendez-Miranda I; Sáiz PA; Muniz J; Arango C; Patterson TL; Harvey PD; Bobes J; Goldberg TE. Validation of a European Spanish-version of the University of California performance Skills Assessment (Sp-UPSA) in patients with schizophrenia and bipolar disorder. *SCHIZOPHRENIA RESEARCH*. 2013; 150(2-3) 421-426. IF: 4.426. Quartile: 1.
- García-Amador M; de la Serna E; Vila M; Romero S; Valenti M; Sánchez-Gistau V; Benabarre A; Vieta E; Castro-Fornieles J. Parents with bipolar disorder: Are disease characteristics good predictors of psychopathology in offspring?. *EUROPEAN PSYCHIATRY*. 2013; 28(4) 240-246. IF: 3.21. Quartile: 1.
- Noguera A; Ballesta P; Baeza I; Arango C; de la Serna E; González-Pinto A; Parellada M; Graell M; Moreno C; Otero S; Castro-Fornieles J. Twenty-Four Months of Antipsychotic Treatment in Children and Adolescents With First Psychotic Episode Discontinuation and Tolerability. *JOURNAL OF CLINICAL PSYCHOPHARMACOLOGY*. 2013; 33(4) 463-471. IF: 3.761. Quartile: 1.
- Pina-Camacho L; Villero S; Boada L; Fraguas D; Janssen J; Mayoral M; Llorente C; Arango C; Parellada M. Structural magnetic resonance imaging data do not help support DSM-5 autism spectrum disorder category. *RESEARCH IN AUTISM SPECTRUM DISORDERS*. 2013; 7(2) 333-343. IF: 2.378. Quartile: 1.

PSYCHOLOGICAL AND NEUROBIOLOGICAL BASIS OF MENTAL DISORDERS. NEURODEVELOPMENTAL DISORDERS

- Arango C; Garibaldi G; Marder SR. Pharmacological approaches to treating negative symptoms: A review of clinical trials. *SCHIZOPHRENIA RESEARCH*. 2013; 150(2-3) 346-352. IF: 4.426. Quartile: 1.
- Ramos M; Boada L; Moreno C; Llorente C; Romo J; Parellada M. Attitude and risk of substance use in adolescents diagnosed with Asperger syndrome. *DRUG AND ALCOHOL DEPENDENCE*. 2013; 133(2) 535-540. IF: 3.278. Quartile: 1.
- MacDowell KS; García-Bueno B; Madrigal JLM; Parellada M; Arango C; Mico JA; Leza JC. Risperidone normalizes increased inflammatory parameters and restores anti-inflammatory pathways in a model of neuroinflammation. *INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY*. 2013; 16(1) 121-135. IF: 5.264. Quartile: 1.
- Moreno C; Nuevo R; Chatterji S; Verdes E; Arango C; Ayuso-Mateos JL. Psychotic symptoms are associated with physical health problems independently of a mental disorder diagnosis: results from the WHO World Health Survey. *WORLD PSYCHIATRY*. 2013; 12(3) 251-257. IF: 12.846. Quartile: 1.
- Parellada M. Why psychogeriatrics starts right after adolescence. *EUROPEAN CHILD & ADOLESCENT PSYCHIATRY*. 2013; 22(7) 391-393. IF: 3.554. Quartile: 1.
- Ibáñez-Casas I; De Portugal E; González N; McKenney KA; Haro JM; Usall J; Pérez-García M; Cervilla JA. Deficits in Executive and Memory Processes in Delusional Disorder: A Case-Control Study. *PLOS ONE*. 2013; 8(7). IF: 3.534. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|-------|
| Own publications | 14 | 67.5 |
| Joint publications | 15 | 74.7 |
| First-decile publications | 13 | 90.1 |
| First-quartile publications | 24 | 132.6 |
| Second-quartile publications | 3 | 7.5 |
| Third-quartile publications | 2 | 2.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 29 | 142.1 |

PARKINSON DISEASE AND MOVEMENT DISORDER

Group Director: Dr. Francisco Grandas Pérez

Group type: Emerging



Research lines

- L1. New pharmacological therapy for Parkinson disease.
- L2. Deep brain stimulation for movement disorders.
- L3. Biological markers of Parkinson disease.
- L4. Pathophysiology of dystonia.
- L5. Balance and gait disorders.
- L6. Hereditary spastic paraparesis.

Group members

- **Beatriz de la Casa Fages:** Postdoctoral
- **Ana Contreras Chicote:** Predoctoral
- **Ángel Esteban García:** Postdoctoral
- **Carlos Fernández Carballal:** Predoctoral
- **María Pilar Fernández García:** Predoctoral
- **Francisco Javier Grandas Pérez:** Senior researcher
- **Juan Adán Guzmán de Villoria Lebiedziewski:** Postdoctoral
- **Laura Lillo Triguero:** Predoctoral
- **Javier Pérez Sánchez:** Predoctoral
- **Julio Ignacio Prieto Montalvo:** Postdoctoral
- **Julia Romero Martínez:** Predoctoral
- **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

Theses

| Doctoral student | Title | Director | University |
|--------------------------|---|-------------------|-----------------------------------|
| Beatriz de la Casa Fages | Efecto de la estimulación subtalámica sobre el equilibrio en la enfermedad de Parkinson | Francisco Grandas | Universidad Complutense de Madrid |

PARKINSON DISEASE AND MOVEMENT DISORDER

Publications

Total impact factor: 18.3

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

- Muller T; van Laar T; Cornblath DR; Odin P; Klostermann F; Grandas FJ; Ebersbach G; Urban PP; Valdeoriola F; Antonini A. Peripheral neuropathy in Parkinson's disease: Levodopa exposure and implications for duodenal delivery [Universally Available]. *PARKINSONISM & RELATED DISORDERS*. 2013; 19(5) 501-507. IF: 4.126. Quartile: 1.
- Martino ME; de Villoria JG; Lacalle-Aurioles M; Olazaran J; Cruz I; Navarro E; Garcia-Vazquez V; Carreras JL; Desco M. Comparison of different methods of spatial normalization of FDG-PET brain images in the voxel-wise analysis of MCI patients and controls. *ANNALS OF NUCLEAR MEDICINE*. 2013; 27(7) 600-609. IF: 1.507. Quartile: 3.
- Cuello JP; Romero J; de Ory F; de Andres C. Longitudinally Extensive Varicella-Zoster Virus Myelitis in a Patient With Multiple Sclerosis. *SPINE*. 2013; 38(20) E1282-E1284. IF: 2.447. Quartile: 1.
- Grandas F. Subcutaneous infusions of apomorphine: a reappraisal of its therapeutic efficacy in advanced Parkinson's disease. *EXPERT REVIEW OF NEUROTHERAPEUTICS*. 2013; 13(12) 1343-1353. IF: 2.834. Quartile: 2.
- Lacalle-Aurioles M; Aleman-Gomez Y; Guzman-De-Villoria JA; Cruz-Orduna I; Olazaran J; Mateos-Perez JM; Martino ME; Desco M. Is the Cerebellum the Optimal Reference Region for Intensity Normalization of Perfusion MR Studies in Early Alzheimer's Disease?. *PLOS ONE*. 2013; 8(12). IF: 3.534. Quartile: 1.
- Berardelli A; Wenning GK; Antonini A; Berg D; Bloem BR; Bonifati V; Brooks D; Burn DJ; Colosimo C; Fanciulli A; Ferreira J; Gasser T; Grandas F; Kanovsky P; Kostic V; Kulisevsky J; Oertel W; Poewe W; Reese JP; Relja M; Ruzicka E; Schrag A; Seppi K; Taba P. EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease. *EUROPEAN JOURNAL OF NEUROLOGY*. 2013; 20(1) 16. IF: 3.852. Quartile: 1.

Publications in nonindexed journals in the Journal Citation Reports

- Valdeoriola F; Puig-Junoy J; Puig-Peiró R; Workgroup of the SCOPE study. Cost analysis of the treatments for patients with advanced Parkinson's disease: SCOPE study. *JOURNAL OF MEDICAL ECONOMICS*. 2013; 16(2) 191-201.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 2 | 5.3 |
| Joint publications | 4 | 13.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 4 | 14.0 |
| Second-quartile publications | 1 | 2.8 |
| Third-quartile publications | 1 | 1.5 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 1 | - |
| Total publications | 7 | 18.3 |

CLINICAL AND ETIOPATHOGENIC ASPECTS OF NEUROMUSCULAR DISEASE

Group Director: Dr. José Luis Muñoz Blanco

Type: Emerging

Research lines

- L1. Biomarkers and etiopathogenesis of amyotrophic lateral sclerosis: gene expression in lymphocytes and behavior of stem cells from the olfactory neuroepithelium.
- L2. System of identification and quantification of human endogenous retrovirus in patients with amyotrophic lateral sclerosis.

Group members (researchers and support staff)

- Irene Catalina Álvarez: Predoctoral
- María Rosario Jiménez Bautista: Predoctoral
- Roberto Moure Romano: Predoctoral
- José Luis Muñoz Blanco: Group director
- Ángela Puche Torres: Predoctoral

Publications

Total impact factor: 7,4

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

- Querol L; Rojas-Garcia R; Casasnovas C; Sedano MJ; Munoz-Blanco JL; Alberti MA; Paradas C; Sevilla T; Pardo J; Capabro JL; Sivera R; Guerrero A; Gutierrez-Rivas E; Illa I. Long-term outcome in chronic inflammatory demyelinating polyneuropathy patients treated with intravenous immunoglobulin: A retrospective study. MUSCLE & NERVE. 2013; 48(6) 870-876. IF: 2.311. Quartile: 2.

- García-Redondo A; Dols-Icardo O; Rojas-Garcia R; Esteban-Pérez J; Cordero-Vázquez P; Muñoz-Blanco JL; Catalina I; González-Muñoz M; Varona L; Sarasola E; Povedano M; Sevilla T; Guerrero A; Pardo J; de Munain AL; Márquez-Infante C; de Rivera FJR; P. Analysis of the C9orf72 Gene in Patients with Amyotrophic Lateral Sclerosis in Spain and Different Populations Worldwide. HUMAN MUTATION. 2013; 34(1) 79-82. IF: 5.05. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 2 | 7.4 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 5.1 |
| Second-quartile publications | 1 | 2.3 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 7.4 |

NEUROIMMUNOLOGY

Group Director: Dr. Clara de Andrés Frutos

Group type: Emerging



Research lines

L1. Role of the immune system in the pathogenesis and treatment of multiple sclerosis.

L2. Autoimmune optic neuritis and myelitis.

Group members

- **Clara de Andrés Frutos:** Group director
- **María Luisa Martínez Ginés:** Predoctoral
- **María Rosa Peraita Adrados:** Postdoctoral

Publications

Total impact factor: 18.4

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

- Faraco J; Lin L; Kornum BR; Kenny EE; Trynka G; Einen M; Rico TJ; Lichtner P; Dauvilliers Y; Arnulf I; Lecendreux M; Javidi S; Geisler P; Mayer G; Pizza F; Poli F; Plazzi G; Overeem S; Lammers GJ; Kemlink D; Sonka K; Nevsimalova S; Rouleau G; Desautels A.; ImmunoChip Study Implicates Antigen Presentation to T Cells in Narcolepsy. *PLOS GENETICS*. 2013; 9(2). IF: 8.167. Quartile: 1.
- Miano S; Peraita-Adrados R. Nocturnal frontal lobe epilepsy is often misdiagnosed as sleep disorders in children: a case series. *Revista De Neurologia*. 2013; 56(5) 257-267. IF: 0.926. Quartile: 4.
- Oreja-Guevara C; Montalban X; de Andres C; Casanova-Estruch B; Munoz-Garcia D; Garcia I; Fernandez O. Consensus document on spasticity in patients with multiple sclerosis. *REVISTA DE NEUROLOGIA*. 2013; 57(8) 359-373. IF: 0.926. Quartile: 4.
- Cuello JP; Romero J; de Ory F; de Andres C. Longitudinally Extensive Varicella-Zoster Virus Myelitis in a Patient With Multiple Sclerosis. *SPINE*. 2013; 38(20) E1282-E1284. IF: 2.447. Quartile: 1.
- Maurovich-Horvat E; Kemlink D; Hogl B; Frauscher B; Ehrmann L; Geisler P; Ettenhuber K; Mayer G; Peraita-Adrados R; Calvo E; Lammers GJ; Van der Heide A; Ferini-Strambi L; Plazzi G; Poli F; Dauvilliers Y; Jennrum P; Leonthin H; Mathis J; Wierzbicka A; Puer. Narcolepsy and pregnancy: a retrospective European evaluation of 249 pregnancies. *JOURNAL OF SLEEP RESEARCH*. 2013; 22(5) 496-512. IF: 2.949. Quartile: 2.
- Luca G; Haba-Rubio J; Dauvilliers Y; Lammers GJ; Overeem S; Donjacour CE; Mayer G; Javidi S; Iranzo A; Santamaria J; Peraita-Adrados R; Hor H; Katalik Z; Plazzi G; Poli F; Pizza F; Arnulf I; Lecendreux M; Bassetti C; Mathis J; Heinzer R; Jennrum P; Knudsen. Clinical, polysomnographic and genome-wide association analyses of narcolepsy with cataplexy: a European Narcolepsy Network study. *JOURNAL OF SLEEP RESEARCH*. 2013; 22(5) 482-495. IF: 2.949. Quartile: 2.

NEUROIMMUNOLOGY

Publications in nonindexed journals in the Journal Citation Reports

- García-Merino A; Fernández O; Montalbán X; de Andrés C; Oreja-Guevara C; Rodríguez-Antigüedad A y Arbizu T. Documento del Grupo de Consenso de la Sociedad Española de Neurología sobre el uso de medicamentos en esclerosis múltiple. *Neurología*. 2013; 28: 375-78.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 2 | 3.4 |
| Joint publications | 4 | 15.0 |
| First-decile publications | 1 | 8.2 |
| First-quartile publications | 2 | 10.6 |
| Second-quartile publications | 2 | 5.9 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 2 | 1.9 |
| Nonindexed publications | 1 | - |
| Total publications | 7 | 18.4 |

CLINICAL NEUROLOGY

Group Director: Vacant

Group type: Associated Clinical

Research lines

L1. Cognitive impairment.

L2. Dementia.

Group members

- **David Ezpeleta Echávarri:** Predoctoral
- **Nicolasa Muñoz Rubio:** Administrative
- **Francisco Javier Olazaran Rodríguez:** Postdoctoral
- **Pilar Pérez González de Apodaca:** Predoctoral

Publications

Total impact factor: 14.5

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

- Lacalle-Aurioles M; Aleman-Gomez Y; Guzman-De-Villoria JA; Cruz-Orduna I; Olazaran J; Mateos-Perez JM; Martino ME; Desco M. Is the Cerebellum the Optimal Reference Region for Intensity Normalization of Perfusion MR Studies in Early Alzheimer's Disease?. PLOS ONE. 2013; 8(12). IF: 3.534. Quartile: 1.
- Martino ME; de Villoria JG; Lacalle-Aurioles M; Olazaran J; Cruz I; Navarro E; Garcia-Vazquez V; Carreras JL; Desco M. Comparison of different methods of spatial normalization of FDG-PET brain images in the voxel-wise analysis of MCI patients and controls. ANNALS OF NUCLEAR MEDICINE. 2013; 27(7) 600-609. IF: 1.507. Quartile: 3.
- Olazaran J; Hernandez-Tamames JA; Molina E; Garcia-Polo P; Dobato JL; Alvarez-Linera J; Martinez-Martin P. Clinical and Anatomical

Correlates of Gait Dysfunction in Alzheimer's Disease. JOURNAL OF ALZHEIMERS DISEASE. 2013; 33(2) 495-505. IF: 3.612. Quartile: 2.

- Olazaran J; Martinez MD; Rabano A. Normal pressure hydrocephalus mimicking Alzheimer's disease: such an infrequent case?. CLINICAL NEUROPATHOLOGY. 2013; 32(6) 502-507. IF: 1.311. Quartile: 4.
- Olazaran J; Gonzalez B; Lopez-Alvarez J; Castagna A; Osa-Ruiz E; Herrero-Cano V; Aguera-Ortiz L; Rinaldi S; Martinez-Martin P. Motor Effects of REAC in Advanced Alzheimer's Disease: Results From a Pilot Trial. JOURNAL OF ALZHEIMERS DISEASE. 2013; 36(2) 297-302. IF: 3.612. Quartile: 2.
- Pardo CC; Orduna IC; Martinez BE; Viedma SC; Garcia PT; Rodriguez JO. Effectiveness of the Mini-Mental State for detection of cognitive impairment in Primary Care. ATENCION PRIMARIA. 2013; 45(8) 426-433. IF: 0.894. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 5 | 14.2 |
| Joint publications | 1 | 0.3 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.5 |
| Second-quartile publications | 2 | 7.2 |
| Third-quartile publications | 2 | 2.4 |
| Fourth-quartile publications | 1 | 1.3 |
| Nonindexed publications | 0 | - |
| Total publications | 6 | 14.5 |

BIOLOGY OF INFLAMMATION

Group Director: Dr. M.^a Concepción Guisasola Zulueta

Group type: Associated



Research lines

- L1. Prognostic biomarkers of degeneration of the knee joint.
- L2. Oxidative stress and molecular mechanisms in the etiopathogenesis of autism spectrum disorders and in early onset schizophrenia. Therapeutic implications.
- L3. Biomarkers in CSF on the continuum of preclinical-prodromal Alzheimer's disease (SIGNAL Study) and in normotensive hydrocephalus.
- L4. 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 aggression. 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. It belongs to CIBERSAM and the Neurology Service of HGUGM. It is also involved in the cooperative project CIBERNED, the Artificial Circulation Laboratory of IISGM, and with the Orthopedic Surgery Service of HGUGM, 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

- **Elena Dulin Íñiguez:** Postdoctoral
- **María Concepción Guisasola Zulueta:** Group director
- **María del Mar Pérez Vivas:** Support technician
- **María Jesús Sánchez Fernández:** Support technician

BIOLOGY OF INFLAMMATION

Projects

Principal investigator: Guisasola Zulueta, María Concepción
Title: Proyecto FIS 2013. 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; PCT/ES2010/070622
Owner: FIBHGM
Inventors: María Concepción Guisasola Zulueta, Elena Dulin Íñiguez



AREA 4

Infectious Diseases and AIDS

Area Coordinator:
Dr. Emilio Bouza Santiago

Despite considerable advances in our knowledge of infectious diseases in recent years, infection continues to be the major health problem facing society today. The spectrum of infection has been modified by the appearance 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 IISGM. Essentially, the Infectious Disease and AIDS Area carries out its research through 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 various 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. Of note, a strength of this Area is its ability to obtain human resources through competitive calls Undoubtedly, the future of Infectious Diseases and AIDS is based on the maintenance of those aspects of translational research that have characterized its activity to date. Basic research laboratory work 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 AXES AND LINES

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 collaborations in infectious diseases and AIDS.

1. Integration in research networks in the area of infectious diseases and AIDS.

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. Alliances and collaborations in the area of infectious diseases and AIDS.

Strategic objectives

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

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

1. Scientific continuity in the molecular 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*.

RESEARCH AXES AND LINES

Strategic lines

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

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

5. Consolidate the research line of cardiovascular infection.

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).

RESEARCH AXES AND LINES

Strategic lines

8. Maintenance and diversification of funding sources.

Strategic objectives

- Maintain public and private financial support.
- Enter into agreements with R&D&I 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. Extension of academic options.

Strategic objectives

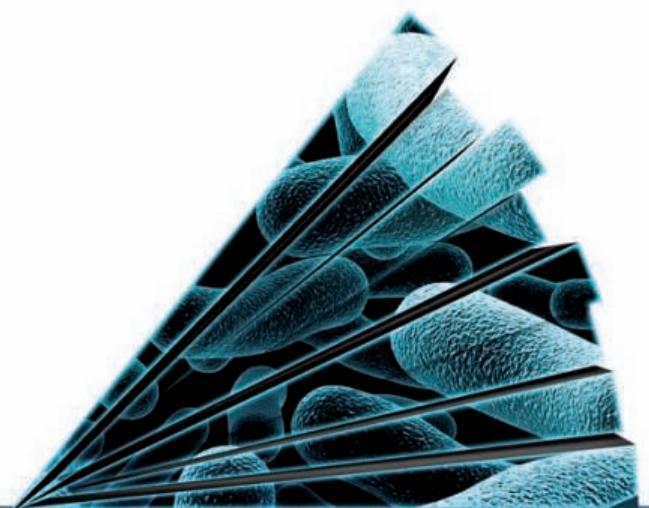
- Promote contracting of clinical research staff.
- Develop undergraduate training in the laboratory.

Axis 4: Improvement and acquisition of physical space for research into infectious diseases and AIDS.

Strategic objectives

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

AREA 4: GROUPS



Infectious diseases and AIDS

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

INFECTIOUS DISEASES

Group Director: Dr. Emilio Bouza Santiago

Group 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. Severe pneumonia.

P3. Infection in immunodepressed patients.

- L1. Invasive mycosis.
- L2. BK virus.
- L3. Infection in transplant recipients.

P4. Infection by mycobacteria.

- L1. Clonal complexity of tuberculous infection.
- L2. Molecular epidemiology of tuberculosis.
- L3. Development of new molecular diagnostic techniques.
- L4. Characterization of infectivity.

P5. Bone and joint infection.

- L1. Prosthesis infection.

P6. Tuberculosis.

P7. Mycosis and immunodepressed patients.

P8. Respiratory infection and intensive care.

P9. Endovascular infection.

P10. Nosocomial infection, pathogens, and antimicrobial agents.

Group members

- Iván Adán Rodríguez: Administrative
- Luís Alcalá Hernández: Predoctoral
- Emilio Bouza Santiago: Senior researcher
- Almudena Burillo Albizu: Postdoctoral
- Inmaculada Cabrero Martínez: Predoctoral
- Emilia Cercenado Mansilla: Predoctoral
- Pilar Escribano Martos: Sara Borrell
- Alia Eworo Ndongo: Predoctoral
- Ana Elisa Fernández Cruz: Postdoctoral
- Rocío Fernández Rey: Group management
- Beatriz Gama Ahijado: Support technician
- Paula García Morales: Support technician
- Dario García De Viedma Del Álamo: Senior researcher
- Paloma Gijón Vidaurreta: Predoctoral

INFECTIOUS DISEASES

Group members

- María Guembe Ramírez: Miguel Servet
- Jesús Vicente Guinea Ortega: Miguel Servet
- Marta Herranz Martín: CIBER
- Cristina Iglesias Arribas: CIBER
- Angel Jose Iglesias Bautista: Support technician
- Martha Jeannette Kestler Hernández: Post-MIR FIBHGM
- Paula López Roa: Postdoctoral
- Laura Judith Marcos Zambrano: PFIS
- María de las Mercedes Marín Arriaza: Postdoctoral
- Adoración Martín López: Postdoctoral
- Pablo Martín-Rabadán Caballero: Predoctoral
- María del Carmen Martínez Jiménez: ISCIII research project
- Patricia Muñoz García-Paredes: Intensified
- Yurena de los Angeles Navarro García: Predoctoral
- Belén Padilla Ortega: Senior researcher
- Mª Teresa Pelaez García de la Rasilla: Postdoctoral
- Laura Pérez Garcia: CIBER
- Maria Jesús Pérez Granda: Postdoctoral
- Elena Manuela Reigadas Ramírez: Rio Hortega
- Belen Rodríguez Sánchez: CIBER
- Adrian Ruiz Rodríguez: Support technician
- María Jesús Ruiz Serrano: Predoctoral
- Mar Sánchez Somolinos: Predoctoral
- Maricela Valerio Minero: Predoctoral

Research Projects – Competitive Calls

Principal investigator: García De Viedma del Alamo, Dario
Title: A1/036088/11 AECID 2011. Mejorando el conocimiento de la transmisión de tuberculosis en población indígena de Ecuador y Perú: plan piloto de genotipado avanzado de *Mycobacterium tuberculosis* sobre muestras respiratorias.

Funding body: Ministerio de Economía y Competitividad
Start date: 2012
End date: 2013

Principal investigator: Bouza Santiago, Emilio
Title: F.Mutua Madrileña 2011. Emilio Bouza Santiago
“Estudio comparativo de métodos microbiológicos para el diagnóstico de catéteres totalmente implantables. Proyecto Escati”
Funding body: F. Mutua Madrileña
Start date: 2011
End date: 2014

Principal investigator: Muñoz García-Paredes, Patricia
Title: Programa multidisciplinar para la gestión de antifúngicos y la reducción de candidiasis invasoras (PROMULGA-Cl)
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Pérez Granda, María Jesús
Title: Impacto de un paquete de medidas en la reducción de la incidencia de neumonía asociada a ventilación mecánica en adultos. Estudio Reina.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Gijón Vidaurreta, Paloma
Title: Liberación de Ifn-Gamma (IGRA) vs test cutáneo (PPD) como screening de infección tuberculosa latente en pacientes reumatológicos antes y durante tratamiento con modificadores de la enfermedad.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Guinea Ortega, Jesús Vicente
Title: Proyecto FIS 2011. Caraterización de levaduras causantes de fungemia: identificación molecular, determinación de la sensibilidad antifúngica, genotipado de resistencia a equinocandinas y tipificación molecular.
Funding body: Instituto de Salud Carlos III
Start date: 2012
End date: 2014

INFECTIOUS DISEASES

Principal investigator: García de Viedma del Álamo, Darío
Título: Proyectos FIS 2012. Integración de estrategias de secuenciación de genoma completo (WGS) para avanzar en el conocimiento de aspectos clave en la infección por *Mycobacterium tuberculosis*: viruela, transmisión, capacidad de adaptación y adquisición de variabilidad.

Funding body: Instituto de Salud Carlos III
Start date: 2012
End date: 2016

Principal investigator: Bouza Santiago, Emilio
Título: Neumonía en pacientes hospitalizados en medicina interna.
Funding body: Instituto de Salud Carlos III
Start date: 2010
End date: 2013

Principal investigator: García De Viedma del Álamo, Darío
Título: Considerando la complejidad clonal en tuberculosis: análisis de su dimensión, evaluación del papel potencial de factores bacteriológicos y caracterización de cepas/variantes implicadas con infectividad diferencial.

Funding body: Instituto de Salud Carlos III
Start date: 2010
End date: 2013

Principal investigator: Guembe Ramírez María
Título: Estudio de optimización del diagnóstico y manejo de la candemia relacionada con el catéter. Proyecto ESDIMAC.
Funding body: F. Mutua Madrileña
Start date: 2013
End date: 2014

Principal investigator: Muñoz García-Paredes, Patricia
Título: Proyecto FIS 2013. 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: Pelaez García de la Rasilla, M^a Teresa
Título: Proyecto FIS 2013. 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: Bouza Santiago, Emilio
Título: Proyecto FIS 2013. Emilio Bouza Santiago. 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

Theses

| Doctoral student | Title | Director | University |
|------------------|--|--|-----------------------------------|
| Paula López Roa | Optimización del diagnóstico microbiológico de gripe basada en la experiencia de la pandemia de gripe A H1N1 de 2009 | Emilio Bouza Santiago, Patricia Muñoz García-Paredes | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|--|---------------------------------------|
| Bassetti M; Marchetti M; Chakrabarti A; Colizza S; Garnacho-Montero J; Kett D; Munoz P; Cristini F; Andoniadou A; Viale P; Della Rocca G; Roilides E; Sganga G; Walsh T; Tascini C; Tumbarello M; Menichetti F; Righi E; Eckmann C; Viscoli C; Shorr A; Leroy O; Petrikos G; De Rosa FG | A research agenda on the management of intra-abdominal candidiasis: results from a consensus of multinational experts | Intensive Care Medicine |
| S. B. Debast, M. P. Bauer, E. J. Kuijper, on behalf of the Committee | European Society of Clinical Microbiology and Infectious Diseases: update of the treatment guidance document for Clostridium difficile infection | Clinical Microbiology and Infection |
| Bouza E, Giannella M, Pinilla B, Pujol R, Capdevila JA, Muñoz P. | The management of pneumonia in internal medicine. | Rev Clin Esp. |
| Tumbarello M; Menichetti F; Righi E; Eckmann C; Viscoli C; Shorr A; Leroy O; Petrikos G; De Rosa FG. | A research agenda on the management of intra-abdominal candidiasis: results from a consensus of multinational experts | Intensive Care Medicine |
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Clinical Practice Guidelines

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Intellectual Property

Title: Estudio de impacto clínico de un plan docente de formación continuada sobre las infecciones asociadas a dispositivos intravasculares

Reference: M-003545/2013

Owner: FIBHGM

Inventors: Emilio Bouza, María Guembe, Patricia Muñoz, Mª Eugenia González, Mª Jesús Pérez, Mª del Mar San Segundo

Publications

Total impact factor: 229.9

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

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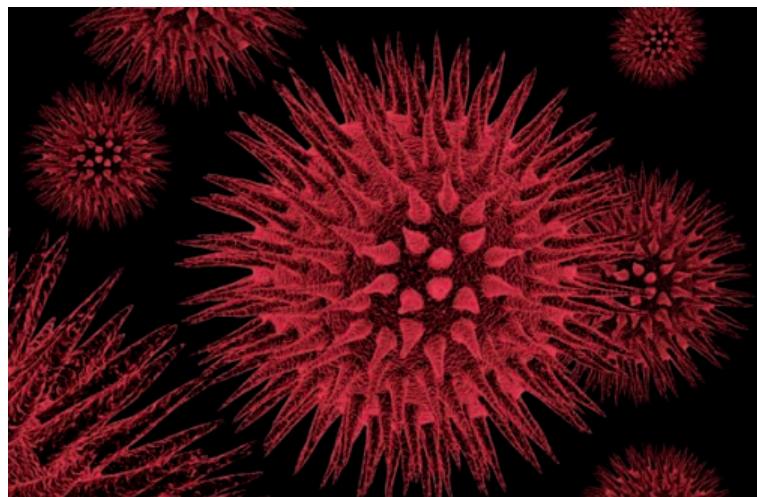
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|------------------------------|---------------------|-------|
| Own publications | 36 | 120.7 |
| Joint publications | 26 | 109.1 |
| First-decile publications | 17 | 83.0 |
| First-quartile publications | 41 | 184.3 |
| Second-quartile publications | 8 | 23.1 |
| Third-quartile publications | 10 | 20.1 |
| Fourth-quartile publications | 3 | 2.4 |
| Nonindexed publications | 1 | - |
| Total publications | 63 | 229.9 |

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF HIV AND ASSOCIATED CONDITIONS

Group Director: Dr. Juan Berenguer Berenguer

Group type: Consolidated



Programs and research 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 Aldámiz-Echevarría Lois:** Río Hortega
- **Juan Berenguer Berenguer:** Senior researcher
- **Ana María Carrero Gras:** Predoctoral
- **Saray Corral Carretero:** Predoctoral
- **Jaime Cosín Ochaíta:** Predoctoral
- **Cristina Díez Romero:** ISCIII Support technician
- **María Teresa González-Escalada Castellón:** Administration
- **Isabel Gutiérrez Cuéllar:** Predoctoral
- **Juan Carlos López Bernaldo de Quirós:** Senior researcher
- **Pilar Miralles Martín:** Predoctoral
- **Francisco Parras Vázquez:** Postdoctoral
- **Margarita Ramírez Schacke:** Predoctoral
- **Pablo Ryan Murua:** Predoctoral
- **Francisco Tejerina Picado:** FIPSE

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF HIV AND ASSOCIATED CONDITIONS

Research Projects – Competitive Calls

Principal investigator: Juan Berenguer Berenguer

Title: Erradicación del virus de la hepatitis C en pacientes infectados por el VIH: efectos a largo plazo sobre la morbilidad y mortalidad no relacionada con la hepatopatía, sobre la activación inmune y sobre marcadores metabólicos, de inflamación y de daño endotelial.

Funding body: Fundación para la Investigación y la Prevención del Sida en España

Start date: 2011

End date: 2013

Principal investigator: Juan Berenguer Berenguer

Title: Erradicación del VHC en pacientes coinfectados por VIH/VHC: efecto sobre la inflamación, el daño endotelial, la activación inmune y la aterosclerosis preclínica.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: Juan Berenguer Berenguer

Title: Red De Sida (RIS).

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

Theses

| Doctoral student | Title | Director | University |
|--------------------------------|--|---|--------------------------------|
| Carolina Navarro San Francisco | Evolución de las características clínicas y epidemiológicas de la coinfección por el virus de la inmunodeficiencia humana y el virus de la hepatitis C en la población española 2010 | Juan José González García, Francisco Arnalich Fernández, Juan Berenguer Berenguer | Universidad Autónoma de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|---|--|--|
| Blasco AJ; Llibre JM; Arribas JR; Boix V; Clotet B; Domingo P; González-García J; Knobel H; López JC; Lozano F; Miro JM; Podzamczer D; Santamaría JM; Tuset M; Zamora L; Lázaro P; Gatell JM | Analysis of costs and cost-effectiveness of preferred GESIDA/National AIDS Plan regimens for initial antiretroviral therapy in human immunodeficiency virus infected adult patients in 2013 | Enfermedades Infecciosas y Microbiología Clínica |
| Domingo P; Polo R; Lozano F; Aldeguer JL; Aguirrebengoa K; Estrada V; Gutiérrez F; Knobel H; Llibre JM; Miralles C; Miro JM; Rivero A; Santos J; Tuset M; Antela A; Asensi V; Arribas JR; Blanco JR; Boix V; García F; Gatell JM; Mallolás J; Martínez E; Moreno S; Palacios R; Pérez-Elías MJ; Pineda JA; Vidal F; Berenguer J | Executive summary of the Consensus Document of GeSIDA and Spanish Secretariat for the National Plan on AIDS on combined antiretroviral treatment in adults infected by the human immunodeficiency virus (January 2013) | Enfermedades Infecciosas y Microbiología Clínica |

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF HIV AND ASSOCIATED CONDITIONS

Publications

Total impact factor: 74.4

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

- Fernández-Rodríguez A; Berenguer J; Jiménez-Sousa MA; Guzman-Fulgencio M; Micheloud D; Miralles P; López JC; Bellon JM; Aldamiz-Echevarria T; García-Broncano P; Carrero A.; Prediction of Hepatic Fibrosis in Patients Coinfected With HIV and Hepatitis C Virus Based on Genetic Markers. JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. 2013; 64(5) 434-442. IF: 4.394. Quartile: 1.
- Blasco AJ; Llibre JM; Arribas JR; Boix V; Clotet B; Domingo P; González-Garcia J; Knobel H; López JC; Lozano F; Miro JM; Podzamczer D; Santamaría JM; Tusset M; Zamora L; Lázaro P; Gatell JM. Analysis of costs and cost-effectiveness of preferred GESIDA/National AIDS Plan regimens for initial antiretroviral therapy in human immunodeficiency virus infected adult patients in 2013. ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2013; 31(9) 568-578. IF: 1.881. Quartile: 3.
- Guzmán-Fulgencio M; Berenguer J; García-Álvarez M; Fernandez-Rodríguez A; Jiménez-Sousa MA; Álvarez E; Micheloud D; López JC; Miralles P; Cosin J; Catalán P; Resino S. IL28B polymorphisms are associated with severity of liver disease in human immunodeficiency virus (HIV) patients coinfecte with hepatitis C virus. JOURNAL OF INFECTION. 2013; 66(2) 170-178. IF: 4.017. Quartile: 1.
- Teira R; Suárez-Lozano I; Lozano F; Viciana P; Domingo P; Galindo P; Geijo P; Terrón A; Cosin J; Ribera E; Roca B; García-Alcalde ML; Sánchez T; Muñoz-Sanz A; Romero A; López-Aldeguer J; Pedrol E; Vidal F; Garrido M; Muñoz P; Puig T; Deig E; Estrada V; Ca. Hepatitis-B virus infection predicts mortality of HIV and hepatitis C virus coinfecte patients. AIDS. 2013; 27(5) 845-848. IF: 6.557. Quartile: 1.
- Domingo P; Polo R; Lozano F; Aldeguer JL; Aguirrebengoa K; Estrada V; Gutiérrez F; Knobel H; Llibre JM; Miralles C; Miro JM; Rivero A; Santos J; Tusset M; Antela A; Asensi V; Arribas JR; Blanco JR; Boix V; García F; Gatell JM; Mallolas J; Martínez E; More. Executive summary of the Consensus Document of GeSIDA and Spanish Secretariat for the National Plan on AIDS on combined antiretroviral treatment in adults infected by the human immunodeficiency virus (January 2013). ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2013; 31(9) 604-613. IF: 1.881. Quartile: 3.
- Ribera E; Larrousse M; Curran A; Negredo E; Clotet B; Estrada V; Sanz J; Berenguer J; Rubio R; Pulido F; Ferrer P; Alvarez ML; Arterburn S; Martínez E. Impact of switching from zidovudine/lamivudine to tenofovir/emtricitabine on lipotrophy: the RECOMB study. HIV MEDICINE. 2013; 14(6) 327-336. IF: 3.454. Quartile: 2.
- Ribera JM; García O; Grande C; Esteve J; Oriol A; Bergua J; González-Campos J; Vall-llovera F; Tormo M; Hernández-Rivas JM; García D; Brunet S; Alonso N; Barba P; Miralles P; Llorente A; Montesinos P; Moreno MJ; Hernández-Rivas JA; Bernal T. Dose-Intensive Chemotherapy Including Rituximab in Burkitt's Leukemia or Lymphoma Regardless of Human Immunodeficiency Virus Infection Status Final Results of a Phase 2 Study (Burkimab). CANCER. 2013; 119(9) 1660-1668. IF: 4.901. Quartile: 1.
- Guzmán-Fulgencio M; Berenguer J; Rallon N; Fernández-Rodríguez A; Miralles P; Soriano V; Jiménez-Sousa MA; Cosin J; Medrano J; García-Álvarez M; López JC; Benito JM; Resino S. HLA-E variants are associated with sustained virological response in HIV/hepatitis C virus-coinfected patients on hepatitis C virus therapy. AIDS. 2013; 27(8) 1231-1238. IF: 6.557. Quartile: 1.
- Fernández-Rodríguez A; Rallon N; Berenguer J; Jiménez-Sousa MA; Cosin J; Guzmán-Fulgencio M; Restrepo C; Lopez JC; Garcia-Álvarez M; Miralles P; Soriano V; Benito JM; Resino S. Analysis of IL28B alleles with virologic response patterns and plasma cytokine levels in HIV/HCV-coinfected patients. AIDS. 2013; 27(2) 163-173. IF: 6.557. Quartile: 1.
- García-Álvarez M; Berenguer J; Álvarez E; Guzmán-Fulgencio M; Cosin J; Miralles P; Catalan P; Lopez JC; Rodríguez JM; Micheloud D; Muñoz-Fernández MA; Resino. Association of torque teno virus (TTV) and torque teno mini virus (TTMV) with liver disease among patients coinfecte with human immunodeficiency virus and hepatitis C virus. EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY &

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF HIV AND ASSOCIATED CONDITIONS

INFECTIOUS DISEASES. 2013; 32(2) 289-297. IF: 2.544. Quartile: 2.

- Berenguer J; Álvarez-Pellicer J; Carrero A; Von Wichmann MA; López-Aldeguer J; Mallolas J; Galindo MJ; Van den Eynde E; Tellez MJ; Quereda C; Tural C; Sanz J; Barros C; Santos I; Pulido F; Guardiola JM; Ortega E; Rubio R; Jusdado JJ; Montes ML; Ga. Clinical effects of viral relapse after interferon plus ribavirin in patients co-infected with human immunodeficiency virus and hepatitis C virus. JOURNAL OF HEPATOLOGY. 2013; 58(6) 1104-1112. IF: 10.401. Quartile: 1.

• Masia M; Padilla S; Álvarez D; López JC; Santos I; Soriano V; Hernández-Quero J; Santos J; Tural C; del Amo J; Gutiérrez F. Risk, predictors, and mortality associated with non-AIDS events in newly diagnosed HIV-infected patients: role of antiretroviral therapy. AIDS. 2013; 27(2) 181-189. IF: 6.557. Quartile: 1.

• Pedrol E; de Quiros JCLB; Ruiz S; Hevia H; Ledesma F. Reasons for the introduction of darunavir in the antiretroviral treatment in HIV-infected patients. REVISTA ESPANOLA DE QUIMIOTERAPIA. 2013; 26(2) 103-107. IF: 0.905. Quartile: 4.

• Jiménez-Sousa MA; Berenguer J; Rallon N; Guzmán-Fulgencio M; López JC; Soriano V; Fernández-Rodríguez A; Cosin J; Restrepo C; García-Álvarez M; Miralles P; Benito JM; Resino S. IL28RA polymorphism is associated with early hepatitis C virus (HCV) treatment failure in human immunodeficiency virus-/HCV-coinfected patients. JOURNAL OF VIRAL HEPATITIS. 2013; 20(5) 358-366. IF: 3.307. Quartile: 2.

• Serrano D; Miralles P; Balsalobre P; Kwon M; Rodriguez-Macias G; Gayoso J; Anguita J; Buno I; Berenguer J. Graft-Versus-Tumor Effect After Allogeneic Stem Cell Transplantation in HIV-Positive Patients With High-Risk Hematologic Malignancies. AIDS RESEARCH AND HUMAN RETROVIRUSES. 2013; 29(10) 1340-1345. IF: 2.457. Quartile: 3.

• Hernando V; Alejos B; Monge S; Berenguer J; Anta L; Vinuesa D; Palacios R; Muga R; Moreno S; Jarrín I. All-cause mortality in the cohorts of the Spanish AIDS Research Network (RIS) compared with the general population: 1997-2010. BMC INFECTIOUS DISEASES. 2013; 13. IF: 2.561. Quartile: 2.

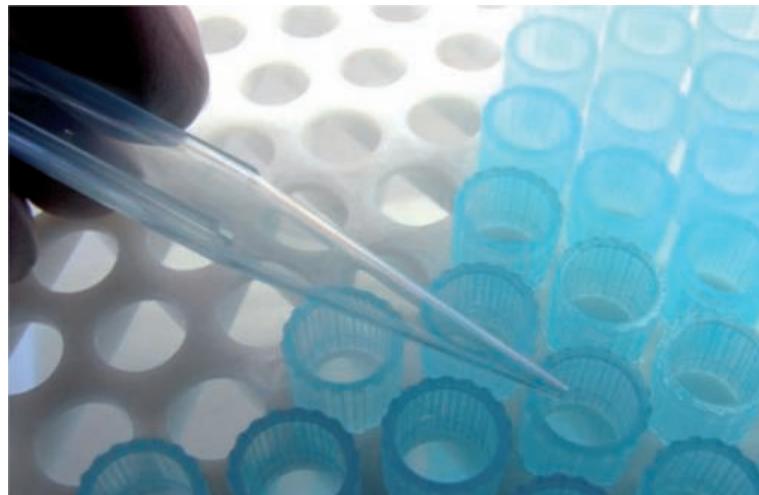
- Guzman-Fulgencio M; Berenguer J; Micheloud D; Fernandez-Rodriguez A; Garcia-Alvarez M; Jimenez-Sousa MA; Bellon JM; Campos Y; Cosin J; Aldamiz-Echevarria T; Catalan P; Lopez JC. European mitochondrial haplogroups are associated with CD4+T cell recovery in HIV-infected patients on combination antiretroviral therapy. JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY. 2013; 68(10) 2349-2357. IF: 5.439. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 2 | 12.3 |
| Joint publications | 15 | 62.1 |
| First-decile publications | 6 | 42.1 |
| First-quartile publications | 9 | 55.4 |
| Second-quartile publications | 4 | 11.9 |
| Third-quartile publications | 3 | 6.2 |
| Fourth-quartile publications | 1 | 0.9 |
| Nonindexed publications | 0 | - |
| Total publications | 17 | 74.4 |

BIOLOGICAL AGGRESSION AFTER HEART SURGERY

Group Director: Dr. Francisco Javier Hortal Iglesias

Group type: Associated



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 : 8.3

Publicaciones en revistas indexadas en el Journal Citation Reports con Factor de Impacto:

- Granda MJP; Barrio JM; Hortal J; Munoz P; Rincon C; Bouza E. Routine aspiration of subglottic secretions after major heart surgery: impact on the incidence of ventilator-associated pneumonia. JOURNAL OF HOSPITAL INFECTION. 2013; 85(4) 312-315. IF: 2.782. Quartile: 2.
- Bouza E; Granda MJP; Hortal J; Barrio JM; Cercenado E; Munoz P. Pre-emptive broad-spectrum treatment for ventilator-associated pneumonia in high-risk patients. INTENSIVE CARE MEDICINE. 2013; 39(9) 1547-1555. IF: 5.544. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 2 | 8.3 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 5.5 |
| Second-quartile publications | 1 | 2.8 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 8.3 |



AREA 5

Diseases of the Immune System

Area Coordinator:
Dr. Eduardo Fernández-Cruz Pérez

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, 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 the strategic lines for its continued growth. As a result, collaboration agreements have been proposed with prestigious international institutions, groups from the Institute itself, and groups from outside the Institute (Madrid Science and Technology Park, FHL Study Group, Transfusion Center of Comunidad de Madrid), School of Medicine of Universidad Complutense de Madrid (Department of Microbiology I), and companies that are 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 AXES AND LINES

Strategic axes

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

Strategic lines

Axis 1: Promotion of partnerships and collaborations in immunology.

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

Strategic objectives

- Report on 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

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

4. Cooperation with clinical groups in rheumatology.

Strategic objectives

- Participate in established cooperative research structures (RIER).
- Biomedicina / 2010 CM Programa REUMATOLOGÍA.

RESEARCH AXES AND LINES

Strategic lines

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 trial on production of antibodies).

4. Consolidation of research lines with public or private funding.

Strategic objectives

- Apply for calls for funding in the National Plan
- Apply for funding from private institutions.
- Promote research agreements and contracts with public and private institutions at national and international level.

5. Continued 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 primary immunodeficiency registries.

RESEARCH AXES AND LINES

Strategic lines

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 residents and trainees in the preparation of manuscripts.
- Present the Master of Advanced Studies and 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-evaluate the laboratory.
- Obtain certification by category. Allow a flexible scope.
- Promote activity so that the laboratory can be used to perform clinical trials.

AREA 5: GROUPS



Diseases of the immune system

- Pathophysiology and clinical investigation of chronic inflammatory and immune diseases
- Molecular biology of HIV
- Immuno-oncology
- Autoimmune systemic diseases
- Infections in the pediatric population
- Immunology of HIV infection in the pediatric population
- Pathogenesis of the immunoallergic response
- Allergic diseases in the pediatric population

PHYSIOPATHOLOGY AND CLINICAL INVESTIGATION OF CHRONIC INFLAMMATORY AND IMMUNE DISEASES

Group Director: Dr. Eduardo Fernández-Cruz Pérez

Group 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.

Research programs and lines

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 (repeated abortion, IVF, obstetric antiphospholipid antibody syndrome): immunomodulation.

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

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

PHYSIOPATHOLOGY AND CLINICAL INVESTIGATION OF CHRONIC INFLAMMATORY AND IMMUNE DISEASES

Group members

- **Javier Alberto Carbone Campoverde:** Principal investigator
- **Eduardo Fernández-Cruz Pérez:** Group director
- **Juana Gil Herrera:** Principal investigator
- **Joaquín Navarro Caspistegui:** Postdoctoral
- **Ricardo Ramos Ruiz:** Predoctoral
- **Margarita Rodríguez Mahou:** Postdoctoral
- **Juan José Rodríguez Molina:** Postdoctoral
- **Carmen Rodríguez Sáinz:** Postdoctoral
- **Silvia Sánchez Ramón:** Postdoctoral
- **Elizabeth Angélica Sarmiento Marchese:** Postdoctoral

Research Projects – Competitive Calls

Principal investigator: Javier Alberto Carbone Campoverde
Title: Evaluación de la eficacia y toxicidad del uso de gammaglobulina intravenosa en el tratamiento de infecciones en pacientes con hipogammaglobulinemia IGG post-trasplante de órgano sólido.
Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad
Start date: 2012
End date: 2013

Principal investigator: Silvia Sánchez Ramón
Title: Biomarcadores de las formas clínicas de esclerosis múltiple: desarrollo de estrategias personalizadas basadas en perfiles inmunológicos de la vía del interferón de tipo I.
Funding body: F. Mapfre Medicina
Start date: 2012
End date: 2013

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

Principal investigator: Javier Alberto Carbone Campoverde

Title: Estudio de reconstitución de la inmunidad humoral específica tras uso de gammaglobulina intravenosa para la prevención de infecciones en pacientes con hipogammaglobulemia IGG tras el trasplante cardiaco.

Funding body: F. Mutua Madrileña

Start date: 2013

End date: 2014

Publications

Total impact factor: 36.1

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

- Lasarte S; Elsner D; Guia-Gonzalez M; Ramos-Medina R; Sanchez-Ramon S; Esponda P; Munoz-Fernandez M; Rellosa M. Female sex hormones regulate the Th17 immune response to sperm and Candida albicans. HUMAN REPRODUCTION. 2013; 28(12) 3283-3291. IF: 4.585. Quartile: 1.
- Ramos-Medina R; Garcia-Segovia A; Leon JA; Alonso B; Tejera-Alhambra M; Gil J; Caputo JD; Seyfferth A; Aguaron A; Vicente A; Ordonez D; Alonso J; de Albornoz EC; Carbone J; Caballero P; Fernandez-Cruz E; Ortiz-Quintana L; New Decision-Tree Model for Defining the Risk of Reproductive Failure. AMERICAN JOURNAL OF REPRODUCTIVE IMMUNOLOGY. 2013; 70(1) 59-68. IF: 2.668. Quartile: 2.
- Rodriguez-Sainz C; Valor L; Hernandez DC; Gil J; Carbone J; Pascual-Bernaldez M; Rodriguez-Alcantara F; Martinez I; Vicario

PHYSIOPATHOLOGY AND CLINICAL INVESTIGATION OF CHRONIC INFLAMMATORY AND IMMUNE DISEASES

JL; Mallal S; Fernandez-Cruz E. Flow Cytometry Analysis with a New FITC-Conjugated Monoclonal Antibody-3E12 for HLA-B*57:01 Rapid Screening in Prevention of Abacavir Hypersensitivity in HIV-1-Infected Patients. *HIV CLINICAL TRIALS.* 2013; 14(4) 160-164. IF: 2.141. Quartile: 3.

- Eguiluz-Gracia I; Fernandez-Cruz E; Carbone J. High Prevalence of Allergy-Like Respiratory Diseases in Common Variable Immunodeficiency. *JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY.* 2013; 23(3) 209-211. IF: 2.642. Quartile: 3.

- Lanio N; Sarmiento E; Gallego A; Calahorra L; Jaramillo M; Navarro J; Palomo J; Fernandez-Yanez J; Ruiz M; Fernandez-Cruz E; Carbone J. Alterations of naive and memory B-cell subsets are associated with risk of rejection and infection in heart recipients. *TRANSPLANT INTERNATIONAL.* 2013; 26(8) 800-812. IF: 3.12. Quartile: 1.

- Pérez EFC; Rodriguez-Sainz C. Poliovirus Immunology: Vaccines, Problems for the Prevention/Eradication and Future Interventions. *REVISTA ESPAÑOLA DE SALUD PUBLICA.* 2013; 87(5) 443-454. IF: 0.6. Quartile: 4.

- Sánchez-Ramón S; Eguiluz-Gracia I; Rodríguez-Mazariego ME; Paravissini A; Zubeldia-Ortuno JM; Gil-Herrera J; Fernandez-Cruz E; Suarez-Fernandez R. Sequential Combined Therapy With Omalizumab and Rituximab: A New Approach to Severe Atopic Dermatitis. *JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY.* 2013; 23(3) 190-196. IF: 2.642. Quartile: 3.

- Abete P; Adlbrecht C; Assimakopoulos SF; Cote N; Dullaart RPF; Evsyukova HV; Fang TC; Goswami N; Hinghofer-Szalkay H; Ho YL; Hoebaus C; Hulsmann M; Indridason OS; Kholova I; Lin YH; Maniscalco M; Mathieu P; Mizukami H; Ndrepepa G; Roessler A; Sanchez-Ramo. Research update for articles published in EJCI in 2011. *EUROPEAN JOURNAL OF CLINICAL INVESTIGATION.* 2013; 43(10) 1097-1110. IF: 2.834. Quartile: 1. Neuroinmunología.

- Wong GK; Goldacker S; Winterhalter C; Grimbacher B; Chapel H; Lucas M; Alecsandru D; McEwen D; Quinti I; Martini H; Schmidt RE; Ernst D; Espanol T; Vidaller A; Carbone J; Fernandez-Cruz E;

Lougaris V; Plebani A; Kutukculer N; Gonzalez-Granado LI; Outcomes of splenectomy in patients with common variable immunodeficiency (CVID): a survey of 45 patients. *CLINICAL AND EXPERIMENTAL IMMUNOLOGY.* 2013; 172(1) 63-72. IF: 3.278. Quartile: 2.

- Aguilera-Montilla N; Chamorro S; Nieto C; Sanchez-Cabo F; Dopazo A; Fernandez-Salguero PM; Rodriguez-Fernandez JL; Pello OM; Andres V; Cuenda A; Alonso B; Dominguez-Soto A; Sanchez-Ramon S; Corbi AL. Aryl hydrocarbon receptor contributes to the MEK/ERK-dependent maintenance of the immature state of human dendritic cells. *BLOOD.* 2013; 121(15) E108-E117. IF: 9.775. Quartile: 1.
- Lanio N; Sarmiento E; Gallego A; Navarro J; Palomo J; Fernandez-Yanez J; Ruiz M; Fernandez-Cruz E; Carbone J. Kinetics of functionally distinct T-lymphocyte subsets in heart transplant recipients after induction therapy with anti-CD25 monoclonal antibodies. *TRANSPLANT IMMUNOLOGY.* 2013; 28(4) 176-182. IF: 1.832. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 7 | 15.6 |
| Joint publications | 4 | 20.5 |
| First-decile publications | 2 | 14.4 |
| First-quartile publications | 4 | 20.3 |
| Second-quartile publications | 2 | 5.9 |
| Third-quartile publications | 4 | 9.3 |
| Fourth-quartile publications | 1 | 0.6 |
| Nonindexed publications | 0 | - |
| Total publications | 11 | 36.1 |

MOLECULAR BIOLOGY OF HIV

Group Director: Dr. M^a Ángeles Muñoz Fernández

Type: Consolidated

Research lines and programs

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

- Esther Alonso García: FIPSE
- Susana Álvarez Losada: Postdoctoral
- María Isabel Clemente Mayoral: ISCIII Support technician
- Irene Consuegra Fernández: RETICS
- Laura Díaz Muñoz: ISCIII Support technician
- Sara Ferrando Martínez: Sara Borrell
- Jorge Luis Gallego de la Fuente: Support technician
- Dolores García Alonso: Support technician
- Isabel María García Merino: RETICS
- Coral Gómez Rico: Support technician

- Santiago Jiménez de Ory: RETICS
- Jose Luis Jiménez Fuentes: Stable
- Sandra Lasarte Ramiro: Support technician
- Marta Martínez Bonet: PFIS
- M^a Ángeles Muñoz Fernández: Senior researcher
- Paula Palau Concejo: RETICS
- Ana Judith Perise Barrios: Postdoctoral
- Marjorie Pion: Ramón y Cajal
- Miguel Reloso Cereceda: Miguel Servet
- Begoña Santiago García: Rio Hortega
- Daniel Sepúlveda Crespo: Predoctoral
- M^a Jesús Serramía Lobera: Support technician
- Daniel Tornero Prieto: Sara Borrell
- Enrique Vacas Córdoba: Postdoctoral

Research Projects – Competitive Calls

Principal investigator: Muñoz Fernandez, M^a Angeles

Title: Nueva aproximación inmunoterapéutica en la infección por el VIH basada en la nanotecnología. Modelo murino con dendriplexes candidatos a vacunas para el VIH-1.

Funding body: F. Eugenio Rodríguez Pascual

Start date: 2013

End date: 2013

Principal investigator: Muñoz Fernandez, M^a Angeles

Title: Cohorte nacional de infección pediátrica por VIH (Corispe). Fundación para la Investigación y la Prevención del Sida en España 361910/10

Funding body: Fundación para la Investigación y la Prevención del Sida en España

Start date: 2011

End date: 2013

Principal investigator: Reloso Cereceda, Miguel

Title: Estudio del mecanismo molecular anti-inflamatorio del estradiol para buscar nuevas dianas terapéuticas.

Funding body: F. Mutua Madrileña

MOLECULAR BIOLOGY OF HIV

Start date: 2011
End date: 2014

Principal investigator: Reloso Cereceda, Miguel
Title: Estudio de la regulación hormonal sobre el papel microbicida de los neutrófilos en candidiasis.

Funding body: F. Mutua Madrileña
Start date: 2012
End date: 2013

Principal investigator: Muñoz Fernandez, M^a Angeles
Title: Estudio Fundación para la Investigación y la Prevención del Sida en España sobre trasplante hepático en pacientes infectados por el VIH en España. Estudio GESIDA 45-05.

Funding body: Fundación para la Investigación y la Prevención del Sida en España
Start date: 2008
End date: 2013

Principal investigator: Reloso Cereceda, Miguel
Title: Estudio del papel conciliador de las hormonas sexuales femeninas entre la reproducción y la inmunidad.
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Jimenez Fuentes, Jose Luis
Title: Dendrímeros carbosilanos aniónicos con efecto antiinflamatorio como posibles microbiocidas frente VIH.
Funding body: Instituto de Salud Carlos III
Start date: 2012
End date: 2014

Principal investigator: Pion , Marjorie
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: Muñoz Fernandez, M^a Angeles
Title: Desarrollo y mecanismo de acción de dendrimeros 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: Muñoz Fernandez, M^a Angeles
Title: Red de Sida (RIS).
Funding body: Instituto de Salud Carlos III
Funding body: 2013
End date: 2014

Principal investigator: Muñoz Fernandez, M^a Angeles
Title: proyecto indisnet. programa i+d comunitaria de madrid “redes moleculares y celulares en enfermedades inflamatorias”.

Funding body: Comunidad de Madrid
Start date: 2012
End date: 2015

Principal investigator: Jimenez Fuentes, Jose Luis
Title: Proyecto nanodendmed. Programa i+d comunidad 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: Reloso Cereceda, Miguel
Title: Proyecto fis 2013. 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

MOLECULAR BIOLOGY OF HIV

Tesis

| Doctoral student | Title | Director | University |
|----------------------------|--|--|--------------------------------|
| Sandra García Gallego | Síntesis de complejos metálicos basados en ligandos nitrogenados polianiónicos. Aplicaciones como agentes antivirales | Francisco Javier de la Mata de la Mata, M ^a Ángeles Muñoz Fernández | Universidad Alcalá de Henares |
| Isabel María García Merino | Importancia en la investigación de un biobanco especializado en muestras y datos de pacientes infectados por el virus de la inmunodeficiencia humana (VIH) | M. Ángeles Muñoz Fernández, Manuel Fresno Escudero | Universidad Autónoma de Madrid |
| Ana Judith Perisé Barrios | Efecto del VIH-1 en la desregulación de los linfocitos B. Papel de dendrímeros carbosilano en la respuesta inflamatoria, como agentes transfectantes y en la polarización de macrófagos de tipo M2 | M. Ángeles Muñoz Fernández, Marjorie Pion, Manuel Fresno Escudero | Universidad Autónoma de Madrid |
| Enrique Vacas Córdoba | Nanotecnología y VIH: Aplicación de dendrímeros en estrategias terapéuticas y preventivas frente a la infección | M ^a Ángeles Muñoz Fernández, Marjorie Pion | Universidad Autónoma de Madrid |

Patentes

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.

Inventors: 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, M^a Ángeles Muñoz-Fernández, Verónica Briz Sebastián, M^a Jesús Serramía Lobera, Conchita Tros de llarduya.

Title: Dendrímeros carbosilanos con un núcleo polifenólico y su uso como antivirales

Reference: P201030450

Owner: UAH - HGUGM

Inventors: Francisco Javier De La Mata, Rafael Gómez Ramírez, Javier Sánchez-Nieves Fernández, Paula Ortega López, M^a Ángeles Muñoz-Fernández, Louis Chonco Jiménez, M^a Jesús Serramía Lobera.

Title: Dendrímeros carbosilanos y su uso como antivirales

Reference: P201030233; WO2011101520; PCT/ES/2011/070104; EP 11719842.4; USA13/579,849; Australia 2011217142; China 201180010129,5; Japón 20120553360

Owner: UAH - HGUGM

Inventors: Francisco Javier De La Mata, Rafael Gómez Ramírez, M^a Ángeles Muñoz-Fernández, Javier Sánchez-Nieves Fernández, Beatriz Rasines Moreno, Louis Chonco Jiménez, Eduardo Arnaiz Garrido, M^a Jesús Serramía Lobera.

Title: Compuestos dendríticos carbosilanos homo y heterofuncionalizados

Reference: P201231187; PCT/ES2009/070456

Owner: UAH - HGUGM

Inventors: Francisco Javier de la Mata, Rafael Gómez Ramírez, M^a 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, Cornelia Peña González, M^a Jesús Serramía Lobera, Rosa Reguera.

MOLECULAR BIOLOGY OF HIV

Creation of a technology-based company

Name: AMBIOX BIOTECH, S.L.

Description: Ambiox Biotech is characterized by its entrepreneurial spirit, innovation, and social commitment. Its mission is to apply innovative developments in biomedical nanotechnology and thus bring 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 building the bridge 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.



Publications

Total impact factor: 139.7

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

- Diaz-Sanchez A; Matilla A; Nunez O; Rincon D; Lorente R; Lo Iacono O; Merino B; Hernando A; Campos R; Clemente G; Banares R. Serum level of soluble vascular cell adhesion molecule in patients with hepatocellular carcinoma and its association with severity of liver disease. *ANNALS OF HEPATOLOGY*. 2013; 12(2) 236-247. IF: 2.193. Quartile: 3.
- Pedziwiatr-Werbicka E; Fuentes E; Dzmitruk V; Sanchez-Nieves J; Sudas M; Drozd E; Shakhbazau A; Shcharbin D; de la Mata FJ; Gomez-Ramirez R; Munoz-Fernandez MA; Bryszewska M. Novel 'Si-C' carbosilane dendrimers as carriers for anti-HIV nucleic acids: Studies on complexation and interaction with blood cells. *COLLOIDS AND SURFACES B-BIOINTERFACES*. 2013; 109: 183-189. IF: 4.287. Quartile: 1.
- Sainz T; Serrano-Villar S; Diaz L; Tome MIG; Gurbindo MD; de Jose MI; Mellado MJ; Ramos JT; Zamora J; Moreno S; Munoz-Fernandez MA. The CD4/CD8 ratio as a marker T-cell activation, senescence and activation/exhaustion in treated HIV-infected children and young adults. *AIDS*. 2013; 27(9) 1513-1516. IF: 6.557. Quartile: 1.
- Alvarez S; Munoz-Fernandez MA. TNF-A May Mediate Inflammasome Activation in the Absence of Bacterial Infection in More than One Way. *PLOS ONE*. 2013; 8(8). IF: 3.534. Quartile: 1.
- Martinez-Colom A; Lasarte S; Fernandez-Pineda A; Reloso M; Munoz-Fernandez MA. A new chimeric protein represses HIV-1 LTR-mediated expression by DNA methylase. *ANTIVIRAL RESEARCH*. 2013; 98(3) 394-400. IF: 3.434. Quartile: 1.
- Serrano-Villar S; Gutierrez C; Vallejo A; Hernandez-Novoa B; Diaz L; Fernandez MA; Madrid N; Dronda F; Zamora J; Munoz-Fernandez MA; Moreno S. The CD4/CD8 ratio in HIV-infected subjects is independently associated with T-cell activation despite long-term viral suppression. *JOURNAL OF INFECTION*. 2013; 66(1) 57-66. IF: 4.017. Quartile: 1.

MOLECULAR BIOLOGY OF HIV

- Ionov M; Ciepluch K; Moreno BR; Appelhans D; Sanchez-Nieves J; Gomez R; de la Mata FJ; Munoz-Fernandez MA; Bryszewska M. Biophysical Characterization of Glycodendrimers As Nano-carriers for HIV Peptides. *CURRENT MEDICINAL CHEMISTRY*. 2013; 20(31) 3935-3943. IF: 3.715. Quartile: 1.
- Palladino C; Briz V; Bellon JM; Bartolo I; Carvalho P; Camacho R; Munoz-Fernandez MA; Bastoss R; Manuels R; Casanovas J; Taveira N. Predictors of Attrition and Immunological Failure in HIV-1 Patients on Highly Active Antiretroviral Therapy from Different Healthcare Settings in Mozambique. *PLOS ONE*. 2013; 8(12). IF: 3.534. Quartile: 1.
- Munoz-Fernandez MA; Merino IG; Consuegra I; Jimenez JL. The Spanish HIV HGM BioBank (SHIVBB). *BIOPRESERVATION AND BIOBANKING*. 2013; 11(4) 253-254. IF: 1.578. Quartile: 3.
- Lasarte S; Elsner D; Sanchez-Elsner T; Fernandez-Pineda A; Lopez-Fernandez LA; Corbi AL; Munoz-Fernandez MA; Reloso M. Estradiol downregulates NF-kappa b translocation by Ikbkg transcriptional repression in dendritic cells. *GENES AND IMMUNITY*. 2013; 14(7) 462-469. IF: 3.789. Quartile: 2.
- Abad-Fernandez M; Vallejo A; Hernandez-Novoa B; Diaz L; Gutierrez C; Madrid N; Munoz MA; Moreno S. Correlation Between Different Methods to Measure Microbial Translocation and Its Association With Immune Activation in Long-Term Suppressed HIV-1-Infected Individuals. *JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES*. 2013; 64(2) 149-153. IF: 4.394. Quartile: 1.
- Gordon-Alonso M; Rocha-Perugini V; Alvarez S; Ursa A; Izquierdo-Useros N; Martinez-Picado J; Munoz-Fernandez MA; Sanchez-Madrid F. Actin-binding Protein Drebrin Regulates HIV-1-triggered Actin Polymerization and Viral Infection. *JOURNAL OF BIOLOGICAL CHEMISTRY*. 2013; 288(39) 28382-28397. IF: 4.6. Quartile: 1.
- Dapena M; Figueras C; Noguera-Julian A; Fortuny C; de Jose MI; Mellado MJ; Gavilan C; Falcon-Neyra MD; Navarro ML; de Ory SJ; Lopez C; Mayol L; Mendez M; Ciria LM; Coll MT; Garcia L; Nunez E; Espiau M; Soler-Palacin P. Implementation of Occult Hepatitis Screening in the Spanish Cohort of HIV-infected Pediatric Patients. *PEDIATRIC INFECTIOUS DISEASE JOURNAL*. 2013; 32(9) E377-E379. IF: 3.135. Quartile: 1.
- Guzman-Fulgencio M; Jimenez JL; Garcia-Alvarez M; Bellon JM; Fernandez-Rodriguez A; Campos Y; Rodriguez C; Gonzalez-Garcia J; Riera M; Viciana P; Munoz-Fernandez MA; Resino S. Mitochondrial Haplogroups Are Associated With Clinical Pattern of AIDS Progression in HIV-Infected Patients. *JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES*. 2013; 63(2) 178-183. IF: 4.394. Quartile: 1.
- Hauptmann N; Pion M; Munoz-Fernandez MA; Komber H; Werner C; Voit B; Appelhans D. Ni(II)-NTA Modified Poly(ethylene imine) Glycopolymers: Physicochemical Properties and First In Vitro Study of Polyplexes Formed with HIV-Derived Peptides. *MACROMOLECULAR BIOSCIENCE*. 2013; 13(5) 531-538. IF: 3.65. Quartile: 1.
- Samaniego R; Estecha A; Reloso M; Longo N; Escat JL; Longo-Imedio I; Aviles JA; del Pozo MA; Puig-Kroger A; Sanchez-Mateos P. Mesenchymal Contribution to Recruitment, Infiltration, and Positioning of Leukocytes in Human Melanoma Tissues. *JOURNAL OF INVESTIGATIVE DERMATOLOGY*. 2013; 133(9) 2255-2264. IF: 6.372. Quartile: 1.
- Tolentino-Lopez L; Segura-Cabrera A; Reyes-Loyola P; Zimic M; Quiliano M; Briz V; Munoz-Fernandez A; Rodriguez-Perez M; Ilizaliturri-Flores I; Correa-Basurto J. Outside-binding site mutations modify the active site's shapes in neuraminidase from influenza A H1N1. *BIOPOLYMERS*. 2013; 99(1) 10-21. IF: 2.288. Quartile: 3.
- Ferrando-Martinez S; Romero-Sanchez MC; Solana R; Delgado J; de la Rosa R; Munoz-Fernandez MA; Ruiz-Mateos E; Leal M. Thymic function failure and C-reactive protein levels are independent predictors of all-cause mortality in healthy elderly humans. *AGE*. 2013; 35(1) 251-259. IF: 3.445. Quartile: 1.
- Gutierrez C; Hernandez-Novoa B; Vallejo A; Serrano-Villar S; Abad-Fernandez M; Madrid N; Diaz L; Moreno A; Dronda F; Zamora J; Munoz-Fernandez MA; Moreno S. Dynamics of the HIV-1 latent reservoir after discontinuation of the intensification of antiretroviral treatment: results of two clinical trials. *AIDS*. 2013; 27(13) 2081-2088. IF: 6.557. Quartile: 1.

MOLECULAR BIOLOGY OF HIV

- Pion M; Jaramillo-Ruiz D; Martinez A; Munoz-Fernandez MA; Correa-Rocha R. HIV infection of human regulatory T cells downregulates Foxp3 expression by increasing DNMT3b levels and DNA methylation in the FOXP3 gene. *AIDS*. 2013; 27(13) 2019-2029. IF: 6.557. Quartile: 1.
- Sanchez-Nieves J; Perise-Barrios AJ; Ortega P; Corbi AL; Dominguez-Soto A; Munoz-Fernandez MA; Gomez R; de la Mata FJ. Study of cationic carbosilane dendrimers as potential activating stimuli in macrophages. *RSC ADVANCES*. 2013; 3(45) 23445-23453. IF: 3.708. Quartile: 1.
- Garcia-Alvarez M; Berenguer J; Alvarez E; Guzman-Fulgencio M; Cosin J; Miralles P; Catalan P; Lopez JC; Rodriguez JM; Micheloud D; Munoz-Fernandez MA; Resino. Association of torque teno virus (TTV) and torque teno mini virus (TTMV) with liver disease among patients coinfected with human immunodeficiency virus and hepatitis C virus. *EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES*. 2013; 32(2) 289-297. IF: 2.544. Quartile: 2.
- Diaz-Sanchez A; Matilla A; Nunez O; Lorente R; Fernandez A; Rincon D; Campos R; Banares R; Clemente G. Serum angiopoietin-2 level as a predictor of tumor invasiveness in patients with hepatocellular carcinoma. *SCANDINAVIAN JOURNAL OF GASTROENTEROLOGY*. 2013; 48(3) 334-343. IF: 2.329. Quartile: 3.
- Loyola PKR; Campos-Rodriguez R; Bello M; Rojas-Hernandez S; Zimic M; Quiliano M; Briz V; Munoz-Fernandez MA; Tolentino-Lopez L; Correa-Basurto J. Theoretical analysis of the neuraminidase epitope of the Mexican A/H1N1 influenza strain, and experimental studies on its interaction with rabbit and human hosts. *IMMUNOLOGIC RESEARCH*. 2013; 56(1) 44-60. IF: 3.525. Quartile: 2.
- Cordoba EV; Arnaiz E; De La Mata FJ; Gomez R; Leal M; Pion M; Munoz-Fernandez MA. Synergistic activity of carbosilane dendrimers in combination with maraviroc against HIV in vitro. *AIDS*. 2013; 27(13) 2053-2058. IF: 6.557. Quartile: 1.
- Cordoba EV; Arnaiz E; Relloso M; Sanchez-Torres C; Garcia F; Perez-Alvarez L; Gomez R; de la Mata FJ; Pion M; Munoz-Fernandez MA. Development of sulphated and naphthylsulphonated carbosilane dendrimers as topical microbicides to prevent HIV-1 sexual transmission. *AIDS*. 2013; 27(8) 1219-1229. IF: 6.557. Quartile: 1.
- Cordoba EV; Pion M; Rasines B; Filippini D; Komber H; Ionov M; Bryszewska M; Appelhans D; Munoz-Fernandez MA. Glycodendrimers as new tools in the search for effective anti-HIV DC-based immunotherapies. *NANOMEDICINE-NANOTECHNOLOGY BIOLOGY AND MEDICINE*. 2013; 9(7) 972-984. IF: 5.978. Quartile: 1.
- Mendez-Lagares G; Diaz L; Correa-Rocha R; Leal JAL; Ferrando-Martinez S; Ruiz-Mateos E; Pozo-Balado MM; Gurbindo MD; de Jose MI; Munoz-Fernandez MA; Leal M; Pacheco YM. Specific patterns of CD4-associated immunosenescence in vertically HIV-infected subjects. *CLINICAL MICROBIOLOGY AND INFECTION*. 2013; 19(6) 558-565. IF: 5.197. Quartile: 1.
- Ionov M; Ciepluch K; Klajnert B; Glinska S; Gomez-Ramirez R; de la Mata FJ; Munoz-Fernandez MA; Bryszewska M. Complexation of HIV derived peptides with carbosilane dendrimers. *COLLOIDS AND SURFACES B-BIOINTERFACES*. 2013; 101: 236-242. IF: 4.287. Quartile: 1.
- Garcia-Gallego S; Cangiotti M; Fiorani L; Fattori A; Munoz-Fernandez MA; Gomez R; Ottaviani MF; de la Mata FJ. Anionic sulfonated and carboxylated PPI dendrimers with the EDA core: synthesis and characterization of selective metal complexing agents. *DALTON TRANSACTIONS*. 2013; 42(16) 5874-5889. IF: 4.097. Quartile: 1.
- de Jose MI; de Ory SJ; Espiau M; Fortuny C; Navarro ML; Soler-Palacin P; Munoz-Fernandez MA. A new tool for the paediatric HIV research: general data from the Cohort of the Spanish Paediatric HIV Network (CoRISpe). *BMC INFECTIOUS DISEASES*. 2013; 13. IF: 2.561. Quartile: 2.
- Mendez-Lagares G; Romero-Sanchez MC; Ruiz-Mateos E; Genebat M; Ferrando-Martinez S; Munoz-Fernandez MA; Pacheco YM; Leal M. Long-Term Suppressive Combined Antiretroviral Treatment Does Not Normalize the Serum Level of Soluble CD14. *JOURNAL OF INFECTIOUS DISEASES*. 2013; 207(8) 1221-1225. IF: 5.778. Quartile: 1.

MOLECULAR BIOLOGY OF HIV

- Lasarte S; Elsner D; Guia-Gonzalez M; Ramos-Medina R; Sanchez-Ramon S; Esponda P; Munoz-Fernandez M; Relloso M. Female sex hormones regulate the Th17 immune response to sperm and Candida albicans. HUMAN REPRODUCTION. 2013; 28(12) 3283-3291. IF: 4.585. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|-------|
| Own publications | 13 | 58.7 |
| Joint publications | 20 | 81.1 |
| First-decile publications | 11 | 63.8 |
| First-quartile publications | 25 | 118.9 |
| Second-quartile publications | 4 | 12.4 |
| Third-quartile publications | 4 | 8.4 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 33 | 139.7 |

IMMUNO-ONCOLOGY

Group Director: Dr. Paloma Sánchez-Mateos Rubio

Group 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

- Ana Estecha Palomero: ISCIII Support technician
- Alejandra Gutiérrez González: Predoctoral
- Amaya Rocío Puig Kröger: Miguel Servet
- Rafael Samaniego García: Support technician
- Paloma Sánchez-Mateos Rubio: Group director
- Blanca Soler Palacios
- Julia Villarejo Gómez

Research Projects – Competitive Calls

Principal investigator: Amaya Rocío Puig Kröger

Title: Polarización de macrófagos en artritis reumatoide: efecto del metotrexato.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Principal investigator: Amaya Rocío Puig Kröger

Title: Red Inflam y enfermedades reumáticas.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

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: Regulación microambiental de la migración de células tumorales e inflamatorias en modelos 3D: estudio de las interacciones ERM/microtúbulos y quimiocinas (CAME).

Organismo financiador: Ministerio de Economía y Competitividad

Start date: 2011

End date: 2013

Principal investigator: Sánchez-Mateos Rubio, Paloma

Title: Proyecto fis 2013. 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

INMUNO-ONCOLOGY

| Publications | Total impact factor: 26.3 |
|--------------|---------------------------|
|--------------|---------------------------|

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

- Bautista-Caro MB; Arroyo-Villa I; Castillo-Gallego C; de Miguel E; Peiteado D; Puig-Kroger A; Martin-Mola E; Miranda-Carus ME. Decreased Th17 and Th1 cells in the peripheral blood of patients with early non-radiographic axial spondyloarthritis: a marker of disease activity in HLA-B27(+) patients. *RHEUMATOLOGY*. 2013; 52(2) 352-362. IF: 4.435. Quartile: 1.
- de las Casas-Engel M; Dominguez-Soto A; Sierra-Filardi E; Bragado R; Nieto C; Puig-Kroger A; Samaniego R; Loza M; Corcuera MT; Gomez-Aguado F; Bustos M; Sanchez-Mateos P; Corbi AL. Serotonin Skews Human Macrophage Polarization through HTR2B and HTR7. *JOURNAL OF IMMUNOLOGY*. 2013; 190(5) 2301-2310. IF: 5.362. Quartile: 1.
- Sanchez-Martin L; Sanchez-Mateos P; Cabanas C. CXCR7 impact on CXCL12 biology and disease. *TRENDS IN MOLECULAR MEDICINE*. 2013; 19(1) 12-22. IF: 10.11. Quartile: 1.
- Samaniego R; Estecha A; Reloso M; Longo N; Escat JL; Longo-Imedio I; Aviles JA; del Pozo MA; Puig-Kroger A; Sanchez-Mateos P. Mesenchymal Contribution to Recruitment, Infiltration, and Positioning of Leukocytes in Human Melanoma Tissues. *JOURNAL OF INVESTIGATIVE DERMATOLOGY*. 2013; 133(9) 2255-2264. IF: 6.372. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 1 | 6.4 |
| Joint publications | 3 | 19.9 |
| First-decile publications | 2 | 16.5 |
| First-quartile publications | 4 | 26.3 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 26.3 |

AUTOIMMUNE SYSTEMIC DISEASES

Group Director: Dr. Luis Carreño Pérez

Type: Consolidated



Research lines

L1. Immune-mediated inflammatory diseases.

L2. Rheumatoid arthritis.

Group members

- **Elena Becerra Fernández:** Predoctoral
- **Luis Carreño Pérez:** Group director
- **Carlos Manuel González Fernández:** Postdoctoral
- **Diana Carolina Hernández Flórez:** Predoctoral
- **Francisco José López Longo:** Postdoctoral
- **Indalecio Monteagudo Sáez:** Postdoctoral
- **María Montoro Álvarez:** Predoctoral
- **Esperanza Naredo Sánchez:** Postdoctoral
- **Francisco Javier Rivera Redondo:** Postdoctoral
- **Marilyn Salvat Lago:** Predoctoral
- **Inmaculada de la Torre Ortega:** Postdoctoral
- **Larissa Elena Valor Méndez:** Postdoctoral

Research Projects – Competitive Calls

Principal investigator: Luis Carreño Pérez

Title: Remisión clínica, serología, fenotípica y ecografía en pacientes con artritis reumatoide respondedores a terapias biológicas.

Funding body: Instituto de Salud Carlos III.

Start date: 2012

End date: 2014

Patents

Title: Manual para la creación de una unidad funcional de terapias biológicas en pacientes con artritis crónicas.

Reference: 16/2013/5179

Owner: FIBHGM

Inventors: Luis Carreño, Inmaculada de la Torre, Larisa Valor, Tamara del Río, Vicente Escudero, Diana Hernández, Carmen Rodríguez.

AUTOIMMUNE SYSTEMIC DISEASES

Publications

Total impact factor: 81.2

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

- Naredo E; Valor L; De la Torre I; Martinez-Barrio J; Hinojosa M; Aramburu F; Ovalles-Bonilla JG; Hernandez D; Montoro M; Gonzalez CM; Lopez-. Ultrasound Joint Inflammation in Rheumatoid Arthritis in Clinical Remission: How Many and Which Joints Should Be Assessed?. *ARTHRITIS CARE & RESEARCH*. 2013; 65(4) 512-517. IF: 4.039. Quartile: 2.
- Terslev L; Hammer HB; Torp-Pedersen S; Szkudlarek M; Iagnocco A; D'Agostino MA; Schmidt WA; Uson J; Bruyn GA; Filippucci E; Moller I; Balint P; Wakefield R; Naredo E. EFSUMB Minimum Training Requirements for Rheumatologists Performing Musculoskeletal Ultrasound. *ULTRASCHALL IN DER MEDIZIN*. 2013; 34(5) 475-477. IF: 4.645. Quartile: 1.
- Docampo E; Collado A; Escaramis G; Carbonell J; Rivera J; Vidal J; Alegre J; Rabionet R; Estivill X. Cluster Analysis of Clinical Data Identifies Fibromyalgia Subgroups. *PLOS ONE*. 2013; 8(9). IF: 3.534. Quartile: 1.
- de la Torre I; Valor L; Nieto JC; Hernandez D; Martinez L; Gonzalez CM; Monteagudo I; Longo JL; Montoro M; Carreno L. Anti-TNF treatments in rheumatoid arthritis: economic impact of dosage modification. *EXPERT REVIEW OF PHARMACOECONOMICS & OUTCOMES RESEARCH*. 2013; 13(3) 407-414. IF: 1.87. Quartile: 2.
- Naredo E; Acebes C; Brito E; de Agustin JJ; de Miguel E; Mayordomo L; Moller I; Moragues C; Rejon E; Rodriguez A; Uson J; Garrido J; Martinez-Hernandez D. Three-dimensional Volumetric Ultrasound: A Valid Method for Blinded Assessment of Response to Therapy in Rheumatoid Arthritis. *JOURNAL OF RHEUMATOLOGY*. 2013; 40(3) 253-260. IF: 3.173. Quartile: 2. Reumatología.
- Naredo E; D'Agostino MA; Wakefield RJ; Moller I; Balint PV; Filippucci E; Iagnocco A; Karim Z; Terslev L; Bong DA; Garrido J; Martinez-Hernandez D; Bruyn GAW. Reliability of a consensus-based ultrasound

score for tenosynovitis in rheumatoid arthritis. *ANNALS OF THE RHEUMATIC DISEASES*. 2013; 72(8) 1328-1334. IF: 9.27. Quartile: 1.

- Rodriguez-Sainz C; Valor L; Hernandez DC; Gil J; Carbone J; Pascual-Bernaldez M; Rodriguez-Alcantara F; Martinez I; Vicario JL; Mallal S; Fernandez-Cruz E. Flow Cytometry Analysis with a New FITC-Conjugated Monoclonal Antibody-3E12 for HLA-B*57:01 Rapid Screening in Prevention of Abacavir Hypersensitivity in HIV-1-Infected Patients. *HIV CLINICAL TRIALS*. 2013; 14(4) 160-164. IF: 2.141. Quartile: 3.
- Garcia-Bermudez M; Lopez-Mejias R; Genre F; Castaneda S; Gonzalez-Juanatey C; Llorca J; Corrales A; Miranda-Filloy JA; Pina T; Gomez-Vaquero C; Rodriguez-Rodriguez L; Fernandez-Gutierrez B; Pascual-Salcedo D; Balsa A; Lopez-Longo FJ; Carreira P; Blanco R;. Single-nucleotide polymorphisms at the 9p21.3 genomic region not associated with the risk of cardiovascular disease in patients with rheumatoid arthritis. *TISSUE ANTIGENS*. 2013; 82(6) 405-409. IF: 2.35. Quartile: 2.
- Iagnocco A; Naredo E; Bijlsma JWJ. Becoming a musculoskeletal ultrasonographer. *BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY*. 2013; 27(2) 271-281. IF: 3.057. Quartile: 2.
- Colebatch AN; Edwards CJ; Ostergaard M; van der Heijde D; Balint PV; D'Agostino MA; Forslind K; Grassi W; Haavardsholm EA; Haugeberg G; Jurik AG; Landewe RBM; Naredo E; O'Connor PJ; Ostendorf B; Potocki K; Schmidt WA; Smolen JS; Sokolovic S; Watt I; Conag. EULAR recommendations for the use of imaging of the joints in the clinical management of rheumatoid arthritis. *ANNALS OF THE RHEUMATIC DISEASES*. 2013; 72(6) 804-814. IF: 9.27. Quartile: 1.
- Janta I; Naredo E; Martinez-Estupinan L; Nieto JC; De la Torre I; Valor L; Estupinan L; Bello N; Hinojosa M; Gonzalez CM; Lopez-Longo J; Monteagudo I;. Patient self-assessment and physician's assessment of rheumatoid arthritis activity: which is more realistic in remission status? A comparison with ultrasonography. *RHEUMATOLOGY*. 2013; 52(12) 2243-2250. IF: 4.435. Quartile: 1.
- Gonzalez JCN; Saez IM; Lopez-Longo FJ; Serrano B; Martinez CM; Perez LC. Idiopathic recurrent pericarditis treated successfully

AUTOIMMUNE SYSTEMIC DISEASES

with tumour necrosis factor alpha blocking agents (anti-TNF-alpha). CLINICAL AND EXPERIMENTAL RHEUMATOLOGY. 2013; 31(5) 776-778. IF: 2.973. Quartile: 2.

• Garcia-Bermudez M; Lopez-Mejias R; Genre F; Castaneda S; Gonzalez-Juanatey C; Llorca J; Corrales A; Miranda-Filloy JA; Rueda-Gotor J; Gomez-Vaquero C; Rodriguez-Rodriguez L; Fernandez-Gutierrez B; Pascual-Salcedo D; Balsa A; Lopez-Longo FJ; Carreira P; Bl. SMAD3 rs17228212 Gene Polymorphism Is Associated with Reduced Risk to Cerebrovascular Accidents and Subclinical Atherosclerosis in Anti-CCP Negative Spanish Rheumatoid Arthritis Patients. PLOS ONE. 2013; 8(10). IF: 3.534. Quartile: 1.

• Diaz-Gallo LM; Simeon CP; Broen JC; Ortego-Centeno N; Beretta L; Vonk MC; Carreira PE; Vargas S; Roman-Ivorra JA; Gonzalez-Gay MA; Tolosa C; Lopez-Longo FJ; Espinosa G; Vicente EF; Hessel. Implication of IL-2/IL-21 region in systemic sclerosis genetic susceptibility. ANNALS OF THE RHEUMATIC DISEASES. 2013; 72(7) 1233-1238. IF: 9.27. Quartile: 1.

• Carmona FD; Cenit MC; Diaz-Gallo LM; Broen JCA; Simeon CP; Carreira PE; Callejas-Rubio JL; Fonollosa V; Lopez-Longo FJ; Gonzalez-Gay MA; Hunzelmann N; Riemekasten G; Witte T; Kreuter A; Distler JHW; Madhok R; Shiels P; van Laar JM; Schuerwegh AJ; Vonk MC;. New insight on the Xq28 association with systemic sclerosis. ANNALS OF THE RHEUMATIC DISEASES. 2013; 72(12) 2032-2038. IF: 9.27. Quartile: 1.

• Naredo E; Moller I; Corrales A; Bong DA; Cobo-Ibanez T; Corominas H; Garcia-Vivar ML; Macarron P; Navio T; Richi P; Iagnocco A; Garrido J; Martinez-Hernandez D. Automated radiofrequency-based US measurement of common carotid intima-media thickness in RA patients treated with synthetic vs synthetic and biologic DMARDs. RHEUMATOLOGY. 2013; 52(2) 376-381. IF: 4.435. Quartile: 1. Reumatología.

• Fernandez-Bello I; Lopez-Longo FJ; Arias-Salgado EG; Jimenez-Yuste V; Butta NV. Behcet's disease: new insight into the relationship between procoagulant state, endothelial activation/damage and disease activity. ORPHANET JOURNAL OF RARE DISEASES. 2013; 8. IF: 3.958. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 8 | 34.8 |
| Joint publications | 9 | 46.4 |
| First-decile publications | 5 | 41.7 |
| First-quartile publications | 10 | 61.6 |
| Second-quartile publications | 6 | 17.5 |
| Third-quartile publications | 1 | 2.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 17 | 81.2 |

INFECTION IN PEDIATRIC PATIENTS

Group Director: Dr. M^a Luisa Navarro Gómez

Type: Consolidated



Programs and research 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.

P3: Bone and joint disease.

Group members

- **Felipe González Martínez:** Predoctoral
- **Maria Isabel Gonzalez Sanchez:** Predoctoral
- **Belén Hernández Rupérez:** Predoctoral
- **Teresa Hernández-Sampelayo Mato:** Postdoctoral
- **Manuela Moya García:**
- **María Luisa Navarro Gómez:** Postdoctoral
- **Magdalena Peinador García:** Predoctoral
- **Elena Rincón López:** Predoctoral
- **Rosa María Rodríguez Fernández:** Predoctoral
- **Jesús Saavedra Lozano:** Postdoctoral
- **Mar Santos Sebastian:** Predoctoral
- **M^a Carmen Suárez Arrabal:** Predoctoral

Research Projects – Competitive Calls

Principal investigator: Jesús Saavedra Lozano

Title: Antibiotic resistance and prescribing in european children.

Funding body: Comisión Europea

Start date: 2010

End date: 2013

Theses

| Doctoral student | Title | Director | University |
|-----------------------|--|--|-----------------------------------|
| Carmen Garrido Colino | Déficit de vitamina D y salud ósea en niños con enfermedad de células falciformes de la Comunidad de Madrid: medidas de intervención | Elena Cela de Julián, Teresa Hernández Sampelayo | Universidad Complutense de Madrid |

INFECTION IN PEDIATRIC PATIENTS

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|---|---|--|
| Rodriguez RP; Clotet EP; de Medrano VAL; Andreu JB; Burillo-Putze G; Ramos JRB; Perez SC; Gonzalez RC; Sanchez-Migallon AD; Gutierrez CD; Beneitez OLF; Civera IG; del Castillo JG; Gomez MN; Tey JMG; Jimenez AJ; Munoz RP; Carbonell RP; Conejo PR; Gil ID; Andreu OM | Executive Summary. Consensus Statement of the National AIDS Plan Secretariat, Spanish Society of Emergency Medicine and AIDS Study Group of the Spanish Society of Infectious Diseases and Clinical Microbiology on Emergency and HIV Infection | Enfermedades Infecciosas Y Microbiología Clínica |
| Gonzalez-Tome MI; Rivera M; Camano I; Norman F; Flores-Chavez M; Rodriguez-Gomez L; Fumado V; Hortelano MGL; Lopez-Velez R; Gonzalez-Granado LI; Garcia-Burgui-ilo A; Santos MD; Avila O | Recommendations for the diagnosis, treatment and follow-up of the pregnant woman and child with Chagas disease | Enfermedades Infecciosas Y Microbiología Clínica |

Publications

Total impact factor: 23.8

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

- Picazo J; Ruiz-Contreras J; Casado-Flores J; Negreira S; Garcia-de-Miguel MJ; Hernandez-Sampelayo T; Otheo E; Mendez C. Expansion of Serotype Coverage in the Universal Pediatric Vaccination Calendar: Short-Term Effects on Age- and Serotype-Dependent Incidence of Invasive Pneumococcal Clinical Presentations in Madrid, Spain. CLINICAL AND VACCINE IMMUNOLOGY. 2013; 20(10) 1524-1530. IF: 2.37. Quartile: 3.

- Cieza-Diaz DE; Campos-Dominguez M; Santos-Sebastian MD; Martinez MDFA; Ceballos-Rodriguez MD; Navarro-Gomez ML; Suarez-Fernandez R. Erythema Multiforme in a Newborn Associated with Acute Acquired Cytomegalovirus Infection. PEDIATRIC DERMATOLOGY. 2013; 30(6) E161-E163. IF: 1.52. Quartile: 3.
- Martinez FG; Lozano JS; Gomez MLN; Sebastian MMS; Fernandez RR; Sanchez MG; Matos THS. Increase in the incidence of invasive pneumococcal disease caused by serotype 19A prior to the implementation of the expanded pneumococcal vaccines. ANALES DE PEDIATRIA. 2013; 79(5) 288-292. IF: 0.772. Quartile: 4.
- Dapena M; Figueras C; Noguera-Julian A; Fortuny C; de Jose MI; Mellado MJ; Gavilan C; Falcon-Neyra MD; Navarro ML; de Ory SJ; Lopez C; Mayol L; Mendez M; Ciria LM; Coll MT; Garcia L; Nunez E; Espiau M; Soler-Palacin P. Implementation of Occult Hepatitis Screening in the Spanish Cohort of HIV-infected Pediatric Patients. PEDIATRIC INFECTIOUS DISEASE JOURNAL. 2013; 32(9) E377-E379. IF: 3.135. Quartile: 1.
- Rodriguez RP; Clotet EP; de Medrano VAL; Andreu JB; Burillo-Putze G; Ramos JRB; Perez SC; Gonzalez RC; Sanchez-Migallon AD; Gutierrez CD; Beneitez OLF; Civera IG; del Castillo JG; Gomez MN; Tey JMG; Jimenez AJ; Munoz RP; Carbonell RP; Conejo PR; Gil ID; A. Executive Summary. Consensus Statement of the National AIDS Plan Secretariat, Spanish Society of Emergency Medicine and AIDS Study Group of the Spanish Society of Infectious Diseases and Clinical Microbiology on Emergency and HIV Infection. ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2013; 31(7) 457-460. IF: 1.881. Quartile: 3.
- Picazo J; Ruiz-Contreras J; Casado-Flores J; Giangaspro E; Garcia-de-Miguel MJ; Hernandez-Sampelayo T; Otheo E; Mendez C. Impact of Introduction of Conjugate Vaccines in the Vaccination Schedule on the Incidence of Pediatric Invasive Pneumococcal Disease Requiring Hospitalization in Madrid 2007 to 2011. PEDIATRIC INFECTIOUS DISEASE JOURNAL. 2013; 32(6) 656-661. IF: 3.135. Quartile: 1.
- Mendez-Lagares G; Diaz L; Correa-Rocha R; Leal JAL; Ferrando-Martinez S; Ruiz-Mateos E; Pozo-Balado MM; Gurbindo MD; de Jose MI; Munoz-Fernandez MA; Leal M; Pacheco YM. Specific patterns of

INFECTION IN PEDIATRIC PATIENTS

CD4-associated immunosenescence in vertically HIV-infected subjects. CLINICAL MICROBIOLOGY AND INFECTION. 2013; 19(6) 558-565. IF: 5.197. Quartile: 1.

- Gonzalez-Tome MI; Rivera M; Camano I; Norman F; Flores-Chavez M; Rodriguez-Gomez L; Fumado V; Hortelano MGL; Lopez-Velez R; Gonzalez-Granado LI; Garcia-Burguillo A; Santos MD; Avila O. Recommendations for the diagnosis, treatment and follow-up of the pregnant woman and child with Chagas disease. ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2013; 31(8) 535-542. IF: 1.881. Quartile: 3.
- Bueno M; Calvo C; Mendez-Echevarria A; de Jose MI; Santos M; Carrasco J; Tovizi M; Guillen S; de Blas A; Llorente M; Tarrago A; Escosa L; Cilleruelo MJ; Tomatis C; Blazquez D; Otheo E; Mazagatos D; Garcia-Garcia ML. Oseltamivir Treatment for Influenza in Hospitalized Children Without Underlying Diseases. PEDIATRIC INFECTIOUS DISEASE JOURNAL. 2013; 32(10) 1066-1069. IF: 3.135. Quartile: 1.
- Martinez FG; Sanchez MIG; Fernandez RR. Clinical impact of introducing ventilation with high flow oxygen in the treatment of bronchiolitis in a paediatric ward. ANALES DE PEDIATRIA. 2013; 78(4) 210-215. IF: 0.772. Quartile: 4.

Publications in nonindexed journals in the Journal Citation Reports

- Versporten A; Sharland M; Bielicki J; Drapier N; Vankerckhoven V; Goossens H; ARPEC Project Group Members. The antibiotic resistance and prescribing in European Children project: a neonatal and pediatric antimicrobial web-based point prevalence survey in 73 hospitals worldwide. Pediatr Infect Dis J. 2013; 32(6):e242-53.
- Hernández Rupérez MB; Campos Domínguez M; Saavedra Lozano J. Infecciones fúngicas superficiales. Actualización. An Pediatr Contin. 2013; 11: 254-66.
- Versporten A; Sharland M; Bielicki J; Drapier N; Vankerckhoven V; Goossens H; ARPEC Project Group Members. Medicine and AIDS

Study Group of the Spanish Society of Infectious Diseases and Clinical Microbiology Executive Summary. Consensus Statement of the National AIDS Plan Secretariat;Spanish Society of Emergency. Enferm Infect Microbiol Clin. 2013; 31(7): 457-460.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 2 | 1.5 |
| Joint publications | 8 | 22.3 |
| First-decile publications | 4 | 14.6 |
| First-quartile publications | 4 | 14.6 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 4 | 7.7 |
| Fourth-quartile publications | 2 | 1.5 |
| Nonindexed publications | 3 | - |
| Total publications | 13 | 23.8 |

IMMUNOLOGY OF HIV INFECTION IN PEDIATRIC PATIENTS

Group Director: Dr. M^a Dolores Gurbindo Gutiérrez

Type: Consolidated



Research lines

L1: Alterations of the immune system in children.

L2: HIV infection in the pediatric patient.

Group members

- **Rafael Correa Rocha:** Miguel Servet
- **María Dolores Gurbindo Gutiérrez:** Group director

Proyectos de Investigación - Convocatorias competitivas

Principal investigator: María Dolores Gurbindo Gutiérrez

Title: Evolución del sistema inmunológico durante la gestación e infección: análisis del receptor de células T y células B.

Funding body: Instituto de Salud Carlos III

Start date: 2011

End date: 2013

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: Gurbindo Gutiérrez, María Dolores

Title: Proyecto FIS 2013. Efecto de una intervención nutricional inmunomoduladora sobre la microbiota, translocación bacteriana, inflamación/activación inmune y respuesta a vacunas en la infección por el VIH en niños.

Funding body: Instituto de Salud Carlos III

Start date: 2014

End date: 2016

Publications

Total impact factor: 20.9

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

- Mendez-Lagares G; Diaz L; Correa-Rocha R; Leal JAL; Ferrando-Martinez S; Ruiz-Mateos E; Pozo-Balado MM; Gurbindo MD; de Jose MI; Munoz-Fernandez MA; Leal M; Pacheco YM. Specific patterns of CD4-associated immunosenescence in vertically HIV-infected subjects. CLINICAL MICROBIOLOGY AND INFECTION. 2013; 19(6) 558-565. IF: 5.197. Quartile: 1.

IMMUNOLOGY OF HIV INFECTION IN PEDIATRIC PATIENTS

- Pion M; Jaramillo-Ruiz D; Martinez A; Munoz-Fernandez MA; Correa-Rocha R. HIV infection of human regulatory T cells downregulates Foxp3 expression by increasing DNMT3b levels and DNA methylation in the FOXP3 gene. AIDS. 2013; 27(13) 2019-2029. IF: 6.557. Quartile: 1.
- Alvaro-Meca A; Jensen J; Micheloud D; Diaz A; Gurbido D; Resino S. Rate of candidiasis among HIV-infected children in Spain in the era of highly active antiretroviral therapy (1997-2008). BMC INFECTIOUS DISEASES. 2013; 13. IF: 2.561. Quartile: 2.
- Sainz T; Serrano-Villar S; Diaz L; Tome MIG; Gurbido MD; de Jose MI; Mellado MJ; Ramos JT; Zamora J; Moreno S; Munoz-Fernandez MA. The CD4/CD8 ratio as a marker T-cell activation, senescence and activation/exhaustion in treated HIV-infected children and young adults. AIDS. 2013; 27(9) 1513-1516. IF: 6.557. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 1 | 6.6 |
| Joint publications | 3 | 14.3 |
| First-decile publications | 3 | 18.3 |
| First-quartile publications | 3 | 18.3 |
| Second-quartile publications | 1 | 2.6 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 20.9 |

PATHOGENESIS OF THE IMMUNOALLERGIC RESPONSE

Group Director: Dr. José Manuel Zubeldia Ortúño

Type: In process of consolidation

Programs and research lines (researchers and staff)

P1: Mechanisms of the allergic 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: Hypoxia-induced disease.

- L1. Pulmonary bronchodysplasia model in newborn rats.
- L2. Overexposure of immunological hypoxia-induced alterations in transgenic mice.

P4: Characterization of noncommercial antigens.

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

Group members

- Alberto Álvarez Perea
- María Luisa Baeza Ochoa de Ocáriz: Principal investigator
- Alicia Prieto García: Predoctoral
- Pilar Tornero Molina: Predoctoral
- José Manuel Zubeldia Ortúño: Group director

Tesis

| Doctoral student | Title | Director | University |
|----------------------|---|-----------------------------|--------------------------------|
| Alicia Prieto García | Los complejos triptasa-heparina de los mastocitos humanos y de ratón, impiden la generación de fibrina y la coagulación del plasma inducida por la trombina, mediante la destrucción proteolítica del fibrinógeno | José Manuel Zubeldia Ortúño | Universidad Autónoma de Madrid |

PATHOGENESIS OF THE IMMUNOALLERGIC RESPONSE

| Publications | Total impact factor: 9.5 |
|--------------|--------------------------|
|--------------|--------------------------|

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

- Prieto-Garcia A; Tomas M; Pineda R; Tornero P; Herrero T; Fuentes V; Zapatero L; de Barrio M. Skin Test-Positive Immediate Hypersensitivity Reaction to Iodinated Contrast Media: The Role of Controlled Challenge Testing. JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2013; 23(3) 183-189. IF: 2.642. Quartile: 3.
- Alvarez-Perea A; Alzate DP; Maldonado AD; Baeza ML. Anaphylaxis Caused by Flaxseed. JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2013; 23(6) 446-447. IF: 2.642. Quartile: 3.
- Fuentes-Aparicio V; Alvarez-Perea A; Infante S; Zapatero L; D'Oleo A; Alonso-Lebrero E. Specific oral tolerance induction in paediatric patients with persistent egg allergy. ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2013; 41(3) 143-150. IF: 1.58. Quartile: 4.
- Sanchez-Ramon S; Eguiluz-Gracia I; Rodriguez-Mazariego ME; Paravisini A; Zubeldia-Ortuno JM; Gil-Herrera J; Fernandez-Cruz E; Suarez-Fernandez R. Sequential Combined Therapy With Omalizumab and Rituximab: A New Approach to Severe Atopic Dermatitis. JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2013; 23(3) 190-196. IF: 2.642. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 2 | 5.3 |
| Joint publications | 2 | 4.2 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 3 | 7.9 |
| Fourth-quartile publications | 1 | 1.6 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 9.5 |

ALLERGIC DISEASES IN PEDIATRIC PATIENTS

Group Director: Dra. Elena Alonso Lebrero

Type: Associated Clinical



Research lines

L1. Allergic response to foods.

L2. Allergic response to medication.

Group members

- **Elena Alonso Lebrero:** Group director
- **Victoria Fuentes Aparicio:** Predoctoral
- **Sonsoles Infante Herrero:** Predoctoral
- **Lidia Zapatero Remón**

Publications

Total impact factor: 8.4

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

- Martorell A; Alonso E; Bone J; Echeverria L; Lopez MC; Martin F; Nevot S; Plaza AM. Position document: IgE-mediated allergy to egg protein. ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2013; 41(5) 320-336. IF: 1.58. Quartile: 4.
- Prieto-Garcia A; Tomas M; Pineda R; Tornero P; Herrero T; Fuentes V; Zapatero L; de Barrio M. Skin Test-Positive Immediate Hypersensitivity Reaction to Iodinated Contrast Media: The Role of Controlled Challenge Testing. JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2013; 23(3) 183-189. IF: 2.642. Quartile: 3.
- Fuentes-Aparicio V; Alvarez-Perea A; Infante S; Zapatero L; D'Oleo A; Alonso-Lebrero E. Specific oral tolerance induction in paediatric patients with persistent egg allergy. ALLERGOLOGIA ET IMMUNOPATHOLOGIA. 2013; 41(3) 143-150. IF: 1.58. Quartile: 4.
- Berroa F; Callero A; Fuentes-Aparicio V; Infante S; Alonso-Lebrero E; Zapatero L. Rechallenge in Pediatric Patients Diagnosed With Delayed Hypersensitivity to Penicillins. JOURNAL OF INVESTIGATIONAL ALLERGOLOGY AND CLINICAL IMMUNOLOGY. 2013; 23(5) 369-370. IF: 2.642. Quartile: 3.

ALLERGIC DISEASES IN PEDIATRIC PATIENTS

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 2 | 4.2 |
| Joint publications | 2 | 4.2 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 5.3 |
| Fourth-quartile publications | 2 | 3.2 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 8.4 |



AREA 6

Translational Oncology

Area Coordinator:
Miguel Martín Jiménez

The general research objective in the Area of Oncology in the IISGM is to generate reliable and scientifically relevant data on personalized treatment of cancer. This objective is met through high-quality translational research enabling the selection of the antitumor treatment that provides the greatest number of options for cure with the least toxicity and 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 AXES AND LINES

Strategic axes

A1: Promotion of collaborations and partnerships in the Area of 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 trials of EMP.

Axis 2: Consolidation of research lines in oncology.

1. Promotion 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.

RESEARCH AXES AND LINES

Strategic lines

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 induced by 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 of 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. Increase in scientific output.

Strategic objectives

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

RESEARCH AXES AND LINES

Strategic lines

Axis 3: Training

1. Increased postgraduate training.

Strategic objectives

- Promote preparation of doctoral theses among those members of the group who have not yet prepared one.
- Incorporate predoctoral fellows.
- Increase the interest of medical residents in preparing their doctoral thesis.

2. Development of training 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 oncologic molecular biology laboratory in the Medical Oncology Service.

- In collaboration with other laboratories of 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).

AREA 6: GROUPS



Translational Oncology

- Translational medical oncology and personalized cancer therapy
- Genetics and clinical aspects of hematologic malignancy and hematopoietic stem cell transplant
- Interdisciplinary oncology and biotechnology
- Surgical oncology
- Oncohematology in pediatric patients
- Angiogenesis of brain tumors

TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

Group Director: Dr. Miguel Martín Jiménez

Group 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 different 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) or in monotherapy: impact on efficacy and toxicity profile.

L18: Oncotron 1201 Project (Study of the genomic risk profiles in venous thromboembolism in patients with cancer undergoing

TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

chemotherapy in hospital).

L19: Project for clinical and histopathological characterization of familial melanoma in Spain (Fam-GEM-1).

L20: Inflammatory microenvironment of human melanoma: reciprocal tumor–stroma/tumor interactions and clinical significance of the polarization status of tumor-associated macrophages.

Group members

- **Rosa M^a Álvarez Álvarez:** Predoctoral
- **Sandra Andrés Ratón:** Support technician
- **Jose Ángel Arranz Arijá:** Predoctoral
- **Carolina Ayllón García:** Predoctoral
- **Monserrat Blanco Codesido:** Postdoctoral
- **Alba Blanco Velilla:** Data management
- **Oscar Bueno Zamora:** Predoctoral
- **Aitana Calvo Ferrández:** Predoctoral
- **Mercedes Cavanagh Podesta:** Predoctoral
- **María Cebollero Presmanes:** Postdoctoral
- **Ana Corcuera Sánchez:** Data management
- **Sara Custodio Cabello:** Predoctoral
- **María del Monte Millán:** Data management
- **Isabel Echevarría Díaz-Guardimino:** Predoctoral
- **Yolanda Escobar Álvarez:** Predoctoral
- **Edward José Espinal Domínguez:** Predoctoral
- **Magdalena Esteban Arranz:** Predoctoral
- **Sara Fernández González:** Data management
- **Sandra Flórez Peñasco:** Data management
- **Fernando Galindo Barreales:** Administration
- **María Iria Gallego Gallego:** Predoctoral
- **M^a Pilar García Alfonso:** Postdoctoral
- **Ramón García Gómez:** Postdoctoral
- **Gonzalo García González:** Predoctoral
- **Elsa García Laborda:** Predoctoral
- **Milagros González Rivera:** Postdoctoral

- **Ricardo González del Val Subirats:** Predoctoral
- **Ana Herrero Heras:** Predoctoral
- **Yolanda Jerez Gilarranz:** Post-MIR FIBHGM
- **María Elena Lahoz León:** Predoctoral
- **Santiago Lizarraga Bonelli:** Predoctoral
- **Miriam Lobo de Mena:** Predoctoral
- **Estela López Juárez:** Data management
- **Cristina López López:** Predoctoral
- **Sara López-Tarruella Cobo:** Postdoctoral
- **Daniel López-Trabada Ataz:** Predoctoral
- **Soledad Luque Molina:** Predoctoral
- **Ivan Marquez Rodas:** Postdoctoral
- **Miguel Martín Jiménez:** Senior researcher
- **Tatiana Massarrah Sánchez:** Predoctoral
- **Beatriz Moya Ortega:** Predoctoral
- **Andres Muñoz Martín:** Predoctoral
- **Inmaculada Ocaña Torres:** Support technician
- **Francisco Javier Olcoz Monreal:** Predoctoral
- **Laura Ortega Morán:** Predoctoral
- **Maria Isabel Palomero Plaza:** Predoctoral
- **Ricardo Pérez Fernández:** Predoctoral
- **Sara Pérez Ramírez:** Predoctoral
- **Antonio Climent Picornell Company:** Postdoctoral
- **Beatriz Puente Vázquez:** Data management
- **Rocío Ramos Medina:** Postdoctoral
- **Patricia Rincón Olbés:** Predoctoral
- **Ana Belén Ruiz Bolaños:** Data management
- **Ana Belén Rupérez Blanco:** Predoctoral
- **María Pilar Sabin Dominguez:** Predoctoral
- **Gabriela Torres Pérez-Solero:** Predoctoral
- **Daniel Urosa Velasco:** Data management

TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

Research Projects – Competitive Calls

Principal investigator: Miguel Martín Jiménez

Title: Evaluación daño cerebral (chemobrain) asociado al tratamiento del cáncer de mama.

Funding body: F. Mapfre Medicina

Start date: 2012

End date: 2013

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: RETIC en cáncer

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

Principal investigator: Martín Jiménez, Miguel

Title: Merck Serono 2012

Funding body: Fundación Salud 2000

Start date: 2013

End date: 2016

Theses

| Doctoral student | Title | Director | University |
|--------------------|---|---------------|-----------------------------------|
| Gonzalo Tapia Rico | Correlación entre los subtipos moleculares intrínsecos en el cáncer de mama por PAM50 y la inmunohistoquímica tumoral | Miguel Martín | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|--|---|
| Alvarez YE; Sola ABI; Rodriguez MC; Mateos RG; Rueda AM; Sanchez CAR; Mesa DR; Rodriguez ATI | Diagnosis and treatment of break-through cancer pain: Consensus recommendations | Medicina Paliativa |
| Gomez JG; Lopez MEP; Bermejo MA; Alvarez YE; Mata JG | SEOM guide to antiemetic prophylaxis in cancer patients treated with chemotherapy 2013 | Clinical & Translational Oncology |
| Gallardo E; Arranz JA; Maroto JP; Leon LA; Bellmunt J | Expert opinion on chemotherapy use in castration-resistant prostate cancer progressing after docetaxel | Critical Reviews in Oncology Hematology |

Publications

Total impact factor: 254.6

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

- Martin M; Bonneterre J; Geyer CE; Ito Y; Ro J; Lang I; Kim SB; Germa C; Vermette J; Wang K; Wang KM; Awada A. A phase two randomised trial of neratinib monotherapy versus lapatinib plus capecitabine combination therapy in patients with HER2+advanced breast cancer. EUROPEAN JOURNAL OF CANCER. 2013; 49(18) 3763-3772. IF: 4.819. Quartile: 1.
- Mackey JR; Martin M; Pienkowski T; Rolski J; Guastalla JP; Sami A; Glaspy J; Juhos E; Wardley A; Fornander T; Hainsworth J; Coleman R; Modiano MR; Vinholes J; Pinter T; Rodriguez-Lescure A; Colwell B; Whitlock P; Provencher L; Laing K; Walde D; Price C; H. Adjuvant

TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

- docetaxel, doxorubicin, and cyclophosphamide in node-positive breast cancer: 10-year follow-up of the phase 3 randomised BCIRG 001 trial. *LANCET ONCOLOGY*. 2013; 14(1) 72-80. IF: 24.725. Quartile: 1.
- Goss PE; Smith IE; O'Shaughnessy J; Ejlertsen B; Kaufmann M; Boyle F; Buzdar AU; Fumoleau P; Gradishar W; Martin M; Moy B; Piccart-Gebhart M; Pritchard KI; Lindquist D; Chavarri-Guerra Y; Aktan G; Rappold E; Williams LS; Finkelstein DM. Adjuvant lapatinib for women with early-stage HER2-positive breast cancer: a randomised, controlled, phase 3 trial. *LANCET ONCOLOGY*. 2013; 14(1) 88-96. IF: 24.725. Quartile: 1.
 - Martin M; Ruiz A; Borrego MR; Barnadas A; Gonzalez S; Calvo L; Vila MM; Anton A; Rodriguez-Lescure A; Segui-Palmer MA; Munoz-Mateu M; Ribugent JD; Lopez-Vega JM; Jara C; Espinosa E; Fernandez CM; Andres R; Ribelles N; Plazaola A; Sanchez-Rovira P; Bofill. Fluorouracil, Doxorubicin, and Cyclophosphamide (FAC) Versus FAC Followed by Weekly Paclitaxel As Adjuvant Therapy for High-Risk, Node-Negative Breast Cancer: Results From the GEICAM/2003-02 Study. *JOURNAL OF CLINICAL ONCOLOGY*. 2013; 31(20) 2593. IF: 17.879. Quartile: 1.
 - Garrido P; Rosell R; Arellano A; Andreu F; Domine M; Perez-Casas A; Cardenal F; Arnaiz MD; Moran T; Morera R; Isla D; Valencia J; Cobo M; Delgado R; Garcia-Gomez R; Calvo F; Zamora J; Ramos A; Massuti B. Randomized phase II trial of non-platinum induction or consolidation chemotherapy plus concomitant chemoradiation in stage III NSCLC patients: Mature results of the Spanish Lung Cancer Group 0008 study. *LUNG CANCER*. 2013; 81(1) 84-90. IF: 3.737. Quartile: 1.
 - Escobar Y; Manas A; Julia J; Galvez R; Zaragoza F; Margarit C; Lopez R; Casas A; Anton A; Cruz JJ. Optimal management of breakthrough cancer pain (BCP). *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(7) 526-534. IF: 1.6. Quartile: 4.
 - Sanchez-Espiridion B; Martin-Moreno AM; Montalban C; Figueroa V; Vega F; Younes A; Medeiros LJ; Alves FJ; Canales M; Estevez M; Menarguez J; Sabin P; Ruiz-Marcellan MC; Lopez A; Sanchez-Godoy P; Burgos F; Santonja C; Lopez JL; Piris MA; Garcia JF. MicroRNA signatures and treatment response in patients with advanced classical Hodgkin lymphoma. *BRITISH JOURNAL OF HAEMATOLOGY*. 2013; 162(3) 336-347. IF: 4.959. Quartile: 1.
 - Prat A; Cheang MCU; Martin M; Parker JS; Carrasco E; Caballero R; Tyldesley S; Gelmon K; Bernard PS; Nielsen TO; Perou CM. Prognostic Significance of Progesterone Receptor-Positive Tumor Cells Within Immunohistochemically Defined Luminal A Breast Cancer. *JOURNAL OF CLINICAL ONCOLOGY*. 2013; 31(2) 203-209. IF: 17.879. Quartile: 1.
 - Calvo FA; Sole CV; Atahualpa F; Lozano MA; Gomez-Espi M; Calin A; Garcia-Alfonso P; Gonzalez-Bayon L; Herranz R. Chemoradiation for resected pancreatic adenocarcinoma with or without intraoperative radiation therapy boost: Long-term outcomes. *PANCREATOLOGY*. 2013; 13(6) 576-582. IF: 2.504. Quartile: 2.
 - Gutierrez-Gonzalez A; Belda-Iniesta C; Bargiela-Iparraguirre J; Dominguez G; Alfonso PG; Perona R; Sanchez-Perez I. Targeting Chk2 improves gastric cancer chemotherapy by impairing DNA damage repair. *APOPTOSIS*. 2013; 18(3) 347-360. IF: 3.614. Quartile: 2.
 - Alfonso PG; Martin AM; Suarez SA; Codeidido MB; Solis RM; Rico GT; Martin PL; Martin M. Bevacizumab in Combination with Capecitabine plus Irinotecan as First-Line Therapy in Metastatic Colorectal Cancer: A Pooled Analysis of 2 Phase II. *ONKOLOGIE*. 2013; 36(6) 363-367. IF: 0.835. Quartile: 4.
 - Martin M; Lopez-Tarruella S. Zooming in on the schedule of bone-modifying drugs. *LANCET ONCOLOGY*. 2013; 14(7) 575-576. IF: 24.725. Quartile: 1.
 - Au HJ; Eiermann W; Robert NJ; Pienkowski T; Crown J; Martin M; Pawlicki M; Chan A; Mackey J; Glaspy J; Pinter T; Liu MC; Fornander T; Sehdev S; Ferrero JM; Bee V; Santana MJ; Miller DP; Lalla D; Slamon DJ. Health-Related Quality of Life With Adjuvant Docetaxel- and Trastuzumab-Based Regimens in Patients with Node-Positive and High-Risk Node-Negative, HER2-Positive Early Breast Cancer: Results from the BCIRG 006 Study. *ONCOLOGIST*. 2013; 18(7) 812-818. IF: 4.54. Quartile: 1.
 - Pajares B; Pollan M; Martin M; Mackey JR; Lluch A; Gavila J; Vogel C; Ruiz-Borrego M; Calvo L; Pienkowski T; Rodriguez-Lescure A; Segui MA; Tredan O; Anton A; Ramos M; Camara MD; Rodriguez-Martin C; Carrasco E; Alba E. Obesity and survival in operable breast cancer

TRANSLATIONAL MEDICAL ONCOLOGY AND PERSONALIZED CANCER THERAPY

- patients treated with adjuvant anthracyclines and taxanes according to pathological subtypes: a pooled analysis. *BREAST CANCER RESEARCH*. 2013; 15(6). IF: 5.881. Quartile: 1.
- Cortejoso L; Garcia MI; Garcia-Alfonso P; Gonzalez-Haba E; Escolar F; Sanjurjo M; Lopez-Fernandez LA. Differential toxicity biomarkers for irinotecan- and oxaliplatin-containing chemotherapy in colorectal cancer. *CANCER CHEMOTHERAPY AND PHARMACOLOGY*. 2013; 71(6) 1463-1472. IF: 2.571. Quartile: 2.
 - Garcia-Donas J; Leandro-Garcia LJ; del Alba AG; Morente M; Alemany I; Esteban E; Arranz JA; Climent MA; Gallardo E; Castellano DE; Bellmunt J; Mellado B; Puente J; Moreno F; Font A; Hernando S; Robledo M; Rodriguez-Antona C. Prospective study assessing hypoxia-related proteins as markers for the outcome of treatment with sunitinib in advanced clear-cell renal cell carcinoma. *ANNALS OF ONCOLOGY*. 2013; 24(9) 2409-2414. IF: 6.578. Quartile: 1.
 - Ocana A; Amir E; Seruga B; Martin M; Pandiella A. The evolving landscape of protein kinases in breast cancer: Clinical implications. *CANCER TREATMENT REVIEWS*. 2013; 39(1) 68-76. IF: 6.466. Quartile: 1.
 - Martin M; Custodio S; de las Casas MLM; Garcia-Saenz JA; de la Torre JC; Bellon-Cano JM; Lopez-Tarruella S; Vidaurreta-Lazaro M; de la Orden V; Jerez Y. Circulating Tumor Cells Following First Chemotherapy Cycle: An Early and Strong Predictor of Outcome in Patients With Metastatic Breast Cancer. *ONCOLOGIST*. 2013; 18(8) 917-923. IF: 4.54. Quartile: 1.
 - Calvo FA; Sole CV; Lozano MA; Gonzalez-Bayon L; Gonzalez-Sansegundo C; Alvarez A; Blanco J; Calin A; Lizarraga S; Ga. Intraoperative electron beam radiotherapy and extended surgical resection for gynecological pelvic recurrent malignancies with and without external beam radiation therapy: Long-term outcomes. *GYNECOLOGIC ONCOLOGY*. 2013; 130(3) 537-544. IF: 3.687. Quartile: 1.
 - Maroto JP; del Muro XG; Mellado B; Perez-Gracia JL; Andres R; Cruz J; Gallardo E; Domenech M; Arranz JA; Meana JA. Phase II trial of sequential subcutaneous interleukin-2 plus interferon alpha followed by sorafenib in renal cell carcinoma (RCC). *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(9) 698-704. IF: 1.6. Quartile: 4.
 - Gomez JG; Lopez MEP; Bermejo MA; Alvarez YE; Mata JG. SEOM guide to antiemetic prophylaxis in cancer patients treated with chemotherapy 2013. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(12) 1030-1036. IF: 1.6. Quartile: 4.
 - Amadori D; Carrasco E; Roesel S; Labianca R; Uziely B; Soldatenkova V; Moreau V; Desaiah D; Bauknecht T; Martin M. A randomized phase II non-comparative study of pemetrexed-carboplatin and gemcitabine-vinorelbine in anthracycline- and taxane-pretreated advanced breast cancer patients. *INTERNATIONAL JOURNAL OF ONCOLOGY*. 2013; 42(5) 1778-1785. IF: 2.773. Quartile: 2.
 - Gallardo E; Arranz JA; Maroto JP; Leon LA; Bellmunt J. Expert opinion on chemotherapy use in castration-resistant prostate cancer progressing after docetaxel. *CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY*. 2013; 88(2) 357-367. IF: 4.046. Quartile: 1.
 - Alvarez YE; Sola ABI; Rodriguez MC; Mateos RG; Rueda AM; Sanchez CAR; Mesa DR; Rodriguez ATI. Diagnosis and treatment of break-through cancer pain: Consensus recommendations. *MEDICINA PALIATIVA*. 2013; 20(4) 150-157. IF: 0.162. Quartile: 4.
 - Alba E; Ciruelos E; Lopez R; Lopez-Vega JM; Lluch A; Martin M; Munoz M; Sanchez-Rovira P; Segui MA; Liria MR; Perez-Alcantara F. Cost-utility analysis of nanoparticle albumin-bound paclitaxel versus paclitaxel in monotherapy in pretreated metastatic breast cancer in Spain. *EXPERT REVIEW OF PHARMACOECONOMICS & OUTCOMES RESEARCH*. 2013; 13(3) 381. IF: 1.87. Quartile: 2.
 - Sole CV; Calvo FA; Alvarez E; Peligros I; Garcia-Alfonso P; Ferrer C; Ochoa E; Herranz R; Carreras JL. Clinical significance of VEGFR-2 and F-18-FDG PET/CT SUVmax pretreatment score in predicting the long-term outcome of patients with locally advanced rectal cancer treated with neoadjuvant therapy. *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*. 2013; 40(11) 1635-1644. IF: 5.217. Quartile: 1.

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- Jones R; Vuky J; Elliott T; Mead G; Arranz JA; Chester J; Chowdhury S; Dudek AZ; Muller-Mattheis V; Grimm MO; Gschwend JE; Wulfing C; Albers P; Li JG; Osmukhina A; Skolnik J; Hudes G. Phase II study to assess the efficacy, safety and tolerability of the mitotic spindle kinesin inhibitor AZD4877 in patients with recurrent advanced urothelial cancer. INVESTIGATIONAL NEW DRUGS. 2013; 31(4) 1001-1007. IF: 2.927. Quartile: 2.
- von Minckwitz G; Martin M; Wilson G; Alba E; Schmidt M; Biganzoli L; Awada A. Optimizing taxane use in MBC in the emerging era of targeted chemotherapy. CRITICAL REVIEWS IN ONCOLOGY HEMATOLOGY. 2013; 85(3) 315-331. IF: 4.046. Quartile: 1.
- Tanic M; Andres E; Rodriguez-Pinilla SM; Marquez-Rodas I; Cebollero-Presmanes M; Fernandez V; Osorio A; Benitez J; Martinez-Delgado B. MicroRNA-based molecular classification of non-BRCA1/2 hereditary breast tumours. BRITISH JOURNAL OF CANCER. 2013; 109(10) 2724-2734. IF: 4.817. Quartile: 1.
- Romero A; Garcia-Saenz JA; Fuentes-Ferrer M; Garcia-Asenjo JAL; Furio V; Roman JM; Moreno A; de la Hoya M; Diaz-Rubio E; Martin M; Caldes T. Correlation between response to neoadjuvant chemotherapy and survival in locally advanced breast cancer patients. ANNALS OF ONCOLOGY. 2013; 24(3) 655-661. IF: 6.578. Quartile: 1.
- Garnett SA; Martin M; Jerusalem G; Petruzelka L; Torres R; Bondarenko IN; Khasanov R; Verhoeven D; Pedrini JL; Smirnova I; Lichinitser MR; Pendergrass K; Lindemann JPO; Di Leo A. Comparing duration of response and duration of clinical benefit between fulvestrant treatment groups in the CONFIRM trial: application of new methodology. BREAST CANCER RESEARCH AND TREATMENT. 2013; 138(1) 149-155. IF: 4.198. Quartile: 1.
- Martin M; Lopez-Tarruella S. CHEMOTHERAPY Maintenance therapy in breast cancer-many questions remain. NATURE REVIEWS CLINICAL ONCOLOGY. 2013; 10(7) 370-372. IF: 15.696. Quartile: 1.
- Casas A; Llombart A; Martin M. Denosumab for the treatment of bone metastases in advanced breast cancer. BREAST. 2013; 22(5) 585-592. IF: 2.581. Quartile: 1.
- Aviles-Izquierdo JA; Lazaro-Ochaita P; Suarez-Fernandez R; Marquez-Rodas I; Parra-Blanco V; Escat-Cortes JL. Epidemiological changes in cutaneous melanoma: retrospective study of 969 cases (1996-2010). REVISTA CLINICA ESPANOLA. 2013; 213(2) 81-87. IF: 1.314. Quartile: 3.
- Rini BI; Melichar B; Ueda T; Grunwald V; Fishman MN; Arranz JA; Bair AH; Pithavala YK; Andrews GI; Pavlov D; Kim S; Jonasch E. Axitinib with or without dose titration for first-line metastatic renal-cell carcinoma: a randomised double-blind phase 2 trial. LANCET ONCOLOGY. 2013; 14(12) 1233-1242. IF: 24.725. Quartile: 1.
- Martin M; Prat A; Rodriguez-Lescure A; Caballero R; Ebbert MTW; Munarriz B; Ruiz-Borrego M; Bastien RRL; Crespo C; Davis C; Rodriguez CA; Lopez-Vega JM; Furio V; Garcia AM; Casas M; Ellis MJ; Berry DA; Pitcher BN; Harris L; Ruiz A; Winer E; Hudis C; Stijl. PAM50 proliferation score as a predictor of weekly paclitaxel benefit in breast cancer. BREAST CANCER RESEARCH AND TREATMENT. 2013; 138(2) 457-466. IF: 4.198. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|-------|
| Own publications | 11 | 79.8 |
| Joint publications | 25 | 174.8 |
| First-decile publications | 12 | 178.9 |
| First-quartile publications | 24 | 231.2 |
| Second-quartile publications | 6 | 16.3 |
| Third-quartile publications | 1 | 1.3 |
| Fourth-quartile publications | 5 | 5.8 |
| Nonindexed publications | 0 | - |
| Total publications | 36 | 254.6 |

INTERDISCIPLINARY ONCOLOGY AND BIOTECHNOLOGY

Group Director: Dr. Felipe Calvo Pérez
Dr. Rafael Herranz Crespo

Group type: Consolidated



Research lines and programs

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 cancer care

- L1: Palliative medicine.
- L2: Surgical disease.
- L3: Radiologic imaging.

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 cross-sectional improvement. The group researches 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 an ionizing radiation component: it promotes the multimodal therapeutic index by reducing the toxicity of healthy tissue (which can be temporarily displaced during surgery) and increases local control (maximum 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. It is also an alternative for optimization in cancer with a favorable prognosis (minimally efficacious treatment).

INTERDISCIPLINARY ONCOLOGY AND BIOTECHNOLOGY

Of note, this group developed the first intraoperative electron radiotherapy planner (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 researched prospectively based on integrated care activity.

Group members

- **Héctor Alburquerque Carbuccia:** Predoctoral
- **Juan Carlos Alonso Farto:** Predoctoral
- **Emilio Álvarez Fernández:** Postdoctoral
- **Ana Álvarez González:** Predoctoral
- **Rafael Ayala Lázaro:** Predoctoral
- **José Blanco Rodríguez:** Predoctoral
- **Ana Calín Lorca:** Predoctoral
- **Felipe Ángel Calvo Manuel:** Senior researcher
- **Miguel Cuervo Dehesa:** Senior researcher
- **Emilio del Valle Hernández:** Predoctoral
- **María Jesús García Hernández:** Predoctoral
- **Susana Gómez Cores:** Predoctoral
- **Marina Gómez Espí:** Postdoctoral
- **Federico González Aragoneses:** Senior researcher
- **Carmen González San Segundo:** Senior researcher
- **Rafael Herranz Crespo:** Otros
- **Rocío Jiménez Rojas:** Predoctoral
- **Javier Lafuente Martínez:** Senior researcher
- **Miguel Ángel López Bote:** Other
- **Miguel Angel Lozano Barriuso:** Senior researcher
- **Mercedes Moreno Domene:** Predoctoral
- **Carlos Navarro Vila:** Investigador Senior
- **Juan Manuel Nuñez Olarte:** Senior researcher
- **Luis Ortiz Quintana:** Senior researcher
- **María Isabel Peligros Gómez:** Postdoctoral
- **Rafael Peñalver Pascual:** Postdoctoral
- **María Jesús Prieto Rodriguez:** Predoctoral
- **Marcos Rodríguez Martín:** Predoctoral

- **José Ramón Sendón del Río:** Predoctoral
- **Francisco Javier Serrano Andreu:** Postdoctoral
- **Fernando Sierra Díaz:** Predoctoral
- **Claudio Vicente Sole Pesutic:** Predoctoral
- **Fernando Turégano Fuentes:** Senior researcher

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

Principal investigator: Felipe Ángel Calvo Manuel
Title: System for teleguidance, planning and pre-robotic automatization for intraoperative radiation therapy I.
Funding body: Instituto de Salud Carlos III
Start date: 2012
End date: 2014

INTERDISCIPLINARY ONCOLOGY AND BIOTECHNOLOGY

Theses

| Doctoral student | Title | Director | University |
|-----------------------------|---|---|-----------------------------------|
| Roberto Molina Escudero | Modelo predictivo para La recidiva bioquímica en los pacientes con cáncer de próstata localizado tratados con prostatectomía radical en monoterapia | Carlos Hernández Fernández, Felipe B. Herranz Amo | Universidad Complutense de Madrid |
| Fredy Raul Atahualpa Arenas | Contribución de la radioterapia intraoperatoria en el tratamiento del cáncer de páncreas localmente avanzado resecado | José Luis García Sabrido, Felipe 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: 77.5

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

- Calvo FA; Sole CV; Serrano J; Rodriguez M; Marcos F; Munoz-Calero A; Zorrilla J; Lopez-Baena JA; Diaz-Zorita B; Garcia-Sabrido JL; del Valle E. Postchemoradiation laparoscopic resection and intraoperative electron-beam radiation boost in locally advanced rectal cancer: long-term outcomes. *JOURNAL OF CANCER RESEARCH AND CLINICAL*

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- Calvo FA; Sole CV; Obregon R; Gomez-Espi M; Lozano MA; Gonzalez-Bayon L; Garcia-Sabrido JL. Postchemoradiation Resected Locally Advanced Esophageal and Gastroesophageal Junction Carcinoma: Long-Term Outcome With or Without Intraoperative Radiotherapy. *ANNALS OF SURGICAL ONCOLOGY*. 2013; 20(6) 1962-1969. IF: 3.943. Quartile: 1.
- Calvo FA; Sole CV; Gonzalez ME; Tangco ED; Lopez-Tarjuelo J; Koubchene I; Santos JA; Pascau J; Herranz R; Ferrer C. Research opportunities in intraoperative radiation therapy: the next decade 2013-2023. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(9) 683-690. IF: 1.6. Quartile: 4.
- Zapatero A; Lopez-Torrecilla J; Herruzo I; Calvo FA. Practice patterns in the management of prostate cancer in Spain: results from a national survey among radiation oncologists in 2009. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(3) 226-232. IF: 1.6. Quartile: 4.
- Olarte JMN; Jimenez MC; Aznar CP; Isac MS; Sanchez NC; Garzon MLS; Mendez SG. Clinical audit of the management of terminal amyotrophic lateral sclerosis (ALS): preliminary results. *MEDICINA PALIATIVA*. 2013; 20(4) 133-142. IF: 0.162. Quartile: 4.
- Guzman-Fulgencio M; Berenguer J; Garcia-Alvarez M; Fernandez-Rodriguez A; Jimenez-Sousa MA; Alvarez E; Micheloud D; Lopez JC; Miralles P; Cosin J; Catalan P; Resino S. IL28B polymorphisms are associated with severity of liver disease in human immunodeficiency virus (HIV) patients coinfecte with hepatitis C virus. *JOURNAL OF INFECTION*. 2013; 66(2) 170-178. IF: 4.017. Quartile: 1.
- Aviles-Izquierdo JA; Lazaro-Ochaita P; Suarez-Fernandez R; Marquez-Rodas I; Parra-Blanco V; Escat-Cortes JL. Epidemiological changes in cutaneous melanoma: retrospective study of 969 cases (1996-2010). *REVISTA CLINICA ESPANOLA*. 2013; 213(2) 81-87. IF: 1.314. Quartile: 3.
- Calvo FA; Sole CV; Lozano MA; Gonzalez-Bayon L; Gonzalez-Sansegundo C; Alvarez A; Blanco J; Calin A; Lizarraga S; Ga.

INTERDISCIPLINARY ONCOLOGY AND BIOTECHNOLOGY

- Intraoperative electron beam radiotherapy and extended surgical resection for gynecological pelvic recurrent malignancies with and without external beam radiation therapy: Long-term outcomes. *GYNECOLOGIC ONCOLOGY*. 2013; 130(3) 537-544. IF: 3.687. Quartile: 1.
- Calvo FA; Sole CV; Obregon R; Gomez-Espi M; Gonzalez-San Segundo C; Gonzalez-Bayon L; Alvarez E; Garcia-Sabrido JL. Intraoperative radiotherapy for the treatment of resectable locally advanced gastric adenocarcinoma: topography of locoregional recurrences and long-term outcomes. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(6) 443-449. IF: 1.6. Quartile: 4.
 - Calvo FA; Sole CV; Martinez-Monge R; Azinovic I; Aristu J; Zudaire J; Garcia-Sabrido JL; Berian JM. Intraoperative EBRT and resection for renal cell carcinoma. Twenty-year outcomes. *STRAHLENTHERAPIE UND ONKOLOGIE*. 2013; 189(2) 129-136. IF: 2.733. Quartile: 2.
 - Sole CV; Calvo FA; Alvarez E; Peligros I; Garcia-Alfonso P; Ferrer C; Ochoa E; Herranz R; Carreras JL. Clinical significance of VEGFR-2 and F-18-FDG PET/CT SUVmax pretreatment score in predicting the long-term outcome of patients with locally advanced rectal cancer treated with neoadjuvant therapy. *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*. 2013; 40(11) 1635-1644. IF: 5.217. Quartile: 1.
 - Calvo FA; Sole CV; de Sierra PA; Gomez-Espi M; Blanco J; Lozano MA; del Valle E; Rodriguez M; Munoz-Calero A. Prognostic Impact of External Beam Radiation Therapy in Patients Treated With and Without Extended Surgery and Intraoperative Electrons for Locally Recurrent Rectal Cancer: 16-Year Experience in a Single Institution. *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*. 2013; 86(5) 892-900. IF: 4.176. Quartile: 1.
 - Garrido P; Rosell R; Arellano A; Andreu F; Domine M; Perez-Casas A; Cardenal F; Arnaiz MD; Moran T; Morera R; Isla D; Valencia J; Cobo M; Delgado R; Garcia-Gomez R; Calvo F; Zamora J; Ramos A; Massuti B. Randomized phase II trial of non-platinum induction or consolidation chemotherapy plus concomitant chemoradiation in stage III NSCLC patients: Mature results of the Spanish Lung Cancer Group 0008 study. *LUNG CANCER*. 2013; 81(1) 84-90. IF: 3.737. Quartile: 1.
 - Oliver JL; Amigo SV; Garcia JS; Toledo GP; Cidoncha EM; Sanchez MS; Fuentes FT. Adjustable gastric band as surgical treatment for morbid obesity. Are worldwide results reproducible in Spain?. *CIRUGIA ESPAÑOLA*. 2013; 91(5) 301-307. IF: 0.89. Quartile: 3.
 - Olarte JMN; Babarro AA. Palliative care and the health crisis in Spain. *MEDICINA PALIATIVA*. 2013; 20(2) 41-43. IF: 0.162. Quartile: 4.
 - Esteves MB; Al-Lal YM; Garcia LEB; Fuentes FT. Brachiocephalic artery laceration caused by a knife wound. *CIRUGIA ESPANOLA*. 2013; 91(4) 263-263. IF: 0.89. Quartile: 3.
 - Turegano F; Lennquist S. Editorial Material, Untitled. *EUROPEAN JOURNAL OF TRAUMA AND EMERGENCY SURGERY*. 2013; 39(2) 105-106. IF: 0.38. Quartile: 4.
 - Calvo FA; Sole CV; de la Mata D; Cabezon L; Gomez-Espi M; Alvarez E; Madariaga P; Carreras JL. F-18-FDG PET/CT-based treatment response evaluation in locally advanced rectal cancer: a prospective validation of long-term outcomes. *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*. 2013; 40(5) 657-667. IF: 5.217. Quartile: 1.
 - Huerta L; Rancan L; Simon C; Isea J; Vidaurre E; Vara E; Garutti I; Gonzalez-Aragoneses F. Ischaemic preconditioning prevents the liver inflammatory response to lung ischaemia/reperfusion in a swine lung autotransplant model. *EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY*. 2013; 43(6) 1194-1201. IF: 2.814. Quartile: 1.
 - Fernandez-Ortiz A; Jimenez-Borreguero LJ; Penalvo JL; Ordovas JM; Mocoroa A; Fernandez-Friera L; Laclaustra M; Garcia L; Molina J; Mendiguren JM; Lopez-Melgar B; de Vega VM; Alonso-Farto JC; Guallar E; Sillesen H; Rudd JHF; Fayad ZA; Ibanez B; Sanz G; Fus. The Progression and Early detection of Subclinical Atherosclerosis (PESA) study: Rationale and design. *AMERICAN HEART JOURNAL*. 2013; 166(6) 990-998. IF: 4.555. Quartile: 1.
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- Calvo F; Ponce CG; Beltran MM; Dehesa AS. Multidisciplinary management of locally advanced-borderline resectable adenocarcinoma of the head of the pancreas. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(3) 173-181. IF: 1.6. Quartile: 4.
- Usyckhin S; Calvo F; dos Santos MA; Samblas J; de Urbina DO; Bustos JC; Diaz JAG; Sallabanda K; Sanz A; Yelamos C; Peraza C; Delgado JM; Marsiglia H. Intra-operative electron beam radiotherapy for newly diagnosed and recurrent malignant gliomas: feasibility and long-term outcomes. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(1) 33-38. IF: 1.6. Quartile: 4.
- Sole CV; Guerra JLL; Matute R; Jaen J; Puebla F; Rivin E; Sanchez-Reyes A; Beltran C; Bourgier C; Calvo FA; Marsiglia H. Stereotactic ablative radiotherapy delivered by image-guided helical tomotherapy for extracranial oligometastases. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(6) 484-491. IF: 1.6. Quartile: 4.
- Fernandez-Rodriguez A; Berenguer J; Jimenez-Sousa MA; Guzman-Fulgencio M; Micheloud D; Miralles P; Lopez JC; Bellon JM; Aldamiz-Echevarria T; Garcia-Broncano P; Carrero A; Prediction of Hepatic Fibrosis in Patients Coinfected With HIV and Hepatitis C Virus Based on Genetic Markers. *JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES*. 2013; 64(5) 434-442. IF: 4.394. Quartile: 1.
- Garcia-Vazquez V; Marinello E; Santos-Miranda JA; Calvo FA; Desco M; Pascau J. Feasibility of integrating a multi-camera optical tracking system in intra-operative electron radiation therapy scenarios. *PHYSICS IN MEDICINE AND BIOLOGY*. 2013; 58(24) 8769-8782. IF: 2.922. Quartile: 1.
- Garcia-Garcia V; Bascones-Martinez A; Garcia-Kass AI; Martinelli-Klay CP; Kuffer R; Alvarez-Fernandez E; Lombardi T. Analysis of the expression of heat-shock protein 27 in patients with oral lichen planus. *ORAL DISEASES*. 2013; 19(1) 65-72. IF: 2.404. Quartile: 1.
- Fuertes MJ; Navarro DC; Navalón JM; Fuentes FT; Esparragon JC; Yuste P; Tocino JMS; Soto SN; Montmany S. Spleen injuries in Spain: At what point are we?. *CIRUGIA ESPANOLA*. 2013; 91(9) 584-589. IF: 0.89. Quartile: 3.
- Jimenez PA; Perez AQ; Olarte JMN. Aberrant behaviours associated with the use of fentanyl in terminal cancer patients: presentation of a case. *MEDICINA PALIATIVA*. 2013; 20(1) 26-31. IF: 0.162. Quartile: 4.
- Krengli M; Calvo FA; Sedlmayer F; Sole CV; Fastner G; Alessandro M; Maluta S; Corvo R; Sperk E; Litoborski M; Pisani C; Fillini C; Fusconi F; Osti MF; Tomio L; Marsiglia H; Ciabattoni A; Polkowski W; Di Grazia A; Gava A; Kuten A; Iotti C; Gonzalez. Clinical and technical characteristics of intraoperative radiotherapy Analysis of the ISORT-Europe database. *STRAHLENTHERAPIE UND ONKOLOGIE*. 2013; 189(9) 729-737. IF: 2.733. Quartile: 2.
- Garcia-Alvarez M; Berenguer J; Alvarez E; Guzman-Fulgencio M; Cosin J; Miralles P; Catalan P; Lopez JC; Rodriguez JM; Micheloud D; Munoz-Fernandez MA; Resino. Association of torque teno virus (TTV) and torque teno mini virus (TTMV) with liver disease among patients coinfected with human immunodeficiency virus and hepatitis C virus. *EUROPEAN JOURNAL OF CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES*. 2013; 32(2) 289-297. IF: 2.544. Quartile: 2.
- Calvo FA; Sole CV; Atahualpa F; Lozano MA; Gomez-Espi M; Calin A; Garcia-Alfonso P; Gonzalez-Bayon L; Herranz R. Chemoradiation for resected pancreatic adenocarcinoma with or without intraoperative radiation therapy boost: Long-term outcomes. *PANCREATOLOGY*. 2013; 13(6) 576-582. IF: 2.504. Quartile: 2.

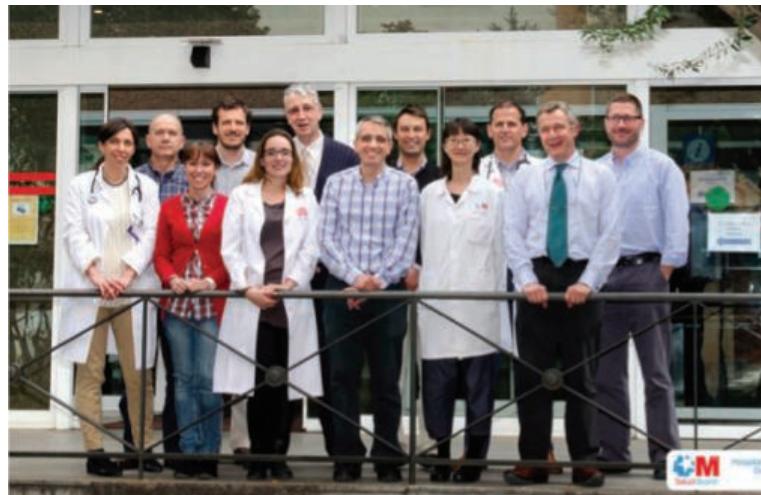
INTERDISCIPLINARY ONCOLOGY AND BIOTECHNOLOGY

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 21 | 46.4 |
| Joint publications | 11 | 31.1 |
| First-decile publications | 4 | 18.1 |
| First-quartile publications | 12 | 47.1 |
| Second-quartile publications | 6 | 15.9 |
| Third-quartile publications | 4 | 4.0 |
| Fourth-quartile publications | 10 | 10.5 |
| Nonindexed publications | 0 | - |
| Total publications | 32 | 77.5 |

GENETICS AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCY AND STEM CELL TRANSPLANTATION

Group Director: Dr. José Luis Díez Martín

Group type: Consolidated



Programs and research lines

P1: Hematopoietic stem cell transplant

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

P2: Diagnosis and treatment of hematologic malignancy

- L1: Stratified treatment of acute leukemia according to the results of flow cytometry and genetic studies.
- L2: Genetic markers in the diagnosis, prognosis, and treatment of hematologic malignancy.

P3: Cell therapy in patients with hematologic disease.

L1: Donor lymphocyte infusion in patients undergoing hematopoietic stem cell transplantation.

L2: Mesenchymal cell infusion for the treatment of graft-versus-host disease in transplant recipients.

L3: Mesenchymal cell infusion for the treatment of hemorrhagic cystitis in transplant recipients.

The research team led by Dr. José Luis Díez Martín was created in 1997. Its initial objectives focused on management of hematopoietic stem cell transplantation and how genetics could help to improve it. 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.

GENETICS AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCY AND STEM CELL TRANSPLANTATION

3) Cell therapy in patients with hematologic disease. This line is based on the use of cells to treat different 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 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:** Predoctoral
- **Mariana Bastos Oreiro:** Predoctoral
- **Elena Bucés González:** Predoctoral
- **Ismael Buño Borde:** Senior researcher
- **José Luís Díez Martín:** Postdoctoral
- **Cristina Encinas Rodríguez:** Predoctoral
- **Patricia Font López:** Predoctoral
- **Ana María García García:** Data management
- **Jorge Gayoso Cruz:** Predoctoral
- **Mi Kwon:** Predoctoral
- **Carolina Martínez Laperche:** Postdoctoral
- **Francisco Javier Menárguez Palanca:** Postdoctoral
- **Cristina Muñoz Martínez:** Data management
- **Santiago Osorio Prendes:** Predoctoral
- **David Serrano Simonneau:** Predoctoral
- **Ainhoa Simón Zárate:** Support technician

Research Projects – Competitive Calls

Principal investigator: Ana María García García
Title: Convocatoria Lifelong Learning Programm 2011.
Funding body: Comisión Europea
Start date: 2011
End date: 2014

Principal investigator: Jorge Gayoso Cruz

Title: Tratamiento de la cistitis hemorrágica severa post-trasplante alogénico con células mesenquimales.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2012

End date: 2013

Principal investigator: Ismael Buño Borde

Title: Definición de un índice pronóstico basado en el perfil genético de polimorfismos en citocinas para el manejo clínico anticipado de la EICH y otras complicaciones post-trasplante alogénico de progenitores hematopoyéticos. Banco de ADN del GETH.

Funding body: Fundación LAIR

Start date: 2012

End date: 2014

Principal investigator: David Serrano Simonneau

Title: Cuantificación de las células madre mesenquimales autólogas infundidas en el tratamiento de pacientes diagnósticos de necrosis vascular de la cabeza del fémur.

Funding body: F. Mapfre Medicina

Start date: 2012

End date: 2013

Principal investigator: José Luis Díez Martín

Title: Evaluación de la reconstitución inmune después del trasplante haploidéntico de progenitores hemopoyéticos sin depleción T.

Funding body: F. Mutua Madrileña

Start date: 2012

End date: 2015

Principal investigator: Ismael Buño Borde

Title: Análisis masivo de polimorfismos en genes de citocinas y quimocinas y de su asociación con el desarrollo de EICH post-trasplante hematopoyético alogénico. Banco de ADN del GETH.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

GENETICS AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCY AND STEM CELL TRANSPLANTATION

Principal investigator: ANGUITA VELASCO, JAVIER

Title: Estudio de la alorreactividad kir en el trasplante haploidéntico: Valoración integral para la elección del mejor donante.

Funding body: F. Mutua Madrileña

Start date: 2013

End date: 2016

Theses

| Doctoral student | Title | Director | University |
|-------------------------------|--|---|--------------------------------|
| Carlos Javier Anguita Velasco | Estudio observacional según práctica clínica de la actividad movilizadora de un biosimilar de factor estimulante de colonias de granulocitos en pacientes con linfoma o mieloma candidatos a trasplante autólogo de progenitores hematopoyéticos | José Luis Díez Martín, Ismael Buño Borde, José Rafael Cabrera Marín | Universidad Autónoma de Madrid |

Patentes y Propiedad Intelectual

Title: Herramienta informática para la Gestión Electrónica de la Agenda de Transplante Hematopoyético «gesTHronica»

Reference: M-006478/2004

Owner: FIBHGM

Autors: Pascual Balsalobre, Ismael Buño, José Luis Díez

Publications

Total impact factor: 76.4

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

- Martin-Sanchez E; Rodriguez-Pinilla SM; Sanchez-Beato M; Lombardia L; Dominguez-Gonzalez B; Romero D; Odqvist L; Garcia-Sanz P; Wozniak MB; Kurz G; Blanco-Aparicio C; Mollejo M; Alves FJ; Menarguez J; Gonzalez-Palacios F; Rodriguez-Peralto JL; Ortiz-Romer. Simultaneous inhibition of pan-phosphatidylinositol-3-kinases and MEK as a potential therapeutic strategy in peripheral T-cell lymphomas. HAEMATOLOGICA-THE HEMATOLOGY JOURNAL. 2013; 98(1) 57-64. IF: 5.868. Quartile: 1.
- van de Loosdrecht AA; Ireland R; Kern W; Della Porta MG; Alhan C; Balleisen JS; Bettelheim P; Bowen DT; Burbury K; Eidenschink L; Cazzola M; Chu SSC; Cullen M; Cutler JA; Drager AM; Feuillard J; Fenaux P; Font P; Germing U; Haase D; Hellstrom-Lindberg E; Rationale for the clinical application of flow cytometry in patients with myelodysplastic syndromes: position paper of an International Consortium and the European LeukemiaNet Working Group. LEUKEMIA & LYMPHOMA. 2013; 54(3) 472-475. IF: 2.605. Quartile: 2.
- Perez AP; Lopez FC; Simoneau DS; Nofuentes PB; Fernandez RS. Abdominal necrotic plaque in an immunocompromised patient. JOURNAL OF THE AMERICAN ACADEMY OF DERMATOLOGY. 2013; 69(2). IF: 5.004. Quartile: 1.
- Pelaez T; Alvarez-Perez S; Mellado E; Serrano D; Valerio M; Blanco JL; Garcia ME; Munoz P; Cuenca-Estrella M; Bouza E. Invasive aspergillosis caused by cryptic Aspergillus species: a report of two consecutive episodes in a patient with leukaemia. JOURNAL OF MEDICAL MICROBIOLOGY. 2013; 62(3) 474-478. IF: 2.266. Quartile: 3.
- Sanz J; Picardi A; Boluda JCH; Martin C; Ferrá C; Nozzoli C; Gonzalez-Vicent M; Rambaldi A; Valcarcel D; Verdeguer A; Serrano D; de Heredia CD; Pascual MJ; de Paz R; Montesinos P; Bartolozzi B; Algarotti A; Sanz MA; Arcese W; Sanz GF. Impact of Graft-versus-Host Disease Prophylaxis on Outcomes after Myeloablative Single-Unit Umbilical

GENETICS AND CLINICAL ASPECTS OF HEMATOLOGIC MALIGNANCY AND STEM CELL TRANSPLANTATION

Cord Blood Transplantation. BIOLOGY OF BLOOD AND MARROW TRANSPLANTATION. 2013; 19(9) 1387-1392. IF: 3.348. Quartile: 2.

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- Guillem V; Hernandez-Boluda JC; Gallardo D; Buno I; Bosch A; Martinez-Laperche C; de la Camara R; Brunet S; Martin C; Nieto JB; Martinez C; Perez A; Montoro J; Garcia-Noblejas A; Solano C. A polymorphism in the TYMP gene is associated with the outcome of HLA-identical sibling allogeneic stem cell transplantation. AMERICAN JOURNAL OF HEMATOLOGY. 2013; 88(10) 883-889. IF: 3.477. Quartile: 2.

Publications in nonindexed journals in the Journal Citation Reports

- Borregón P; Menárguez J; Navarro N; Campos M. Transient myeloproliferative syndrome associated with Down syndrome. Actas Dermosifiliogr. 2013; 104(1):82-3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 4 | 11.0 |
| Joint publications | 14 | 65.4 |
| First-decile publications | 5 | 34.7 |
| First-quartile publications | 7 | 44.6 |
| Second-quartile publications | 8 | 24.6 |
| Third-quartile publications | 3 | 7.1 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 1 | - |
| Total publications | 19 | 76.4 |

SURGICAL ONCOLOGY

Group Director: Luis González Bayón

Group type: Emerging



Programs and research 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 tumors.

P3: Treatment of gastric cancer with carcinomatosis by means of preoperative bidirectional chemotherapy and chemoradiotherapy + HIPEC.

L1: Morbidity and mortality of the procedure.

L2: Overall and disease-free survival.

Group members

- **José Manuel Asencio Pascual:** Predoctoral
- **José Luis García Sabrido:** Postdoctoral
- **Luis González Bayón:** Group director
- **Luis Rodríguez-Bachiller Villaronga:** Predoctoral
- **Wenceslao Vásquez Jiménez:** Postdoctoral

SURGICAL ONCOLOGY

Theses

| Doctoral student | Title | Director | University |
|-----------------------------|--|---|-----------------------------------|
| Fredy Raul Atahualpa Arenas | Contribución de la radioterapia intraoperatoria en el tratamiento del cáncer de páncreas localmente avanzado resecado | José Luis García Sabrido, Felipe Calvo Manuel | Universidad Complutense de Madrid |
| José Ángel López Baena | Aclaramiento del verde de indocianina y flujos vasculares hepáticos intraoperatorios. Utilidad en la predicción de la función precoz del injerto hepático cadáverico completo, daño biliar no anastomótico y supervivencia | Jose Luis García Sabrido, Rafael Bañares | Universidad Complutense de Madrid |

Publications

Total impact factor: 25.7

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

- Calvo FA; Sole CV; Lozano MA; Gonzalez-Bayon L; Gonzalez-Sansegundo C; Alvarez A; Blanco J; Calin A; Lizarraga S; Ga. Intraoperative electron beam radiotherapy and extended surgical resection for gynecological pelvic recurrent malignancies with and without external beam radiation therapy: Long-term outcomes. *GYNECOLOGIC ONCOLOGY*. 2013; 130(3) 537-544. IF: 3.687. Quartile: 1.
- Bayon LG; Steiner MA; Jimenez WV; Asencio JM; de Sierra PA; Arenas FA; del Campo JR; Sabrido JLG. Cytoreductive surgery and hyperthermic intraperitoneal chemotherapy for the treatment of advanced epithelial ovarian carcinoma: Upfront therapy, at first recurrence, or later?. *EJSO*. 2013; 39(10) 1109-1115. IF: 2.892. Quartile: 1.

- Calvo FA; Sole CV; Serrano J; Rodriguez M; Marcos F; Munoz-Calero A; Zorrilla J; Lopez-Baena JA; Diaz-Zorita B; Garcia-Sabrido JL; del Valle E. Postchemoradiation laparoscopic resection and intraoperative electron-beam radiation boost in locally advanced rectal cancer: long-term outcomes. *JOURNAL OF CANCER RESEARCH AND CLINICAL ONCOLOGY*. 2013; 139(11) 1825-1833. IF: 3.009. Quartile: 2.
- Calvo FA; Sole CV; Atahualpa F; Lozano MA; Gomez-Espi M; Calin A; Garcia-Alfonso P; Gonzalez-Bayon L; Herranz R. Chemoradiation for resected pancreatic adenocarcinoma with or without intraoperative radiation therapy boost: Long-term outcomes. *PANCREATOLOGY*. 2013; 13(6) 576-582. IF: 2.504. Quartile: 2.
- Calvo FA; Sole CV; Martinez-Monge R; Azinovic I; Aristu J; Zudaire J; Garcia-Sabrido JL; Berian JM. Intraoperative EBRT and resection for renal cell carcinoma. Twenty-year outcomes. *STRAHLENTHERAPIE UND ONKOLOGIE*. 2013; 189(2) 129-136. IF: 2.733. Quartile: 2.
- Calvo FA; Sole CV; Obregon R; Gomez-Espi M; Gonzalez-San Segundo C; Gonzalez-Bayon L; Alvarez E; Garcia-Sabrido JL. Intraoperative radiotherapy for the treatment of resectable locally advanced gastric adenocarcinoma: topography of locoregional recurrences and long-term outcomes. *CLINICAL & TRANSLATIONAL ONCOLOGY*. 2013; 15(6) 443-449. IF: 1.6. Quartile: 4.
- Calvo FA; Sole CV; Obregon R; Gomez-Espi M; Lozano MA; Gonzalez-Bayon L; Garcia-Sabrido JL. Postchemoradiation Resected Locally Advanced Esophageal and Gastroesophageal Junction Carcinoma: Long-Term Outcome With or Without Intraoperative Radiotherapy. *ANNALS OF SURGICAL ONCOLOGY*. 2013; 20(6) 1962-1969. IF: 3.943. Quartile: 1.
- Calvo FA; Sole CV; de Sierra PA; Gomez-Espi M; Blanco J; Lozano MA; del Valle E; Rodriguez M; Munoz-Calero A. Prognostic Impact of External Beam Radiation Therapy in Patients Treated With and Without Extended Surgery and Intraoperative Electrons for Locally Recurrent Rectal Cancer: 16-Year Experience in a Single Institution. *INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS*. 2013; 86(5) 892-900. IF: 4.176. Quartile: 1.

SURGICAL ONCOLOGY

- Asencio JM; Vaquero J; Olmedilla L; Sabrido JLG. "Small-for-flow" syndrome: Shifting the "size" paradigm. MEDICAL HYPOTHESES. 2013; 80(5) 573-577. IF: 1.152. Quartile: 4.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 7 | 20.0 |
| Joint publications | 2 | 5.7 |
| First-decile publications | 2 | 7.6 |
| First-quartile publications | 4 | 14.7 |
| Second-quartile publications | 3 | 8.2 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 2 | 2.8 |
| Nonindexed publications | 0 | - |
| Total publications | 9 | 25.7 |

HEMATOLOGIC ONCOLOGY IN PEDIATRIC PATIENTS

Group Director: Dr. Elena Cela de Julián

Group 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.

Group members

- Cristina Beléndez: Predoctoral
- Elena Cela de Julián: Group director
- Paloma María Galarón García: Predoctoral
- Carmen Garrido Colino: Predoctoral
- Cristina Mata Fernández: Predoctoral
- Gabriela Medín Block: Predoctoral
- Rosario Zamarro Arranz: Predoctoral

HEMATOLOGIC ONCOLOGY IN PEDIATRIC PATIENTS

Theses

| Doctoral student | Title | Director | University |
|-----------------------|--|--|-----------------------------------|
| Carmen Garrido Colino | Déficit de vitamina D y salud ósea en niños con enfermedad de células falciformes de la comunidad de Madrid: medidas de intervención | Elena Cela de Julián, Teresa Hernández Sampelayo | Universidad Complutense de Madrid |

Publications

Total impact factor: 1.9

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

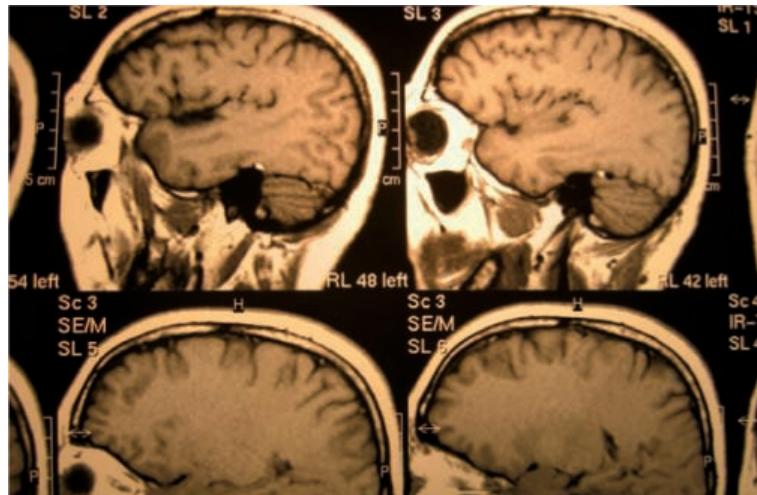
- Ropero P; Gonzalez FA; Cela E; Belendez C; Perez B; Seri C; Fontanes E; Villegas A; Diaz-Mediavilla J. ERYTHROCYTOSIS IN A CHILD DUE TO Hb ANDREW-MINNEAPOLIS [beta 144(HC1)Lys -> Asn (AAG > AAT or AAC)] ASSOCIATED WITH A SPANISH (delta beta)(0)-THALASSEMIA. HEMOGLOBIN. 2013; 37(1) 48-55. IF: 0.955. Quartile: 4.
- Ropero P; Gonzalez FA; Cela E; Belendez C; Cervera A; Martinez-Nieto J; de la Fuente-Gonzalo F; Vinuesa L; Villegas A; Diaz-Mediavilla J. ASSOCIATION IN CIS OF THE MUTATIONS+20 (C > T) IN THE 5 ' UNTRANSLATED REGION AND IVS-II-745 (C > G) ON THE beta-GLOBIN GENE. HEMOGLOBIN. 2013; 37(2) 112-118. IF: 0.955. Quartile: 4.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 2 | 1.9 |
| 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 | 2 | 1.9 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 1.9 |

ANGIOGENESIS IN BRAIN TUMORS

Group Director: Dr. Juan Carlos Martínez Montero

Group type: Associated Clinical



Programs and research 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 nontumor reactive lesions.

Group members

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

Research Projects – Competitive Calls

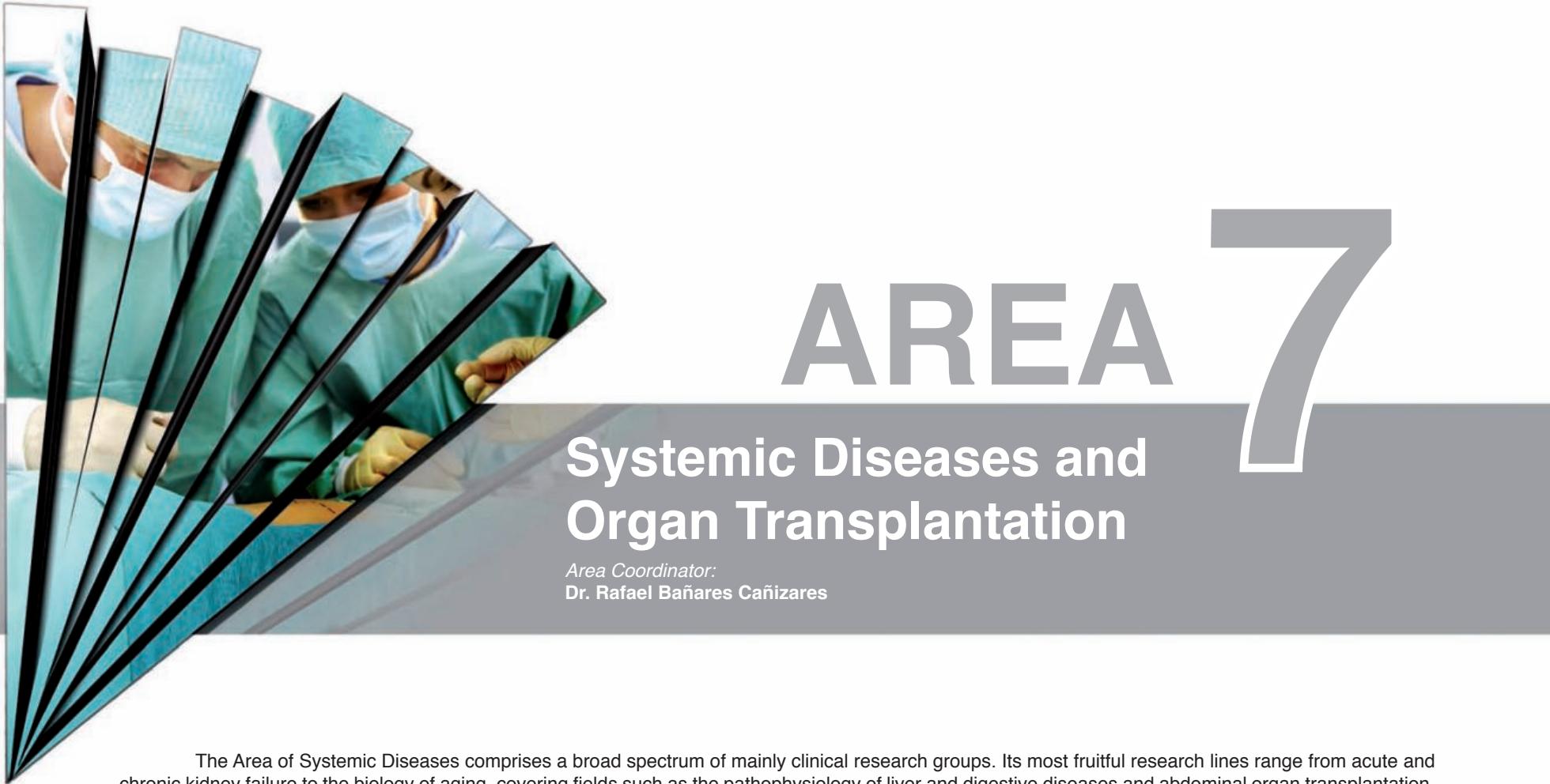
Principal investigator: Juan Carlos Martínez Montero

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



AREA 7

Systemic Diseases and Organ Transplantation

Area Coordinator:
Dr. Rafael Bañares Cañizares

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 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 involves the clear increase in scientific production 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. Research problems can only be solved by a gradual process of addressing clinical issues in the laboratory. In the third axis, scaled application of researchers and groups for competitive funding calls is promoted through appropriate support and advice, 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 AXES AND LINES

Strategic axes

A1: Promotion of partnerships 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 partnerships 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.
- Ensure 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.

RESEARCH AXES AND LINES

Strategic lines

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 the elderly.

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.

RESEARCH AXES AND LINES

Strategic lines

8. Maintenance and consolidation of scientific output.

Strategic objectives:

- Expand publications from basic science laboratories.
- Increase the number of publications in high-quality journals.
- Increase the impact factor of the Area of Systemic Diseases.

9. Creation of a basic research area in nephroprotection.

Axis 3: Training

1. Increase the offer of 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 new teaching technology in health education. Creation of an advanced medical simulation center for undergraduate and postgraduate teaching and research.

3. Improvement of 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.

RESEARCH AXES AND LINES

Strategic lines

Axis 4: Infrastructure

1. Consolidation of physical space and research equipment.

Strategic objectives:

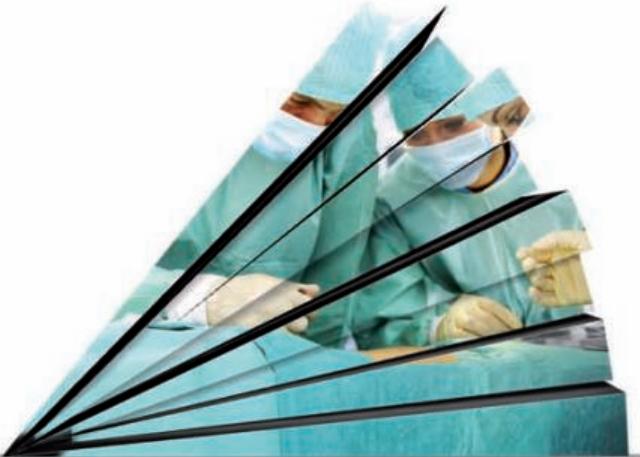
- Create a physical space for research associated with the clinical activity of the pathophysiology and natural history of liver and digestive diseases group.
- Improve the capacity and quality of biological sample storage for the research activity of the pathophysiology and natural history of liver and digestive diseases group.
- Create a physical space for the renal 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.

AREA 7: GROUPS



Systemic diseases and organ transplantation

- Pathophysiology and natural history of liver and digestive diseases
- Inflammation and vascular damage in chronic kidney disease, dialysis, and kidney transplant. Renal pathophysiology
- Diseases of the critically ill child
- Biopathology of aging
- Neonatal and developmental pathophysiology
- Pathophysiology and course of COPD
- Hospital pharmacy and pharmacogenomics
- Regenerative medicine in plastic surgery
- Anesthesia in chest surgery
- Regenerative medicine and systems development: cardiovascular and osteochondral
- Pediatric endocrinology and hereditary diseases
- Experimental kidney transplant
- Artificial circulation laboratory
- Evaluation of health services and clinical epidemiology
- Clinical nutrition
- Peritransplant evaluation of the liver
- Perianesthesia evaluation
- Pediatric endocrinology
- Regeneration and biomaterials in musculoskeletal disease
- Iron metabolism disorders
- Emergency medicine
- Pathophysiology, development, and therapeutic strategies in chronic respiratory insufficiency and respiratory sleep disorders
- Anesthesia, toxins, and arrhythmias

PATOPHYSIOLOGY AND NATURAL HISTORY OF LIVER AND DIGESTIVE DISEASES

Group Director: Dr. Rafael Bañares Cañizares

Group 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 biologic functions of the NOGO protein in the intestinal epithelium.

P4: Liver regeneration.

- L1: Mechanisms of liver regeneration.

P5: Viral hepatitis

PATHOPHYSIOLOGY AND NATURAL HISTORY OF LIVER AND DIGESTIVE DISEASES

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 basic objective of its activity is the development of 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 biologic 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 Ramón y Cajal researchers represents a considerable qualitative advance in this field.

In the clinical setting, the group's activity is mainly centered on research into the pathophysiology and clinical course of portal hypertension and 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 and have 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:** Principal investigator
- **Carolina Fernández Mena:** Predoctoral
- **Judith Gómez Camarero:** Predoctoral
- **Cecilia González Asanza:** Postdoctoral
- **Ignacio Marín Jiménez:** Predoctoral
- **Ana María Matilla Peña:** Postdoctoral
- **Pedro Menchén Fernández-Pacheco:** Postdoctoral
- **Luis Alberto Menchén Viso:** Principal investigator
- **Beatriz Merino Rodríguez:** Predoctoral
- **Óscar Nogales Rincón:** Predoctoral
- **José Antonio Pajares Díaz:** Predoctoral
- **Marta Puerto Cantero:** Postdoctoral
- **Diego Rincón Rodríguez:** Postdoctoral
- **Cristina Alberta Ripoll Noiseux:** Principal investigator
- **Juan Antonio Rodríguez Feo:** Postdoctoral
- **Magdalena Salcedo Plaza:** Postdoctoral
- **Javier Vaquero Martín:** Ramón y Cajal

Research Projects – Competitive Calls

Principal investigator: Rafael Bañares Cañizares

Title: Estudio de la producción de trombopoyetina y los mecanismos implicados en la trombopenia de la cirrosis.

Funding body: F. Mutua Madrileña

Start date: 2012

End date: 2014

Principal investigator: Rafael Bañares Cañizares

Title: Proyecto PROMIIS 2012. Infraestructuras.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

Principal investigator: Rafael Bañares Cañizares

Title: Plan estratégico de transferencia de la FIBHGM (Fase I)

01/04/2011 - 31/03/2013.

Funding body: Ministerio de Economía y Competitividad

Start date: 2011

End date: 2013

Principal investigator: Luis Alberto Menchén Viso

Title: Receptores nucleares de las células epiteliales intestinales como dianas terapéuticas en la enfermedad de Crohn.

Funding body: Instituto de Salud Carlos III

Start date: 2010

End date: 2013

Principal investigator: Cristina Alberta Ripoll Noiseux

Title: Estudio del efecto de la enoxaparina sobre la fibrosis, angiogénesis y hemodinámica hepática en pacientes con cirrosis y ratas con cirrosis por CCI4.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

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: Menchen Viso, Luis Alberto

Title: Proyecto fis 2013. 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

PATHOPHYSIOLOGY AND NATURAL HISTORY OF LIVER AND DIGESTIVE DISEASES

Theses

| Doctoral student | Title | Director | University |
|------------------------|--|---|-----------------------------------|
| Leire Pérez Latorre | Papel de la elastografía de transición en el diagnóstico de la hipertensión portal en pacientes cirróticos monoinfectados por el virus de la hepatitis C y coinfectados por el virus de la inmunodeficiencia humana. | Matilde Sánchez Conde, Juan Berenguer Berenguer, Rafael Bañares | Universidad Complutense de Madrid |
| José Ángel López Baena | Aclaramiento del verde de indocianina y flujos vasculares hepáticos intraoperatorios. Utilidad en la predicción de la función precoz del injerto hepático cadáverico completo, daño biliar no anastomótico y supervivencia | Jose Luis García Sabrido, Rafael Bañares | Universidad Complutense de Madrid |

Publications

Total impact factor: 54.9

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

- Nunes T; Etchevers MJ; Merino O; Gallego S; Garcia-Sanchez V; Marin-Jimenez I; Menchen L; Barreiro-de Acosta M; Bastida G; Garcia S; Gento E; Ginard D; Marti E; Gomollon F; Arroyo M; Monfort D; Garcia-Planella E; Gonzalez B; Loras C; Agusti C; Fig. High smoking cessation rate in Crohn's disease patients after physician advice - The TABACROHN Study. JOURNAL OF CROHNS & COLITIS. 2013; 7(3) 202-207. IF: 3.562. Quartile: 2.

- Palominos AO; Samaniego LI; Rodriguez MVC; Diaz JP; Ricote GC. Wilson's disease: clinical spectrum of liver disease. GASTROENTEROLOGIA Y HEPATOLOGIA. 2013; 36(2) 86-91. IF: 0.832. Quartile: 4.
- Banares R; Nevens F; Larsen FS; Jalan R; Albillas A; Dollinger M; Saliba F; Sauerbruch T; Klammt S; Ockenga J; Pares A; Wendon J; Brunnler T; Kramer L; Mathurin P; de la Mata M; Gasbarrini A; Mullhaupt B; Wilmer A; Laleman W; Eefsen M; Sen S; Zipprich A;. Extracorporeal albumin dialysis with the molecular adsorbent recirculating system in acute-on-chronic liver failure: The RELIEF trial. HEPATOLOGY. 2013; 57(3) 1153-1162. IF: 11.19. Quartile: 1.
- Chaparro M; Zanotti C; Burgueno P; Vera I; Bermejo F; Marin-Jimenez I; Yela C; Lopez P; Martin MD; Taxonera C; Botella B; Pajares R; Ponferrada A; Calvo M; Algaba A; Perez L; Casis B; Mate J; Orofino J; Lara N; Garcia-Losa M; Badia X; Gisbert JP. Health Care Costs of Complex Perianal Fistula in Crohn's Disease. DIGESTIVE DISEASES AND SCIENCES. 2013; 58(12) 3400-3406. IF: 2.55. Quartile: 2.
- Ripoll C; Genesca J; Araujo IK; Graupera I; Augustin S; Tejedor M; Cirera I; Aracil C; Sala M; Hernandez-Guerra M; Llop E; Escorsell A; Catalina MV; Canete N; Albillas A; Villanueva C; Abraldes JG; Banares R; Bosch J. Rebleeding Prophylaxis Improves Outcomes in Patients With Hepatocellular Carcinoma: A Multicenter Case-Control Study. HEPATOLOGY. 2013; 58(6) 2079-2088. IF: 11.19. Quartile: 1.
- Diaz-Sanchez A; Matilla A; Nunez O; Lorente R; Fernandez A; Rincon D; Campos R; Banares R; Clemente G. Serum angiopoietin-2 level as a predictor of tumor invasiveness in patients with hepatocellular carcinoma. SCANDINAVIAN JOURNAL OF GASTROENTEROLOGY. 2013; 48(3) 334-343. IF: 2.329. Quartile: 3.
- Rincon ON; Rodriguez BM; Asanza CG; Fernandez-Pacheco PM. Utility of capsule endoscopy with flexible spectral imaging color enhancement in the diagnosis of small bowel lesions. GASTROENTEROLOGIA Y HEPATOLOGIA. 2013; 36(2) 63-68. IF: 0.832. Quartile: 4.
- Nunes T; Barreiro-de Acosta M; Marin-Jimenez I; Nos P; Sans M. Oral locally active steroids in inflammatory bowel disease. JOURNAL OF

PATHOPHYSIOLOGY AND NATURAL HISTORY OF LIVER AND DIGESTIVE DISEASES

- CROHNS & COLITIS. 2013; 7(3) 183-191. IF: 3.562. Quartile: 2.
- Eslam M; Ampuero J; Jover M; Abd-Elhalim H; Rincon D; Shatat M; Camacho I; Kamal A; Lo Iacono O; Nasr Z; Grande L; Banares R; Khattab MA; Romero-Gomez M. Predicting portal hypertension and variceal bleeding using non-invasive measurements of metabolic variables. ANNALS OF HEPATOLOGY. 2013; 12(4) 588-598. IF: 2.193. Quartile: 3.
 - Fernandez-Yunquera A; Rincon D; Salcedo M; Banares R. Update on the use of direct-acting antiviral agents for the treatment of chronic hepatitis C virus infection. REVISTA ESPANOLA DE QUIMIOTERAPIA. 2013; 26(3) 189-192. IF: 0.905. Quartile: 4.
 - Diaz-Sanchez A; Matilla A; Nunez O; Rincon D; Lorente R; Lo Iacono O; Merino B; Hernando A; Campos R; Clemente G; Banares R. Serum level of soluble vascular cell adhesion molecule in patients with hepatocellular carcinoma and its association with severity of liver disease. ANNALS OF HEPATOLOGY. 2013; 12(2) 236-247. IF: 2.193. Quartile: 3.
 - Colombo M; Raoul JL; Lencioni R; Galle PR; Zucman-Rossi J; Banares R; Seehofer D; Neuhaus P; Johnson P. Multidisciplinary strategies to improve treatment outcomes in hepatocellular carcinoma: a European perspective. EUROPEAN JOURNAL OF GASTROENTEROLOGY & HEPATOLOGY. 2013; 25(6) 639-651. IF: 2.152. Quartile: 3.
 - Rincon D; Lo Iacono O; Tejedor M; Hernando A; Ripoll C; Catalina MV; Salcedo M; Matilla A; Senosiain M; Clemente G; Molinero LM. Prognostic value of hepatic venous pressure gradient in patients with compensated chronic hepatitis C-related cirrhosis. SCANDINAVIAN JOURNAL OF GASTROENTEROLOGY. 2013; 48(4) 487-495. IF: 2.329. Quartile: 3.
 - Gomez-Bravo MA; Salcedo M; Fondevila C; Suarez F; Castellote J; Rufian S; Pons JA; Alamo JM; Millan O; Brunet M. Impact of Donor and Recipient CYP3A5 and ABCB1 Genetic Polymorphisms on Tacrolimus Dosage Requirements and Rejection in Caucasian Spanish Liver Transplant Patients. JOURNAL OF CLINICAL PHARMACOLOGY. 2013; 53(11) 1146-1154. IF: 2.472. Quartile: 2.

- Nunes T; Etchevers MJ; Merino O; Gallego S; Garcia-Sanchez V; Marin-Jimenez I; Menchen L; Barreiro-de Acosta M; Bastida G; Garcia S; Gento E; Ginard D; Gomollon F; Arroyo M; Monfort D; Garcia-Planella E; Gonzalez B; Loras C; Agusti C; Figueira C; Sans M. Does Smoking Influence Crohn's Disease in the Biologic Era? The TABACROHN Study. INFLAMMATORY BOWEL DISEASES. 2013; 19(1) 23-29. IF: 5.475. Quartile: 1.
- Asencio JM; Vaquero J; Olmedilla L; Sabrido JLG. "Small-for-flow" syndrome: Shifting the "size" paradigm. MEDICAL HYPOTHESES. 2013; 80(5) 573-577. IF: 1.152. Quartile: 4.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 8 | 31.8 |
| Joint publications | 8 | 23.1 |
| First-decile publications | 2 | 22.4 |
| First-quartile publications | 3 | 27.9 |
| Second-quartile publications | 4 | 12.1 |
| Third-quartile publications | 5 | 11.2 |
| Fourth-quartile publications | 4 | 3.7 |
| Nonindexed publications | 0 | - |
| Total publications | 16 | 54.9 |

INFLAMMATION AND VASCULAR DAMAGE IN CHRONIC KIDNEY DISEASE, DIALYSIS, AND KIDNEY TRANSPLANT. RENAL PATHOPHYSIOLOGY

Group Director: Dr. José Luño Fernández

Group type: Consolidated

Research lines

- L1. Prevention and treatment of chronic kidney disease.
- L2. Evaluation of antiproteinuric treatment of 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).



Group members

- **Soraya Abad Estébanez:** Predoctoral
- **Fernando Anaya Fernández-Lomana:** Postdoctoral
- **Soledad García de Vinuesa Rojas:** Postdoctoral
- **María Ángeles Goicoechea Diezhondino:** Postdoctoral
- **Blanca Humanes Sánchez:** Postdoctoral
- **Juan Carlos Jado Rodríguez:** Predoctoral
- **Alberto Lázaro Fernández:** Postdoctoral
- **José Antonio Lázaro Manero:**
- **Juan Manuel López Gómez:** Postdoctoral
- **José Luño Fernández:** Principal investigator
- **Rosa Melero Martín:** Predoctoral
- **Marina Mojena Sánchez:** Postdoctoral
- **Ana María Pérez de José:** Postdoctoral
- **Manuel Antonio Rengel Aranda:** Postdoctoral
- **Patrocinio Rodríguez Benítez:** Predoctoral
- **María Luisa Rodríguez Ferrero:** Predoctoral
- **Alberto Tejedor Jorge:** Principal investigator
- **María Almudena Vega Martínez:** Predoctoral
- **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: El fracaso renal en la toxicidad aguda por quimioterapia oncológica y contrastes iodados: bloqueo de las balsas de colesterol del túbulos proximal como mecanismo de nefroprotección.

Funding body: F. Mutua Madrileña

Start date: 2011

End date: 2013

Principal investigator: Alberto Tejedor Jorge

Title: Aproximación experimental al desarrollo de estrategias de protección renal en la toxicidad por aguda por contrastes yodados y antibióticos nefrotóxicos.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

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

Patents

Title: Uso de la cilastatina para reducir la nefrotoxicidad en distintos compuestos

Reference: PCT/ES2008/07013

Owner: FIBHGM

Inventors: Alberto Tejedor Jorge, Alberto Lázaro Fernández, Sonia Camañ 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: 46.6

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

- Yuste C; Barraca D; Aragón-Sauco I; Vega-Martínez A; Abad S; Verdalles-Guzman U; Ruiz-Caro C; Ampuero J; Lopez-Gómez JM. Factors related with the progression of chronic kidney disease. NEFROLOGIA. 2013; 33(5) 685-691. IF: 1.442. Quartile: 3.
- Panizo N; Rivera F; Lopez-Gómez JM. Decreasing incidence of AA amyloidosis in Spain. EUROPEAN JOURNAL OF CLINICAL INVESTIGATION. 2013; 43(8) 767-773. IF: 2.834. Quartile: 1.
- Escudero-Vilaplana V; Martínez-Nieto C; Lopez-Gómez JM; Vega-Martínez A; Sanjurjo-Saez M. Equipoent Doses of Erythropoiesis-Stimulating Agents in Outpatients with Anaemia Secondary to Chronic Kidney Disease. LATIN AMERICAN JOURNAL OF PHARMACY. 2013; 32(3) 454-458. IF: 0.319. Quartile: 4.
- Quiroga B; Verde E; Abad S; Vega A; Goicoechea M; Reque J; Lopez-Gómez JM; Luno J. Detection of patients at high risk for non-occlusive mesenteric ischemia in hemodialysis. JOURNAL OF SURGICAL RESEARCH. 2013; 180(1) 51-55. IF: 2.121. Quartile: 2.
- Quiroga B; Villaverde M; Abad S; Vega A; Reque J; Lopez-Gómez JM. Diastolic Dysfunction and High Levels of New Cardiac Biomarkers as Risk Factors for Cardiovascular Events and Mortality in Hemodialysis Patients. BLOOD PURIFICATION. 2013; 36(2) 98-106. IF: 1.92. Quartile: 2.
- Goicoechea M; Rivera F; Lopez-Gómez JM. Increased prevalence of acute tubulointerstitial nephritis. NEPHROLOGY DIALYSIS TRANSPLANTATION. 2013; 28(1) 112-115. IF: 3.488. Quartile: 1.

INFLAMMATION AND VASCULAR DAMAGE IN CHRONIC KIDNEY DISEASE, DIALYSIS, AND KIDNEY TRANSPLANT. RENAL PATHOPHYSIOLOGY

- Quiroga B; Verdalles U; Reque J; de Vinuesa SG; Goicoechea M; Luno J. Cardiovascular events and mortality in chronic kidney disease (stages I-IV). *NEFROLOGIA*. 2013; 33(4) 539-545. IF: 1.442. Quartile: 3.
- Juarez GF; Luno J; Barrio V; de Vinuesa SG; Praga M; Goicoechea M; Cachofeiro V; Nieto J; Vega FF; Tato A; Gutierrez E. Effect of Dual Blockade of the Renin-Angiotensin System on the Progression of Type 2 Diabetic Nephropathy: A Randomized Trial. *AMERICAN JOURNAL OF KIDNEY DISEASES*. 2013; 61(2) 211-218. IF: 5.756. Quartile: 1.
- Macias N; Goicoechea M; de Vinuesa MSG; Verdalles U; Luno J. Urate Reduction and Renal Preservation: What Is the Evidence?. *CURRENT RHEUMATOLOGY REPORTS*. 2013; 15(12). IF: 2.454. Quartile: 3.
- Runkle I; Villabona C; Navarro A; Pose A; Forriiga F; Tejedor A; Poch E. The treatment of hyponatremia secondary to the syndrome of inappropriate antidiuretic hormone secretion. *MEDICINA CLINICA*. 2013; 141(11) 507-507. IF: 1.252. Quartile: 3.
- Yuste C; Abad S; Vega A; Barraca D; Bucalo L; Perez-de Jose A; Lopez-Gomez JM. Assessment of nutritional status in haemodialysis patients. *NEFROLOGIA*. 2013; 33(2) 243-249. IF: 1.442. Quartile: 3.
- Fernandez-Juarez G; Luno J; Barrio V; de Vinuesa SG; Praga M; Goicoechea M; Lahera V; Casas L; Oliva J. 25 (OH) Vitamin D Levels and Renal Disease Progression in Patients with Type 2 Diabetic Nephropathy and Blockade of the Renin-Angiotensin System. *CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*. 2013; 8(11) 1870-1876. IF: 5.25. Quartile: 1.
- Fermoselle C; Garcia-Arumi E; Puig-Vilanova E; Andreu AL; Urtreger AJ; Joffe EDBD; Tejedor A; Puente-Maestu L; Barreiro E. Mitochondrial dysfunction and therapeutic approaches in respiratory and limb muscles of cancer cachectic mice. *EXPERIMENTAL PHYSIOLOGY*. 2013; 98(9) 1349-1365. IF: 2.871. Quartile: 2.
- Herrero JA; Lopez-Gomez JM; Maduell F; Martin-de Francisco AL; Martin-Malo A; Martinez-Castelao A; Navarro-Gonzalez JF; Perez-Fontan M; Perez J; Selgas R; Solozabal C. Activation of vitamin D receptors in the optimization of hyperparathyroidism secondary to dialysis. *NEFROLOGIA*. 2013; 33(4) 571-584. IF: 1.442. Quartile: 3.
- Yuste C; De Vinuesa SG; Goicoechea M; Barraca D; Panizo N; Quiroga B; Luno J. Vitamin D deficiency in a Spanish cohort of patients with chronic kidney disease. *MEDICINA CLINICA*. 2013; 141(8) 338-342. IF: 1.252. Quartile: 3.
- Rojas L; Munoz P; Kestler M; Arroyo D; Guembe M; Rodriguez-Creixems M; Verde E; Bouza E. Bloodstream infections in patients with kidney disease: risk factors for poor outcome and mortality. *JOURNAL OF HOSPITAL INFECTION*. 2013; 85(3) 196-205. IF: 2.782. Quartile: 2.
- Locatelli F; Hannoudouche T; Martin-Malo A; Jacobson SH; Vanholder R; Ronco C; La Milia V; Gomez JML; Stefoni S; Maheut H; Klinger M; Krummel T; Dhondt A; Berdud I; Gaulty A. The Relationship of NT-proBNP and Dialysis Parameters with Outcome of Incident Haemodialysis Patients: Results from the Membrane Permeability Outcome Study. *BLOOD PURIFICATION*. 2013; 35(1-3) 216-223. IF: 1.92. Quartile: 2.
- Palomares I; Ramos R; Martin-Malo A; Merello JI; Praga M; Luno J; de Francisco ALM. Compliance with Mineral Metabolism Targets in Haemodialysis Patients: Moving Backwards?. *BLOOD PURIFICATION*. 2013; 36(2) 122-131. IF: 1.92. Quartile: 2.
- Escudero-Vilaplana V; Martinez-Nieto C; Lopez-Gomez JM; Vega-Martinez A; Bellon-Cano JM; Sanjurjo-Saez M. Erythropoiesis-stimulating agents in anaemia due to chronic kidney disease: a cost-minimization analysis. *INTERNATIONAL JOURNAL OF CLINICAL PHARMACY*. 2013; 35(3) 463-468. IF: 1.25. Quartile: 3.
- Puente-Maestu L; Lazaro A; Humanes B. Metabolic derangements in COPD muscle dysfunction. *JOURNAL OF APPLIED PHYSIOLOGY*. 2013; 114(9) 1282-1290. IF: 3.434. Quartile: 1.

Publications in journals without impact factor indexed Journal Citation Reports:

- Praga M; Merello JI; Palomares I; Bayh I; Marcelli D; Aljama P; Luno J. Type of Vascular Access and Survival among Very Elderly Hemodialysis Patients. *NEPHRON CLINICAL PRACTICE*. 2013; 124(1-2) 47-53.

INFLAMMATION AND VASCULAR DAMAGE IN CHRONIC KIDNEY DISEASE, DIALYSIS, AND KIDNEY TRANSPLANT. RENAL PATHOPHYSIOLOGY

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 10 | 21.8 |
| Joint publications | 10 | 24.8 |
| First-decile publications | 3 | 14.4 |
| First-quartile publications | 5 | 20.8 |
| Second-quartile publications | 6 | 13.5 |
| Third-quartile publications | 8 | 12.0 |
| Fourth-quartile publications | 1 | 0.3 |
| Nonindexed publications | 1 | - |
| Total publications | 21 | 46.6 |

DISEASES OF THE CRITICALLY ILL CHILD

Group Director: Dr. Jesús López-Herce Cid

Group 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 in 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 Maternoinfantil 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:** Post-MIR FIBHGM
- **Rafael González Cortés:** PFIS
- **Jorge López González:** Río Hortega
- **Jesús López-Herce Cid:** Senior researcher
- **Santiago Mencía Bartolomé:** Postdoctoral
- **Amelia Sánchez Galindo**
- **César Sánchez Sánchez:** Postdoctoral
- **María José Santiago Lozano:** Postdoctoral
- **María José Solana García:** Río Hortega
- **Javier Urbano Villaescusa:** Juan Rodés

DISEASES OF THE CRITICALLY ILL CHILD

Research Projects – Competitive Calls

Principal investigator: Jesús López-Herce Cid

Title: Corticoides para la prevención de las complicaciones de la vía aérea postextubación en niños en estado crítico.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2012

End date: 2013

Principal investigator: César Sánchez Sánchez

Title: Incidencia, factores relacionados y repercusión del estreñimiento en el niño crítico.

Funding body: Instituto de Salud Carlos III

Start date: 2011

End date: 2013

Principal investigator: Ángel Carrillo Álvarez

Title: Efecto de la dieta hiperproteica en el metabolismo proteico en lactantes críticamente enfermos.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

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 técnicas de depuración extrarrrenal 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: Jesús López-Herce Cid

Title: Red de salud materno-infantil y del desarrollo.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2013

Theses

| Doctoral student | Title | Director | University |
|------------------------------------|--|---|-----------------------------------|
| Jesús Cecilio López-Menchero Oliva | Péptido natriurético tipo B en niños: su relación con la insuficiencia cardíaca y utilidad pronóstica en el posoperatorio precoz de cirugía cardíaca por cardiopatías congénitas | Andrés Martínez Gutiérrez, Andrés José Alcaraz Romero | Universidad de Castilla La Mancha |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|---|--|-------------|
| Lopez-Herce J, Calvo C, Rey C, Rodriguez Nuñez A, Baltodano A | Manual de Cuidados Intensivos Pediátricos (4ª edición) | Ed Publimed |

Patents

Title: Simulador de hemofiltración (HEFISIM-1)

Reference: Solicitud

Owner: FIBHGM - SERGAS

Inventor: Jesús López-Herce Cid, Santiago Mencía Bartolomé, Antonio Rodríguez Núñez

DISEASES OF THE CRITICALLY ILL CHILD

Publications Total impact factor: 35.4

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

- Mencia S; Lopez-Herce J; Botran M; Solana MJ; Sanchez A; Rodriguez-Nunez A; Sanchez L. Evaluation of advanced medical simulation courses for training of paediatric residents in emergency situations. *ANALES DE PEDIATRIA*. 2013; 78(4) 241-247. IF: 0.772. Quartile: 4.
- Solana MJ; Sanchez C; Lopez-Herce J; Crespo M; Sanchez A; Urbano J; Botran M; Bellon JM; Carrillo A. Multichannel intraluminal impedance to study gastroesophageal reflux in mechanically ventilated children in the first 48 h after PICU admission. *NUTRITION*. 2013; 29(7-8) 972-976. IF: 3.046. Quartile: 2.
- Garcia-Figueruelo A; Urbano J; Botran M; Gonzalez-Cortes R; Solana MJ; Lopez-Gonzalez J; Lopez-Herce J. Use of laser Doppler to assess peripheral tissue perfusion in critically ill children. *ANALES DE PEDIATRIA*. 2013; 78(6) 361-366. IF: 0.772. Quartile: 4.
- Roldan-Martin MB; Rodriguez-Ogando A; Sanchez-Galindo AC; Parente-Hernandez A; Luengo-Herrero V; Sanchez-Sanchez C. Rare presentation of shock and acute mesenteric ischaemia secondary to acute adrenal insufficiency in an 11-year-old male. *JOURNAL OF PAEDIATRICS AND CHILD HEALTH*. 2013; 49(6) 498-500. IF: 1.193. Quartile: 3.
- Alvarez-Calatayud G; Perez-Moreno J; Tolin M; Sanchez C. CLINICAL APPLICATIONS OF THE USE OF PROBIOTICS IN PEDIATRICS. *NUTRICION HOSPITALARIA*. 2013; 28(3) 564-574. IF: 1.25. Quartile: 4.
- Lopez MCM; Romero AJA; Lopez ABM; Fernandez-Llamazares CM; Navarro CR. Risk assessment of thrombotic events after the use of activated factor VII. *ANALES DE PEDIATRIA*. 2013; 79(3) 177-181. IF: 0.772. Quartile: 4.
- Santiago MJ; Lopez-Herce J; Urbano J; Solana MJ; del Castillo J; Sanchez A; Bellon JM. Continuous renal replacement therapy

in children after cardiac surgery. *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*. 2013; 146(2) 448-454. IF: 3.991. Quartile: 1.

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- Manrique-Rodriguez S; Sanchez-Galindo AC; Lopez-Herce J; Calleja-Hernandez MA; Martinez-Martinez F; Iglesias-Peinado I; Carrillo-Alvarez A; Saez MS; Fernandez-Llama. Impact of implementing smart infusion pumps in a pediatric intensive care unit. *AMERICAN JOURNAL OF HEALTH-SYSTEM PHARMACY*. 2013; 70(21) 1897-1906. IF: 2.205. Quartile: 2.
- Cortes RG; Arriortua AB; Odena MP; Teresa MAG; Roig MC; Gaboli M; Martinez SG; Vergara EO; Urabayen DG; Serrano AC; Gonzalez JL; Posadas AS; Nunez AR; Paredes MCL; Gonzalez AH; Hervas CG; Villanueva AM; Ruiz EP; Callejon AC; Segura RT; Aguirre MH; Domiciliary mechanical ventilation in children: a spanish multicentre study. *ANALES DE PEDIATRIA*. 2013; 78(4) 227-233. IF: 0.772. Quartile: 4.
- Lopez-Herce J; del Castillo J; Matamoros M; Canadas S; Rodriguez-Calvo A; Cecchetti C; Rodriguez-Nunez A; Alvarez AC. Factors associated with mortality in pediatric in-hospital cardiac arrest: a prospective multicenter multinational observational study. *INTENSIVE CARE MEDICINE*. 2013; 39(2) 309-318. IF: 5.544. Quartile: 1.
- Solana MJ; Lopez-Herce J; Botran M; Urbano J; del Castillo J; Garrido B. Hemodynamic effects of intravenous omeprazole in critically ill children. *ANALES DE PEDIATRIA*. 2013; 78(3) 167-172. IF: 0.772. Quartile: 4.
- Solana MJ; Lopez-Herce J; Sanchez A; Sanchez C; Urbano J; Lopez D; Carrillo A. 0.5 mg/kg versus 1 mg/kg of Intravenous Omeprazole for the Prophylaxis of Gastrointestinal Bleeding in Critically Ill Children: A Randomized Study. *JOURNAL OF PEDIATRICS*. 2013; 162(4) 776. IF: 3.736. Quartile: 1.

DISEASES OF THE CRITICALLY ILL CHILD

- Mayordomo-Colunga J; Pons M; Lopez Y; Solana MJ; Rey C; Martinez-Cambor P; Rodriguez-Nunez A; Lopez-Herce J; Medina A; Abadesso C; Garcia-Teresa MA; Gaboli M; Garcia-Lopez M; Gonzalez-Sanchez M; Madurga-Revilla P; Gonzalez-Calvar A; Onate E. Predicting non-invasive ventilation failure in children from the SpO(2)/FiO(2) (SF) ratio. INTENSIVE CARE MEDICINE. 2013; 39(6) 1095-1103. IF: 5.544. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 11 | 26.9 |
| Joint publications | 3 | 8.5 |
| First-decile publications | 2 | 7.7 |
| First-quartile publications | 5 | 23.9 |
| Second-quartile publications | 2 | 5.3 |
| Third-quartile publications | 1 | 1.2 |
| Fourth-quartile publications | 6 | 5.1 |
| Nonindexed publications | 0 | - |
| Total publications | 14 | 35.4 |

BIOPATHOLOGY OF AGING

Group Director: Dr. José Antonio Serra Rexach

Group type: Consolidated



Programs and research 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 the 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.

Group members

- **Mar Alonso Armesto:** Predoctoral
- **Verónica Domingo García:** Postdoctoral
- **Eva Gallego González:** Predoctoral
- **Rosario Yassira Gracia de San Román:** Predoctoral
- **Eugenio Marañón Fernández:** Predoctoral
- **Nuria Montero Fernández:** Predoctoral
- **Javier Ortiz Alonso:** Principal investigator
- **Carmen Osuna del Pozo:** Predoctoral
- **José Antonio Serra Rexach:** Group director
- **Luis Silveira Guijarro:** Predoctoral
- **María Teresa Vidán Asteiz:** Principal investigator

The biopathology of aging research group has been active in the field of aging for 15 years.

The group was recently 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, analysis of the prevalence of frailty, determination of associations between frailty and chronic diseases (especially with respect to onset of disability), to discover and evaluate preventive strategies, and to 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.

BIOPATHOLOGY OF AGING

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: Comisión Europea

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

Principal investigator: José Antonio Serra Rexach

Title: RETIC de envejecimiento y fragilidad.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2014

Publications

Total impact factor: 9.0

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

- Montero-Fernandez N; Serra-Rexach JA. Role of exercise on sarcopenia in the elderly. EUROPEAN JOURNAL OF PHYSICAL AND REHABILITATION MEDICINE. 2013; 49(1) 131-143. IF: 1.946. Quartile: 1.
- Olazaran J; Valle D; Serra JA; Cano P; Muniz R. Psychotropic Medications and Falls in Nursing Homes: A Cross-Sectional Study. JOURNAL OF THE AMERICAN MEDICAL DIRECTORS ASSOCIATION. 2013; 14(3) 213-217. IF: 4.781. Quartile: 1.

- Ariza-Sole A; Formiga F; Vidan MT; Bueno H; Curos A; Aboal J; Llibre C; Rueda F; Bernal E; Cequier A. Impact of Frailty and Functional Status on Outcomes in Elderly Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary Angioplasty: Rationale and Design of the IFFANIAM Study. CLINICAL CARDIOLOGY. 2013; 36(10) 565-569. IF: 2.225. Quartile: 2.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 1 | 1.9 |
| Joint publications | 2 | 7.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 2 | 6.7 |
| Second-quartile publications | 1 | 2.2 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 3 | 9.0 |

NEONATAL AND DEVELOPMENTAL PATHOPHYSIOLOGY

Group Director: Dr. Manuel Sánchez Luna

Group type: In process of consolidation

Programs and research 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 ischemic hypoxic 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 a nonionizing neonatal imaging incubator.

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
- Evelyn Cano Jiménez: Predoctoral
- Paz Chimenti Camacho: Predoctoral
- María Luisa Franco Fernández: Predoctoral
- Elena Maderuelo Rodríguez: Predoctoral
- María Itziar Marsinyach Ros: Predoctoral
- Nelia Navarro Patiño: Predoctoral
- María Isabel Pescador Chamorro: Predoctoral
- Ana Rodríguez Sánchez de la Blanca: Predoctoral
- María del Carmen Sánchez Gómez de Orgaz: Predoctoral
- Manuel Sánchez Luna: Senior researcher
- Esther Sanz López: Predoctoral
- Sonia Villar Castro: Predoctoral
- Elena Zamora Flores: Predoctoral
- Gonzalo Zeballos Sarrato: Predoctoral
- Susana Elena Zeballos Sarrato: Predoctoral



NEONATAL AND DEVELOPMENTAL PATHOPHYSIOLOGY

Theses

| Doctoral student | Title | Director | University |
|---------------------------------|--|---------------------|-----------------------------------|
| Carmen María Cervantes Guijarro | Nuevas tecnologías, una alternativa de ayuda en Atención Primaria pediátrica | Manuel Sánchez Luna | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|---|--|
| Cortes JIA; Domingo AA; Mir LA; Roura LC; Lopez MD; Sastre JL; Marcos JCM; Prieto AP; Fraile MD; Abizanda SS; Luna MS; Perez MJS; Cardoso RT | Prevention of Neonatal Group B Sreptococcal Infection. Spanish Recommendations. Update 2012. SEIMC/SEGO/SEN/SEQ/SEMFYC Consensus Document | Enfermedades Infecciosas Y Microbiología Clínica |

Patents

Title: Incubadora para Imagen con Radiación No Ionizante

Reference: PCT/ES2007/070214

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; PCT/ES2011/000069; US20130069945

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

Publications

Total impact factor: 10.7

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

- Oteo J; Cercenado E; Vindel A; Bautista V; Fernandez-Romero S; Saez D; Padilla B; Zamora E; Campos J. Outbreak of multidrug-resistant CTX-M-15-producing Enterobacter cloacae in a neonatal intensive care unit. JOURNAL OF MEDICAL MICROBIOLOGY. 2013; 62(4) 571-575. IF: 2.266. Quartile: 3.
- Durrmeyer X; Hummler H; Sanchez-Luna M; Carnielli VP; Field D; Greenough A; Van Overmeire B; Jonsson B; Hallman M; Mercier JC; Marlow N; Johnson S; Baldassarre J. Two-Year Outcomes of a Randomized Controlled Trial of Inhaled Nitric Oxide in Premature Infants. PEDIATRICS. 2013; 132(3) E695-E703. IF: 5.297. Quartile: 1.
- Sanchez AR; Jimenez RMR; de Orgaz MCSG; Luna MS; Saez MS. Aggressive parenteral nutrition and growth velocity in preterm infants. NUTRICION HOSPITALARIA. 2013; 28(6) 2128-2134. IF: 1.25. Quartile: 4.
- Cortes JIA; Domingo AA; Mir LA; Roura LC; Lopez MD; Sastre JL; Marcos JCM; Prieto AP; Fraile MD; Abizanda SS; Luna MS; Perez MJS; Cardoso RT. Prevention of Neonatal Group B Sreptococcal Infection. Spanish Recommendations. Update 2012. SEIMC/SEGO/SEN/SEQ/SEMFYC Consensus Document. ENFERMEDADES INFECCIOSAS Y MICROBIOLOGIA CLINICA. 2013; 31(3) 159-172. IF: 1.881. Quartile: 3.

NEONATAL AND DEVELOPMENTAL PATHOPHYSIOLOGY

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 0 | 0.0 |
| Joint publications | 4 | 10.7 |
| First-decile publications | 1 | 5.3 |
| First-quartile publications | 1 | 5.3 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 4.1 |
| Fourth-quartile publications | 1 | 1.3 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 10.7 |

PATOPHYSIOLOGY AND CLINICAL ASPECTS OF COPD

Group Director: Dr. Luis Puente Maestu

Group type: In process of consolidation



Programs and research lines

P1: Clinical and therapeutic aspects of COPD.

L1: Clinical drug development.

L2: Clinical aspects of bronchoscopy and associated techniques.

P2: Pulmonary circulation.

L1: Pulmonary thromboembolism.

L2: Pulmonary hypertension.

Group members

- **María Jesús Chillón Martín:** Postdoctoral
- **Miguel Javier de Miguel Diez:** Postdoctoral
- **Marta Fuentes Alonso:** Predoctoral
- **Julia García de Pedro:** Postdoctoral
- **Fernando Pedraza Serrano:** Predoctoral
- **Luis Puente Maestu:** Group director
- **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

PATHOPHYSIOLOGY AND CLINICAL ASPECTS OF COPD

Publications

Total impact factor: 25.4

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

- Diez JD; Morgan JC; Garcia RJ. The association between COPD and heart failure risk: a review. *INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE*. 2013; 8: 305-312. IF: 2.732. Quartile: 2.
- Jimenez-Garcia R; Hernandez-Barrera V; Rodriguez-Rieiro C; de Andres AL; de Miguel-Diez J; Jimenez-Trujillo I; de Miguel AG; Carrasco-Garrido P. Hospitalizations from pandemic Influenza [A(H1N1)pdm09] infections among type 1 and 2 diabetes patients in Spain. *INFLUENZA AND OTHER RESPIRATORY VIRUSES*. 2013; 7(3) 439-447. IF: 1.895. Quartile: 3.
- de Miguel-Diez J; Jimenez-Garcia R; Hernandez-Barrera V; Puente-Maestu L; Rodriguez-Rodriguez P; de Andres AL; Carrasco-Garrido P. Trends in hospital admissions for acute exacerbation of COPD in Spain from 2006 to 2010. *RESPIRATORY MEDICINE*. 2013; 107(5) 717-723. IF: 2.917. Quartile: 2.
- Cazzola M; Lopez-Campos JL; Puente-Maestu L. The MABA approach: a new option to improve bronchodilator therapy. *EUROPEAN RESPIRATORY JOURNAL*. 2013; 42(4) 885-887. IF: 7.125. Quartile: 1.
- Fermoselle C; Garcia-Arumi E; Puig-Vilanova E; Andreu AL; Urtreger AJ; Joffe EDBD; Tejedor A; Puente-Maestu L; Barreiro E. Mitochondrial dysfunction and therapeutic approaches in respiratory and limb muscles of cancer cachectic mice. *EXPERIMENTAL PHYSIOLOGY*. 2013; 98(9) 1349-1365. IF: 2.871. Quartile: 2.
- Puente-Maestu L; Lazaro A; Humanes B. Metabolic derangements in COPD muscle dysfunction. *JOURNAL OF APPLIED PHYSIOLOGY*. 2013; 114(9) 1282-1290. IF: 3.434. Quartile: 1.
- Rodriguez-Rodriguez P; Jimenez-Garcia R; Hernandez-Barrera V; Carrasco-Garrido P; Puente-Maestu L; de Miguel-Diez J. Prevalence

of Physical Disability in Patients with Chronic Obstructive Pulmonary Disease and Associated Risk Factors. *COPD-JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE*. 2013; 10(5) 611-617. IF: 2.62. Quartile: 2.

- Garcia-Rio F; Calle M; Burgos F; Casan P; del Campo F; Galdiz JB; Giner J; Gonzalez-Mangado N; Ortega F; Maestu LP. Spirometry. *ARCHIVOS DE BRONCONEUMOLOGIA*. 2013; 49(9) 388-401. IF: 1.816. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 6 | 20.6 |
| Joint publications | 2 | 4.8 |
| First-decile publications | 2 | 10.6 |
| First-quartile publications | 2 | 10.6 |
| Second-quartile publications | 4 | 11.1 |
| Third-quartile publications | 2 | 3.7 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 8 | 25.4 |

HOSPITAL PHARMACY AND PHARMACOGENOMICS

Group Director: Dra. María Sanjurjo Sáez

Group type: In process of consolidation

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

- María Aranzazu Ais Larisgoitia: Predoctoral
- Paula Arrabal Duran: Predoctoral
- Silvia Buendía Bravo: Predoctoral
- Cristina Casado Reina: Predoctoral
- Ana de Lorenzo Pinto: Predoctoral
- Maria Esther Durán García: Predoctoral
- Vicente Escudero Vilaplana: Predoctoral
- María Isabel García García: Support technician
- Xandra García González: Predoctoral
- Raquel García Sanchez: Predoctoral
- Alvaro Giménez Manzorro: Predoctoral
- Eva Gonzalez-Haba Peña: Predoctoral
- Ana Herranz Alonso: Postdoctoral
- Sara Ibáñez García: Predoctoral
- Elena Lallana Sainz: Predoctoral
- María Elena Lobato Matilla: Predoctoral
- Luis Andrés López Fernández: Miguel Servet
- Silvia Manrique Rodríguez: Postdoctoral

- Cecilia Manzanares Secades: Postdoctoral
- Iratxe Marquínez Alonso: Predoctoral
- María Luisa Martín Barbero: Predoctoral
- Cecilia Martínez Fernández-Llamazares: Postdoctoral
- Beatriz Monje García: Predoctoral
- Ana Mur Mur: Predoctoral
- María Sagrario Pernia López: Predoctoral
- Almudena Ribed Sánchez: Predoctoral
- Carmen Guadalupe Rodríguez González: Predoctoral
- Rosa María Romero Jiménez: Postdoctoral
- Cristina Ruiz Martínez: Predoctoral
- María Norberta Sánchez Fresneda: Predoctoral
- María Sanjurjo Sáez: Senior researcher
- 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: Identificación por radiofrecuencia para la producción, distribución y dispensación de medicamentos.

Funding body: Ministerio de Industria, Turismo y Comercio

Start date: 2011

End date: 2013

Principal investigator: Sanjurjo Saez, María

Title: Proyecto FIS 2013. 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

HOSPITAL PHARMACY AND PHARMACOGENOMICS

Theses

| Doctoral student | Title | Director | University |
|---------------------------|--|--|-----------------------------------|
| Álvaro Giménez Manzorro | Impacto de un programa para la conciliación de la medicación habitual en una unidad quirúrgica | Rosa Mª Romero Jiménez, MA Calleja-Hernández, Fernando Martínez Martínez | Universidad de Granada |
| Lucía Cortejoso Fernández | Biomarcadores farmacogenéticos asociados a efectos adversos de la quimioterapia frente al cáncer colorrectal | Luis Andrés López Fernández, Irene Iglesias Peinado | Universidad Complutense de Madrid |

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|---|---------------------|
| Moral L; Torres-Borrego J; Murua JK; Valverde-Molina J; Belinchon JP; Praena-Crespo M; Casanueva CO; Callen-Blecua MT; Fernandez-Llamazares CM; Rey CC | Association between paracetamol exposure and asthma: update and practice guidelines | Anales de pediatría |

Patents and intellectual property

Title: Biblioteca de fármacos para bombas de infusión inteligentes en las unidades de cuidados intensivos pediátricos.

Reference: M-8354-10

Owner: FIBHGM.

Autores: Amelia Sánchez Caridad, Silvia Manrique Rodríguez.

Publications

Total impact factor: 51.7

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

- de Lorenzo-Pinto A; Rodriguez-Gonzalez CG; Ais-Larisgoitia A. Emerging therapies for multiple sclerosis. MEDICINA CLINICA. 2013; 140(2) 76-82. IF: 1.252. Quartile: 3.
- Fernandez-Rozadilla C; Cazier JB; Tomlinson IP; Carvajal-Carmona LG; Palles C; Lamas MJ; Baiget M; Lopez-Fernandez LA; Brea-Fernandez A; Abuli A; Bujanda L; Clofent J; Gonzalez D; Xicola R; Andreu M; Bessa X; Jover R; Llor X; Moreno V; Castells A; Carrace. A colorectal cancer genome-wide association study in a Spanish cohort identifies two variants associated with colorectal cancer risk at 1p38 and 8p12. BMC GENOMICS. 2013; 14. IF: 4.041. Quartile: 1.
- Yeste-Gomez I; Rodriguez-Gonzalez CG; Gimenez-Manzorro A; Ais-Larisgoitia A; Sanjurjo-Saez M. Information leaflets for patients with hepatitis C receiving treatment with triple therapy. EUROPEAN JOURNAL OF HOSPITAL PHARMACY-SCIENCE AND PRACTICE. 2013; 20(1) 13-19. IF: 0.471. Quartile: 4.
- Fernandez-Llamazares CM; Hernandez-Gago Y; Pozas M; Cabanas MJ; Feal B; Villaronga M; Alvarez-del-Vayo C; Valverde E. Two-round Delphi technique for the consensual design of a paediatric pharmaceutical care model. PHARMACOLOGICAL RESEARCH. 2013; 68(1) 31-37. IF: 3.976. Quartile: 1.
- Fernandez-Llamazares CM; Pozas M; Feal B; Cabanas MJ; Villaronga M; Hernandez-Gago Y; de Villegas MR; Alvarez-del-Vayo C. Profile of prescribing errors detected by clinical pharmacists in paediatric hospitals in Spain. INTERNATIONAL JOURNAL OF CLINICAL PHARMACY. 2013; 35(4) 638-646. IF: 1.25. Quartile: 3.
- Fernandez-Rozadilla C; Cazier JB; Moreno V; Crous-Bou M; Guino E; Duran G; Lamas MJ; Lopez R; Candamio S; Gallardo E; Pare L; Baiget M; Paez D; Lopez-Fernandez LA; Cortejoso L; Garcia MI; Bujanda L; Gonzalez D; Gonzalo V; R. Pharmacogenomics in colorectal cancer: a genome-wide association study to predict toxicity after 5-fluorouracil

HOSPITAL PHARMACY AND PHARMACOGENOMICS

- or FOLFOX administration. *PHARMACOGENOMICS JOURNAL*. 2013; 13(3) 209-217. IF: 5.513. Quartile: 1.
- Jimenez RMR; Lopez MSP; Fresneda MNS; Saez MS. VALIDATION OF ASEPTIC TECHNIQUE OF PARENTERAL NUTRITION COMPOUNDING IN A PHARMACY SERVICE ACCORDING TO USP CHAPTER 797. *NUTRICION HOSPITALARIA*. 2013; 28(5) 1494-1497. IF: 1.25. Quartile: 4.
 - Lopez MCM; Romero AJA; Lopez ABM; Fernandez-Llamazares CM; Navarro CR. Risk assessment of thrombotic events after the use of activated factor VII. *ANALES DE PEDIATRIA*. 2013; 79(3) 177-181. IF: 0.772. Quartile: 4.
 - Sanchez AR; Jimenez RMR; de Orgaz MCSG; Luna MS; Saez MS. Aggressive parenteral nutrition and growth velocity in preterm infants. *NUTRICION HOSPITALARIA*. 2013; 28(6) 2128-2134. IF: 1.25. Quartile: 4.
 - Berlana D; Sabin P; Gimeno-Ballester V; Romero-Jimenez R; Zapata-Rojas A; Marquez E; Martinez-Cutillas J; Schoenenberger-Arnaiz JA. Cost analysis of adult parenteral nutrition systems; three-compartment bag versus customized. *NUTRICION HOSPITALARIA*. 2013; 28(6) 2135-2141. IF: 1.25. Quartile: 4.
 - de Lorenzo-Pinto A; Cortejoso L; Muino-Miguez A; Gomez-Antunez M; Duran-Garcia E; Herranz-Alonso A; Garcia-Sanchez R; Sanjurjo-Saez M. Adequacy of Thromboembolic Prophylaxis Prescribed in an Emergency Department. *LATIN AMERICAN JOURNAL OF PHARMACY*. 2013; 32(8) 1205-1211. IF: 0.319. Quartile: 4.
 - Lasarte S; Elsner D; Sanchez-Elsner T; Fernandez-Pineda A; Lopez-Fernandez LA; Corbi AL; Munoz-Fernandez MA; Reloso M. Estradiol downregulates NF-kappa b translocation by Ikbkg transcriptional repression in dendritic cells. *GENES AND IMMUNITY*. 2013; 14(7) 462-469. IF: 3.789. Quartile: 2.
 - Escudero-Vilaplana V; Martinez-Nieto C; Lopez-Gomez JM; Vega-Martinez A; Sanjurjo-Saez M. Equipotent Doses of Erythropoiesis-Stimulating Agents in Outpatients with Anaemia Secondary to Chronic Kidney Disease. *LATIN AMERICAN JOURNAL OF PHARMACY*. 2013; 32(3) 454-458. IF: 0.319. Quartile: 4.
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 - Manrique-Rodriguez S; Sanchez-Galindo AC; Lopez-Herce J; Calleja-Hernandez MA; Martinez-Martinez F; Iglesias-Peinado I; Carrillo-Alvarez A; Saez MS; Fernandez-Llama. Impact of implementing smart infusion pumps in a pediatric intensive care unit. *AMERICAN JOURNAL OF HEALTH-SYSTEM PHARMACY*. 2013; 70(21) 1897-1906. IF: 2.205. Quartile: 2.
 - Ribed A; Quiroga B; Romero-Jimenez RM; Pernia S; Escudero-Vilaplana V; Sanjurjo-Saez M. Oral Ammonium Chloride, Treatment in Severe Metabolic Alkalosis. *LATIN AMERICAN JOURNAL OF PHARMACY*. 2013; 32(10) 1578-1580. IF: 0.319. Quartile: 4.
 - Parente A; Angulo JM; Romero R; Rivas S; Fanjul M; Tardaguila AR; Lancharro A. Endourological management in a newborn with incomplete bladder duplication. *JOURNAL OF PEDIATRIC UROLOGY*. 2013; 9(1) E19-E21. IF: 1.413. Quartile: 3. Pediat Urol-Diagnost Radiol.
 - Del Mazo J; Brieno-Enriquez MA; Garcia-Lopez J; Lopez-Fernandez LA; De Felici M. Endocrine disruptors, gene deregulation and male germ cell tumors. *INTERNATIONAL JOURNAL OF DEVELOPMENTAL BIOLOGY*. 2013; 57(2-4) 225-239. IF: 2.567. Quartile: 3.
 - Cortejoso L; Garcia MI; Garcia-Alfonso P; Gonzalez-Haba E; Escolar F; Sanjurjo M; Lopez-Fernandez LA. Differential toxicity biomarkers for irinotecan- and oxaliplatin-containing chemotherapy in colorectal cancer. *CANCER CHEMOTHERAPY AND PHARMACOLOGY*. 2013; 71(6) 1463-1472. IF: 2.571. Quartile: 2.
 - Escudero-Vilaplana V; Martinez-Nieto C; Lopez-Gomez JM; Vega-Martinez A; Bellon-Cano JM; Sanjurjo-Saez M. Erythropoiesis-stimulating agents in anaemia due to chronic kidney disease: a cost-minimization analysis. *INTERNATIONAL JOURNAL OF CLINICAL PHARMACY*. 2013; 35(3) 463-468. IF: 1.25. Quartile: 3.

HOSPITAL PHARMACY AND PHARMACOGENOMICS

- Rallon NI; Lopez-Fernandez LA; Garcia MI; Benguria A; Fiorante S; Soriano V; Benito JM. Interferon-stimulated genes are associated with peginterferon/ribavirin treatment response regardless of IL28B alleles in hepatitis C virus/HIV-coinfected patients. *AIDS*. 2013; 27(5) 687-696. IF: 6.557. Quartile: 1.
- Ramirez-Herraiz E; Escudero-Vilaplana V; Alanon-Plaza E; Trovato-Lopez N; Herranz-Alonso A; Morell-Baladron A; Sanjurjo-Saez M. Efficiency of adalimumab, etanercept and infliximab in rheumatoid arthritis patients: dosing patterns and effectiveness in daily clinical practice. *CLINICAL AND EXPERIMENTAL RHEUMATOLOGY*. 2013; 31(4) 559-565. IF: 2.973. Quartile: 2.
- Romero Jimenez RM; Calleja Hernandez MA; Chaparro Recio M; Martinez Martinez F; Sanjurjo Saez M. Effect of Pharmacotherapy Follow-Up on Treatment Adherence and Virologic and Immune Response in Patients with Human Immunodeficiency Virus. *LATIN AMERICAN JOURNAL OF PHARMACY*. 2013; 32(3) 441-447. IF: 0.319. Quartile: 4.
- Fernandez-Rozadilla C; Palles C; Carvajal-Carmona L; Peterlongo P; Nici C; Veneroni S; Pinheiro M; Teixeira MR; Moreno V; Lamas MJ; Baiget M; Lopez-Fernandez LA; Gonzalez D; Brea-Fernandez A; Clofent J; Bujanda L; Bessa X; Andreu M; Xicola R; Llor X; Jove. BMP2/BMP4 colorectal cancer susceptibility loci in northern and southern European populations. *CARCINOGENESIS*. 2013; 34(2) 314-318. IF: 5.266. Quartile: 1.

Publications without impact factor indexed in Journal Citation Reports

- Fernandez-Llamazares CM; Pozas M; Juarez-Gimenez JC; Hernandez-Gago Y; Feal B; Cabanas MJ; Villaronga M; Valverde E; Alvarez-del Vayo C. Development of a Paediatric Pharmaceutical Care Model for validating prescriptions orders in Spanish Hospitals. *ANALES DE LA REAL ACADEMIA NACIONAL DE FARMACIA*. 2013; 79(3) 481-504.

- Escudero RM; Amo FH; Gardiner JM; Borda AP; Fernandez CH. Predictors of success and hospitalization in semi-rigid ureteroscopy for lithiasis as an outpatient procedure. *ARCHIVOS ESPAÑOLES DE UROLOGIA*. 2013; 66(9) 859-864.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 14 | 19.7 |
| Joint publications | 10 | 31.9 |
| First-decile publications | 2 | 12.1 |
| First-quartile publications | 5 | 25.4 |
| Second-quartile publications | 4 | 11.5 |
| Third-quartile publications | 5 | 7.7 |
| Fourth-quartile publications | 10 | 7.0 |
| Nonindexed publications | 2 | - |
| Total publications | 26 | 51.7 |

REGENERATIVE MEDICINE IN PLASTIC SURGERY

Group Director: Dra. Rosa M^a Pérez Cano
Dr. José María Lasso Vázquez

Group type: Emerging



Research programs and lines

P1: Regenerative medicine.

- L1: Breast reconstruction with stem cells from adipose tissue.
- L2: Regeneration of peripheral nerve with stem cells.
- L3: Regeneration in other diseases.

P2: Gene therapy with viral vehicles.

- L1: VGEF in the axial nerve.
- L2: Peripheral nerve.
- L3: Vascular.

P3: Hematopoietic chimerism methods.

Group members

- Luis Javier Arenas Domingo: Predoctoral
- Edgar Alfonso Cortina Acevedo: Predoctoral
- José María Lasso Vázquez: Postdoctoral
- Paola Nava Pérez: Predoctoral
- Rosa Pérez Cano: Group director

REGENERATIVE MEDICINE IN PLASTIC SURGERY

Patents

Title: Matriz artificial de gel de fibrina endotelizada superproductora de factores proangiogénicos.

Reference: P200501182; PCT/ES2006/070059

Owner: FIBHGM.

Inventors: José M^a Lasso Vázquez, Paola Nava Pérez.

Publications

Total impact factor: 1.0

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

- Lasso JM; Cano RP. Practical Solutions for Lymphaticovenous Anastomosis. JOURNAL OF RECONSTRUCTIVE MICROSURGERY. 2013; 29(1) 1-4. IF: 1.006. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 1 | 1.0 |
| 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 | 1 | 1.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 1 | 1.0 |

ANESTHESIA IN CHEST SURGERY

Group Director: Dr. Ignacio Garutti Martínez

Group type: Emerging



Group members

- **Patricia Cruz Pardos:** Postdoctoral
- **Francisco Andrés de la Gala García:** Postdoctoral
- **Patricia Duque González:** Postdoctoral
- **María Cruz García García:** Postdoctoral
- **Ignacio Garutti Martínez:** Group director
- **Guillermo González Casaurrán:** Predoctoral
- **Patricia Piñeiro Otero:** Predoctoral
- **Carlos María Simón Adiego:** Postdoctoral
- **Elena Vara Ruiz:** Postdoctoral

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.

ANESTHESIA IN CHEST SURGERY

Research Projects – Competitive Calls

Principal investigator: Francisco Andrés de la Gala García
Title: Estudio de la respuesta inflamatoria pulmonar y sistémica secundaria a cirugía de resección pulmonar con anestesia intravenosa versus anestesia inhalatoria con agentes halogenados.
Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad
Start date: 2012
End date: 2013

Principal investigator: Ignacio Garutti Martínez
Title: Estudio de nuevas terapias para atenuar la respuesta inflamatoria secundaria a la ventilación unipulmonar en un modelo experimental de cirugía de resección pulmonar
Funding body: Instituto de Salud Carlos III
Start date: 2011
End date: 2013

Principal investigator: Simón Adiego, Carlos María
Title: Proyecto fis 2013. 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

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 1 | 2.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 2.8 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 1 | 2.8 |

Publications

Total impact factor: 2.8

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

- Huerta L; Rancan L; Simon C; Isea J; Vidaurre E; Vara E; Garutti I; Gonzalez-Aragoneses F. Ischaemic preconditioning prevents the liver inflammatory response to lung ischaemia/reperfusion in a swine lung autotransplant model. EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY. 2013; 43(6) 1194-1201. IF: 2.814. Quartile: 1.

REGENERATIVE MEDICINE AND SYSTEMS DEVELOPMENT (CARDIOVASCULAR AND OSTEOCHONDRAL)

Group Director: Dr. M^a Begoña Quintana Villamandos

Group type: Emerging

Research programs and lines

P1: Ventricular remodeling: 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

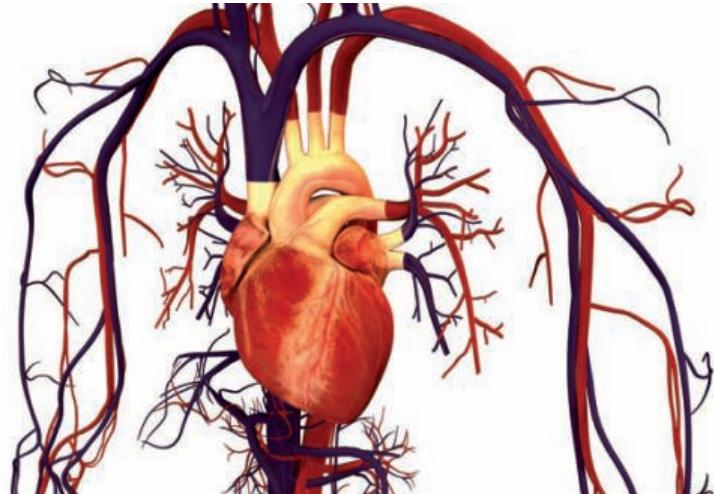
L3: Applications of confocal microscopy to the study of vascular remodeling

L4: Serum biomarkers of cardiovascular disease

L5: High-altitude pulmonary hypertension

Group members

- Silvia Magdalena Arribas Rodríguez: Postdoctoral
- Fernando Manuel Canillas del Rey: Postdoctoral
- Emilio Delgado Baeza: Senior researcher
- María Jesús Delgado Martos: Postdoctoral
- José Juan Gómez de Diego: Predoctoral
- María del Carmen González García: Postdoctoral
- Antonia Martos Rodríguez: Predoctoral
- Begoña Quintana Villamandos: Senior researcher
- Guillermo Juan Rodríguez Bernal: Predoctoral



REGENERATIVE MEDICINE AND SYSTEMS DEVELOPMENT (CARDIOVASCULAR AND OSTEOCHONDRAL)

Research Projects – Competitive Calls

Principal investigator: Begoña Quintana Villamandos

Title: Regresión precoz del remodelado ventricular tras tratamiento con esmolol en un modelo experimental de rata hipertensa

Organismo financiador: Instituto de Salud Carlos III

Año de Inicio: 2011

Año de finalización: 2013

Principal investigator: Begoña Quintana Villamandos

Title: Proyecto FIS 2013. 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

Publications

Total impact factor: 4.9

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

- Quintana-Villamandos B; Delgado-Martos MJ; Fernandez-Riveira C; Fernandez-Criado MC; Martos-Rodriguez A; Canillas F; Delgado-Baeza E. Can F-18-FDG-PET show differences in myocardial metabolism between Wistar Kyoto rats and spontaneously hypertensive rats?. LABORATORY ANIMALS. 2013; 47(4) 320-323. IF: 0.8. Quartile: 3.
- Quintana-Villamandos B; Delgado-Martos MJ; Sanchez-Hernandez JJ; de Diego JG; Fernandez-Criado MD; Canillas F; Martos-Rodriguez A; Delgado-Baeza E. Early regression of left ventricular hypertrophy after treatment with esmolol in an experimental rat model of primary hypertension. HYPERTENSION RESEARCH. 2013; 36(5) 408-413. IF: 2.936. Quartile: 2.

- Delgado-Martos MJ; Fernandez AT; Canillas F; Quintana-Villamandos B; del Riego SS; Delgado-Martos E; Martos-Rodriguez A; Delgado-Baeza E. Does the epiphyseal cartilage of the long bones have one or two ossification fronts?. MEDICAL HYPOTHESES. 2013; 81(4) 695-700. IF: 1.152. Quartile: 4.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 3 | 4.9 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 1 | 2.9 |
| Third-quartile publications | 1 | 0.8 |
| Fourth-quartile publications | 1 | 1.2 |
| Nonindexed publications | 0 | - |
| Total publications | 3 | 4.9 |

PEDIATRIC ENDOCRINOLOGY AND HEREDITARY DISEASES

Group Director: Dr. Begoña Ezquieta Zubicaray

Group 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

Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|--|--------------------|--|
| Carcavilla A, Santomé JL, Galbis L, Ezquieta B | Síndrome de Noonan | Rev Esp Endocrinol Pediatr Vol. 4 Suppl (1) 2013 |

Publications

Total impact factor: 3.3

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

- Carcavilla A; Santome JL; Pinto I; Sanchez-Pozo J; Guillen-Navarro E; Martin-Frias M; Lapunzin P; Ezquieta B. LEOPARD Syndrome: A Variant of Noonan Syndrome Strongly Associated With Hypertrophic Cardiomyopathy. REVISTA ESPANOLA DE CARDIOLOGIA. 2013; 66(5) 350-356. IF: 3.342. Quartile: 2.



PEDIATRIC ENDOCRINOLOGY AND HEREDITARY DISEASES

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 1 | 3.3 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 1 | 3.3 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 1 | 3.3 |

EXPERIMENTAL KIDNEY TRANSPLANT

Group Director: Dr. Enrique Lledó García

Group 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 reconstruction of the urethra.

L2: Application of cell therapy in regeneration of cavernous tissue.

L3: Application of cell therapy in reconstruction of the sphincter.

Group members

- **Gregorio Escribano Patiño:** Postdoctoral
- **Carlos Hernández Fernández:** Postdoctoral
- **Felipe Bernardo Herranz Amo:** Postdoctoral
- **José Jara Rascón:** Postdoctoral
- **Enrique Lledó García:** Group director
- **Gabriel Ogaya Piniés:** Predoctoral
- **David Subirá Ríos:** Predoctoral

Theses

| Doctoral student | Title | Director | University |
|-------------------------|---|---|-----------------------------------|
| Roberto Molina Escudero | Modelo predictivo para la recidiva bioquímica en los pacientes con cáncer de próstata localizado tratados con prostatectomía radical en monoterapia | Carlos Hernández Fernández, Felipe B. Herranz Amo | Universidad Complutense de Madrid |



EXPERIMENTAL KIDNEY TRANSPLANT

Publications

Total impact factor: 5.9

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

- Rascon JJ; Garcia EL. Sexual Medicine beyond History. Advances and controversies (Part II). REVISTA INTERNACIONAL DE ANDROLOGIA. 2013; 11(4) 149-157. IF: 0.22. Quartile: 4.
- Hernandez C; Morote J; Minana B; Cozar JM. The Role of Prostate-Specific Antigen in Light of New Scientific Evidence. ACTAS UROLOGICAS ESPANOLAS. 2013; 37(6) 324-329. IF: 1.148. Quartile: 4.
- Borque A; del Amo J; Esteban LM; Ars E; Hernandez C; Planas J; Arruza A; Llarena R; Palou J; Herranz F; Raventos CX; Tejedor D; Artieda M; Simon L; Martinez A; Carceller E; Suarez M; Allue M; Sanz G; Morote J. Genetic predisposition to early recurrence in clinically localized prostate cancer. BJU INTERNATIONAL. 2013; 111(4) 549-558. IF: 3.13. Quartile: 1.
- Rascon JJ; Garcia EL. Sexual Medicine beyond History. Advances and controversies (Part I). REVISTA INTERNACIONAL DE ANDROLOGIA. 2013; 11(3) 107-114. IF: 0.22. Quartile: 4.
- Jara J; Lledo E. Historical Approach to the Surgical Treatment of Erectile Dysfunction. ACTAS UROLOGICAS ESPANOLAS. 2013; 37(7) 445-450. IF: 1.148. Quartile: 4.

Publications indexed in journals without impact factor in Journal Citation Reports

- Garcia EL; Rascon JJ. Testosterone deficit syndrome in the chronic renal failure patient. ARCHIVOS ESPAÑOLES DE UROLOGIA. 2013; 66(7) 703-710.
- Escudero RM; Amo FH; Borda AP; Fernandez CH. Post radical prostatectomy predictive factors for biochemical recurrence. ARCHIVOS ESPAÑOLES DE UROLOGIA. 2013; 66(8) 807-814.

- Escudero RM; Amo FH; Borda AP; Fernandez CH. Preoperative predictive model for biochemical recurrence in patients with localized prostate cancer treated with radical prostatectomy. ARCHIVOS ESPAÑOLES DE UROLOGIA. 2013; 66(6) 567-575.
- Husillos-Alonso A; Herranz-Amo F; Subira-Rios D; Diez-Cordero JM; Moralejo-Garate M; Lopez-Lopez E; Pinero-Sanchez J; Ogaya-Pinies G; Lledo-Garcia E; Hernandez-Fernandez C. Prognostic factors in patients with stage pT0/pT1/pTa in the radical cystectomy specimen. ARCHIVOS ESPAÑOLES DE UROLOGIA. 2013; 66(8) 787-795.
- Escudero RM; Amo FH; Gardiner JM; Borda AP; Fernandez CH. Predictors of success and hospitalization in semi-rigid ureteroscopy for lithiasis as an outpatient procedure. ARCHIVOS ESPAÑOLES DE UROLOGIA. 2013; 66(9) 859-864.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 4 | 2.7 |
| Joint publications | 1 | 3.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.1 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 4 | 2.7 |
| Nonindexed publications | 5 | - |
| Total publications | 10 | 5.9 |

ARTIFICIAL CIRCULATION LABORATORY

Group Director: Dr. Juan Francisco del Cañizo López

Group type: Emerging

Research programs and lines

P1: Mechanical circulatory support.

L1: Renal preservation.

L2: Hemodiafiltration.

P2: Decellularizaton and recellularization of the liver

P3: Isolated perfused liver

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 Saiz:** Predoctoral
- **Ramón Pérez-Caballero Martínez:** Postdoctoral
- **Manuel Ruiz Fernández:** Postdoctoral
- **Javier Sicilia Alonso:** ISCIII Support technician
- **Enrique Velasco Sánchez:** Predoctoral
- **José Ángel Zamorano Serrano:** Other

Research Projects – Competitive Calls

Principal investigator: Juan Francisco del Cañizo López

Title: Obtención de matrices biológicas por celularización de hígado de cerdo para hígado posterior recelularización. Bases para el diseño de un biorreactor.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

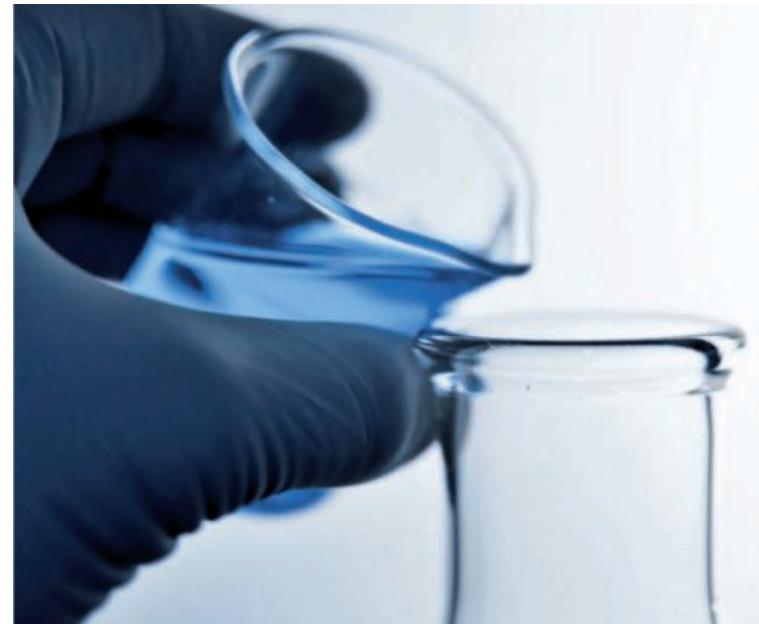
Principal investigator: Manuel Ruiz Fernández

Title: Patrones doppler de llenado en asistencia circulatoria. Estudio experimental y su correlación.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014



ARTIFICIAL CIRCULATION LABORATORY

Patents

Title: Método y Aparato de Hemodiafiltración.

Reference: PCT/ES2007/070081; EP2140889; US2010187176

Owner: FIBHGM.

Inventor: Juan Francisco del Cañizo López.

Title: Dispositivo de Asistencia Ventricular.

Reference: P201230211; P201331422

Owner: FIBHGM.

Inventors: Juan Francisco del Cañizo López, Manuel Ruiz Hernández.

Title: Blood pump and application thereof.

Reference: P9501070; CL19960000890

Owner: SERMAS – HGUGM.

Inventor: Juan Francisco del Cañizo López.

• Hosseinpour AR; Gonzalez-Calle A; Adsuar-Gomez A; Cuerpo G; Greco R; Borrego-Dominguez JM; Ordonez A; Wallwork J. Surgical technique for heart transplantation: a strategy for congenital heart disease. *EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY*. 2013; 44(4) 598-604. IF: 2.814. Quartile: 1. Cardiología.

• Granda MJP; Barrio JM; Hortal J; Munoz P; Rincon C; Bouza E. Routine aspiration of subglottic secretions after major heart surgery: impact on the incidence of ventilator-associated pneumonia. *JOURNAL OF HOSPITAL INFECTION*. 2013; 85(4) 312-315. IF: 2.782. Quartile: 2.

• Calvo FA; Sole CV; Serrano J; Rodriguez M; Marcos F; Munoz-Calero A; Zorrilla J; Lopez-Baena JA; Diaz-Zorita B; Garcia-Sabrido JL; del Valle E. Postchemoradiation laparoscopic resection and intraoperative electron-beam radiation boost in locally advanced rectal cancer: long-term outcomes. *JOURNAL OF CANCER RESEARCH AND CLINICAL ONCOLOGY*. 2013; 139(11) 1825-1833. IF: 3.009. Quartile: 2.

Publications

Total impact factor: 19.1

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

- Lanio N; Sarmiento E; Gallego A; Calahorra L; Jaramillo M; Navarro J; Palomo J; Fernandez-Yanez J; Ruiz M; Fernandez-Cruz E; Carbone J. Alterations of naive and memory B-cell subsets are associated with risk of rejection and infection in heart recipients. *TRANSPLANT INTERNATIONAL*. 2013; 26(8) 800-812. IF: 3.12. Quartile: 1.
- Lanio N; Sarmiento E; Gallego A; Navarro J; Palomo J; Fernandez-Yanez J; Ruiz M; Fernandez-Cruz E; Carbone J. Kinetics of functionally distinct T-lymphocyte subsets in heart transplant recipients after induction therapy with anti-CD25 monoclonal antibodies. *TRANSPLANT IMMUNOLOGY*. 2013; 28(4) 176-182. IF: 1.832. Quartile: 3.
- Bouza E; Granda MJP; Hortal J; Barrio JM; Cercenado E; Munoz P. Pre-emptive broad-spectrum treatment for ventilator-associated pneumonia in high-risk patients. *INTENSIVE CARE MEDICINE*. 2013; 39(9) 1547-1555. IF: 5.544. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 0 | 0.0 |
| Joint publications | 6 | 19.1 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 3 | 11.5 |
| Second-quartile publications | 2 | 5.8 |
| Third-quartile publications | 1 | 1.8 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 6 | 19.1 |

EVALUATION OF HEALTH SERVICES AND CLINICAL EPIDEMIOLOGY

Group Director: Dr. M^a Paz Rodríguez Pérez

Group 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
- **Beatriz Nieto Pereda:** Predoctoral
- **Marta Beatriz Grande Armesto:** Predoctoral
- **Rosa Plá Mestre:** Predoctoral
- **María de la Paz Rodríguez Pérez:** Senior researcher
- **Concepción Sanchidrián de Blas:** Predoctoral

Research Projects – Competitive Calls

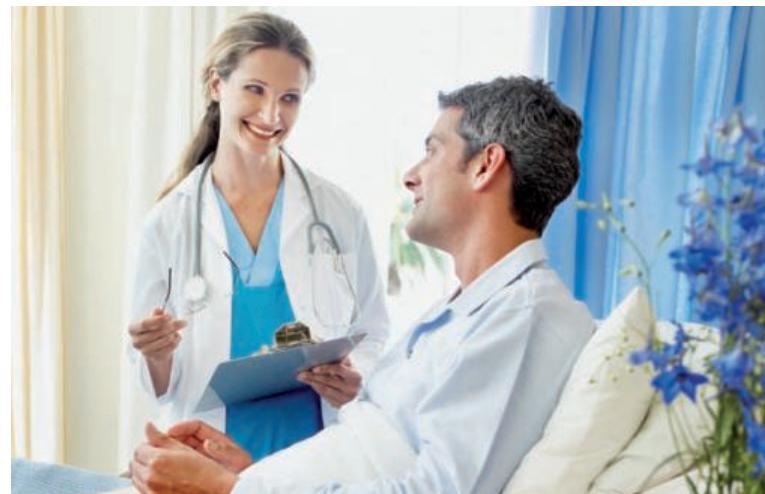
Principal investigator: Rosa Plá Mestre

Title: Calidad de vida y complicaciones según el tipo de parto.

Funding body: Instituto de Salud Carlos III

Start date: 2013

End date: 2015



CLINICAL NUTRITION

Group Director: Dr. Pilar García Peris

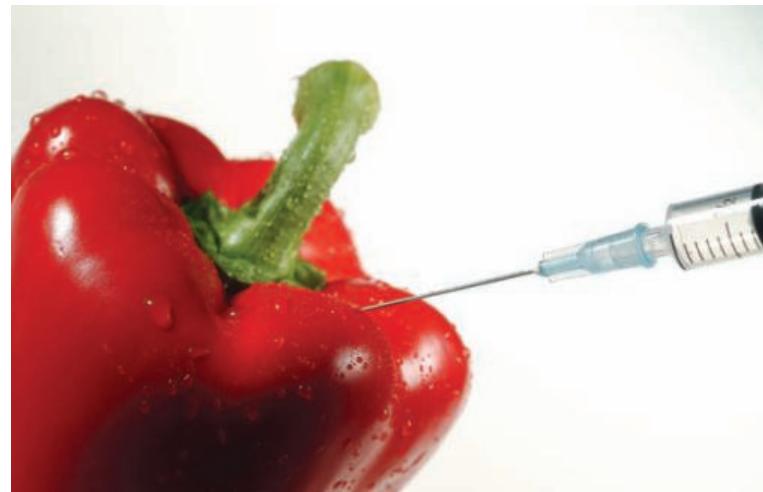
Group type: Emerging

Research programs and 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 according to the UKPDS table in diabetic smokers and ex-smokers.
- 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.

Group members

- Irene Bretón Lesmes: Predoctoral
- Miguel Cambor Álvarez: Predoctoral
- María Cristina de la Cuerda Compés: Postdoctoral
- María Luisa Carrascal Fabián: Trainee
- Laura Frías Soriano: Predoctoral
- Pilar García Peris: Senior researcher
- Isabel Higuera Pulgar: Predoctoral
- Cristina Velasco Gimeno: Predoctoral



Clinical Practice Guidelines

| AUTHORS | TITLE | PUBLICATION |
|---|--|--|
| Pilar García Peris, Laura Frías Soriano | Recomendaciones dietético nutricionales. Servicio Madrileño de Salud | Edita: Consejería de Salud. Depósito legal: M-12032-2013 |

Publications

Total impact factor: 19.2

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

- Vidal-Casariego A; Burgos-Pelaez R; Martinez-Faedo C; Calvo-Gracia F; Valero-Zanuy MA; Luengo-Perez LM; Cuerda-Compes C. Metabolic Effects of L-carnitine on Type 2 Diabetes Mellitus: Systematic Review and Meta-analysis. *EXPERIMENTAL AND CLINICAL ENDOCRINOLOGY & DIABETES*. 2013; 121(4) 234-238. IF: 1.76. Quartile: 3.
- Dreesen M; Foulon V; Vanhaecht K; Hiele M; De Pourcq L; Pironi L; Van Gossum A; Wanten G; Baxter JP; Joly F; Cuerda C; Willems L. Development of quality of care interventions for adult patients on home parenteral nutrition (HPN) with a benign underlying disease using a two-round Delphi approach. *CLINICAL NUTRITION*. 2013; 32(1) 59-64. IF: 3.94. Quartile: 1.
- Olveira G; Tapia MJ; Ocon J; Cabrejas-Gomez C; Ballesteros-Pomar MD; Vidal-Casariego A; Arraiza-Irigoyen C; Olivares J; Conde-Garcia MD; Garcia-Manzanares A; Botella-Romero F; Quilez-Toboso RP; Cabrerizo L; Matia. Parenteral Nutrition-Associated Hyperglycemia in Non-Critically Ill Inpatients Increases the Risk of In-Hospital Mortality (Multicenter Study). *DIABETES CARE*. 2013; 36(5) 1061-1066. IF: 8.57. Quartile: 1.
- Dreesen M; Foulon V; Hiele M; Vanhaecht K; De Pourcq L; Pironi L; Van Gossum A; Arends J; Cuerda C; Thul P; Bozzetti F; Willems L. Quality of care for cancer patients on home parenteral nutrition:

development of key interventions and outcome indicators using a two-round Delphi approach. *SUPPORTIVE CARE IN CANCER*. 2013; 21(5) 1373-1381. IF: 2.495. Quartile: 1.

- Olveira G; Tapia MJ; Ocon J; Cabrejas-Gomez C; Ballesteros-Pomar MD; Vidal-Casariego A; Arraiza-Irigoyen C; Olivares J; Conde-Garcia MC; Garcia-Manzanares A; Botella-Romero F; Quilez-Toboso RP; Cabrerizo L; Rubio. The Subjective Global Assessment Predicts In-Hospital Mortality Better than Other Nutrition-Related Risk Indexes in Noncritically Ill Inpatients Who Receive Total Parenteral Nutrition in Spain (Prospective Multicenter Study). *JOURNAL OF THE ACADEMY OF NUTRITION AND DIETETICS*. 2013; 113(9) 1209-1218. IF: 2.444. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 1 | 1.8 |
| Joint publications | 4 | 17.4 |
| First-decile publications | 1 | 8.6 |
| First-quartile publications | 3 | 15.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 2 | 4.2 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 5 | 19.2 |

PERITRANSPLANT EVALUATION OF THE LIVER

Group Director: Dr. José María Pérez Peña

Group 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 this group carry out their care work in Hospital Gregorio Marañón, with particular emphasis on the field of anesthesia and postoperative care in major abdominal surgery. Furthermore, they form part of the anesthesia group for liver transplant and develop various research lines in this field and in major liver surgery through close collaboration with the Hepatology Department and Surgery Department.

The group's research activity in recent years has been developed along the following lines: the role of nitric oxide inhibitors in early graft function and hemodynamic alterations in patients with cirrhosis undergoing liver transplant, the prevalence of dysfunction of the autonomic nervous system in patients with cirrhosis undergoing liver transplant and the implications of this disease for perioperative morbidity and mortality and hemodynamic alterations, the existence and consequences of subclinical myocardial heart disease in the cirrhotic patient and cardiac dysfunction, methods for the early diagnosis of early graft dysfunction in liver transplant, and, finally, the influence of anesthetic agents in major liver surgery and liver transplant.

Group members

- Roberto de Diego Fernández: Predoctoral
- Miriam Herrero Traver: Predoctoral
- Consolación Jiménez de la Fuente: Postdoctoral
- Juan Laso Pérez: Predoctoral
- Cristina Julia Lisbona Sáez: Predoctoral
- Luis Enrique Olmedilla Arnal: Postdoctoral
- José María Pérez Peña: Senior researcher
- Manuel Luis Tisner Madrid: Predoctoral



PERITRANSPLANT EVALUATION OF THE LIVER

Publications

Total impact factor: 4.2

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

- Zaballos M; Bastida E; Jimenez C; Agusti S; Lopez-Gil MT. Predicted end-tidal sevoflurane concentration for insertion of a Laryngeal Mask Supreme A prospective observational study. EUROPEAN JOURNAL OF ANAESTHESIOLOGY. 2013; 30(4) 170-174. IF: 3.011. Quartile: 1.
- Asencio JM; Vaquero J; Olmedilla L; Sabrido JLG. "Small-for-flow" syndrome: Shifting the "size" paradigm. MEDICAL HYPOTHESES. 2013; 80(5) 573-577. IF: 1.152. Quartile: 4.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 2 | 4.2 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 1 | 3.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 1 | 1.2 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 4.2 |

PERIANESTHETIC EVALUATION

Group Director: Dra. Carmen Fernández Riveira

Group 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:** Senior researcher
- **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: 0.8

Publicaciones en revistas indexadas en el Journal Citation Reports con Factor de Impacto:

- Quintana-Villamandos B; Delgado-Martos MJ; Fernandez-Riveira C; Fernandez-Criado MC; Martos-Rodriguez A; Canillas F; Delgado-Baeza E. Can F-18-FDG-PET show differences in myocardial metabolism between Wistar Kyoto rats and spontaneously hypertensive rats?. LABORATORY ANIMALS. 2013; 47(4) 320-323. IF: 0.8. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 1 | 0.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 0.8 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 1 | 0.8 |

PEDIATRIC ENDOCRINOLOGY

Group Director: Dra. María Dolores Rodríguez Arnao

Group type: Associated clinical

Research lines

L1: Pediatric endocrinology. Hypothyroidism.

L2: Gene therapy: polymorphisms and mutations.

L3: Hormone therapy.

Group members

- **Virginia Montero García:** Predoctoral
- **Isabel Morillas Cantero:** Predoctoral
- **María Dolores Rodríguez Arnao:** Senior researcher
- **Amparo Rodríguez Sánchez:** Predoctoral
- **Belén Roldán:** Predoctoral

Research Projects – Competitive Calls

Principal investigator: HF Escobar Morreale y B Roldán Martín

Title: Influencia de los andrógenos en el desarrollo de la adiposidad abdominal y de la disfunción metabólica del tejido adiposo visceral en humanos, como factores etiopatogénicos de la resistencia insulínica y la diabetes. (PI 080944)

Funding body: Instituto de Salud Carlos III, Ministerio de Ciencia e Innovación (CIBER)

Start date: 2008

End date: 2013

Publications

Total impact factor: 2.0

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

- Roldan-Martin MB; Rodriguez-Ogando A; Sanchez-Galindo AC; Parente-Hernandez A; Luengo-Herrero V; Sanchez-Sanchez C. Rare presentation of shock and acute mesenteric ischaemia secondary to acute adrenal insufficiency in an 11-year-old male. JOURNAL OF PAEDIATRICS AND CHILD HEALTH. 2013; 49(6) 498-500. IF: 1.193. Quartile: 3.
- Gomez MR; Jimenez MJO; Arnao MDR; Martin MBR. Addison's Disease: Forms of Presentation in Paediatrics. ANALES DE PEDIATRIA. 2013; 78(6) 405-408. IF: 0.772. Quartile: 4.

| | Number of documents | IF |
|------------------------------|----------------------------|-----------|
| Own publications | 2 | 2.0 |
| 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 | 1 | 1.2 |
| Fourth-quartile publications | 1 | 0.8 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 2.0 |

REGENERATION AND BIOMATERIALS IN MUSCULOSKELETAL DISEASE

Group Director: Dr. Francisco Javier Vaquero Martín

Group 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

- **Francisco Chana Rodríguez:** Postdoctoral
- **Francisco Forriol Campos:** Postdoctoral
- **Rafael Laguna Aranda:** Predoctoral
- **José Antonio Matas**
- **Francisco Javier Narbona Cárcelés:** Predoctoral
- **Ángel Oteo Álvaro**
- **José Manuel Rojo Manaute:** Predoctoral
- **Ruben Pérez Mañanes:** Postdoctoral
- **Pablo Sanz Ruiz:** Postdoctoral
- **Francisco Javier Vaquero Martín:** Group director



REGENERATION AND BIOMATERIALS IN MUSCULOSKELETAL DISEASE

Theses

| Doctoral student | Title | Director | University |
|------------------------|---|---|-----------------------------------|
| Alberto Capa Grasa | Cirugía Ultra Mínimamente invasiva guiada por ultrasonidos para la liberación del túnel carpiano: Investigación, desarrollo y aplicación de una nueva técnica | J. Vaquero Martín, José Manuel Rojo Manaute | Universidad Complutense de Madrid |
| Javier Narbona Cáceres | Presencia de células troncales mesenquimales en médula ósea. Estudio comparativo entre cresta ilíaca, metáfisis distal de fémur y metáfisis proximal de tibia | J. Vaquero Martín, M. E. Fernández Santos | Universidad Complutense de Madrid |

Publications

Total impact factor: 4.9

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

- Rojo-Manaute JM; Capa-Grasa A; Rodriguez-Maruri GE; Moran LM; Martinez MV; Martin JV. Ultra-Minimally Invasive Sonographically Guided Carpal Tunnel Release Anatomic Study of a New Technique. JOURNAL OF ULTRASOUND IN MEDICINE. 2013; 32(1) 131-142. IF: 1.532. Quartile: 2.
- Gutierrez RC; Iban MAR; Ayestaran AC; Sobrino AS; Oteo-Alvaro A. Peripheral Compartment as the Initial Access for Hip Arthroscopy in Complex Cases: Technical Note. ORTHOPEDICS. 2013; 36(6) 456-462. IF: 0.977. Quartile: 3.

- Villanueva-Martinez M; De la Torre-Escudero B; Rojo-Manaute JM; Rios-Luna A; Chana-Rodriguez F. Tantalum Cones in Revision Total Knee Arthroplasty. A Promising Short-Term Result With 29 Cones in 21 Patients. JOURNAL OF ARTHROPLASTY. 2013; 28(6) 988-993. IF: 2.369. Quartile: 2.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 3 | 4.9 |
| Joint publications | 0 | 0.0 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 2 | 3.9 |
| Third-quartile publications | 1 | 1.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 3 | 4.9 |

IRON METABOLISM DISORDERS

Group Director: Dr. Alejandro del Castillo Rueda

Group type: Associated clinical

Research programs and lines

P1: Study of genes involved in hyperferritinemia and hemochromatosis

P2: Study of iron metabolism with determination of serum hepcidin

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

- **Alejandro del Castillo Rueda:** Group director
- **Nadiya Matskiv:** Predoctoral
- **María Josefa Morán Jiménez:** Postdoctoral
- **Miguel Ángel Sánchez Pablo:** Predoctoral
- **Marta Clavero Olmos:** Predoctoral

EMERGENCY MEDICINE

Group Director. Dr. Javier Muñoz González

Group type: Associated clinical

Research lines

P1: Pathogenic mechanisms in the critical patient.

- L1: Deep venous thrombosis in the critical patient.
- L2: Extracorporeal membrane oxygenation in adults
- L3: Severe sepsis and septic shock

Group members

- **Braulio de la Calle Reviriego:** Predoctoral
- **Pablo García Olivares:** Predoctoral
- **José Eugenio Guerrero Sanz:** Postdoctoral
- **Javier Muñoz González:** Senior researcher
- **Patricia Santa Teresa Zamarro:** Postdoctoral
- **Juan Carlos Sotillo Díaz:** Postdoctoral
- **María Jesús Tomey Soria:** Predoctoral

Publications

Total impact factor: 1.8

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

- Perez-Granda MJ; Munoz P; Heras C; Sanchez G; Rello J; Bouza E. Prevention of Ventilator-Associated Pneumonia: Can Knowledge and Clinical Practice Be Simply Assessed in a Large Institution?. RESPIRATORY CARE. 2013; 58(7) 1213-1219. IF: 1.84. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 1 | 1.8 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 0 | 0.0 |
| Third-quartile publications | 1 | 1.8 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 1 | 1.8 |



PATOPHYSIOLOGY, COURSE, AND THERAPEUTIC STRATEGIES IN CHRONIC RESPIRATORY INSUFFICIENCY AND RESPIRATORY SLEEP DISORDERS

Group Director: Dra. Pilar de Lucas Ramos

Group type: Associated clinical

Research programs and lines

P1: COPD: natural history and comorbidity.

L1: Study of 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

- **M^a Pilar De Lucas Ramos:** Group director
- **Soledad López Martín:** Predoctoral
- **José Miguel Rodríguez González-Moro:** Postdoctoral

PATOPHYSIOLOGY, COURSE, AND THERAPEUTIC STRATEGIES IN CHRONIC RESPIRATORY INSUFFICIENCY AND RESPIRATORY SLEEP DISORDERS

Publications

Total impact factor: 4.7

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

- Izquierdo-Alonso JL; Rodriguez-Gonzalez Moro JM; de Lucas-Ramos P; Unzueta I; Ribera X; Anton E; Martin A. Prevalence and characteristics of three clinical phenotypes of chronic obstructive pulmonary disease (COPD). *RESPIRATORY MEDICINE*. 2013; 107(5) 724-731. IF: 2.917. Quartile: 2.
- Gonzalez CM; Barcala FJG; Ramirez JB; Ros IG; Michavila IA; Martinez CO; Rodriguez-Moro JMG; Portal JAR; Alvarez RF. Recommendations for Fitness for Work Medical Evaluations in Chronic Respiratory Patients. *ARCHIVOS DE BRONCONEUMOLOGIA*. 2013; 49(11) 480-490. IF: 1.816. Quartile: 3.

| | Number of documents | IF |
|------------------------------|---------------------|-----|
| Own publications | 0 | 0.0 |
| Joint publications | 2 | 4.7 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 0 | 0.0 |
| Second-quartile publications | 1 | 2.9 |
| Third-quartile publications | 1 | 1.8 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 2 | 4.7 |

ANESTHESIA, TOXINS, AND ARRHYTHMIAS

Group Director: Dr. Matilde Zaballos García

Group 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:** Senior researcher



ANESTHESIA, TOXINS, AND ARRHYTHMIAS

Research Projects – Competitive Calls

Principal investigator: Matilde Zaballos García

Title: Estudio prospectivo, randomizado, doble ciego, monocéntrico, para estudiar la CP50 de propofol asociada o no a remifentanilo necesaria para la inserción de la ML-supreme.

Funding body: Ministerio de Sanidad, Servicios Sociales e Igualdad

Start date: 2012

End date: 2013

Principal investigator: Matilde Zaballos García

Title: Estudio de la eficacia del tratamiento con bicarbonato sódico versus intralipid en un modelo experimental porcino de toxicidad cardiaca inducida por bupivacaina. Comparación en los efectos electrofisiológicos y en la inducibilidad de arritmias ventriculares.

Funding body: Instituto de Salud Carlos III

Start date: 2012

End date: 2014

Publications

Total impact factor: 15.7

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

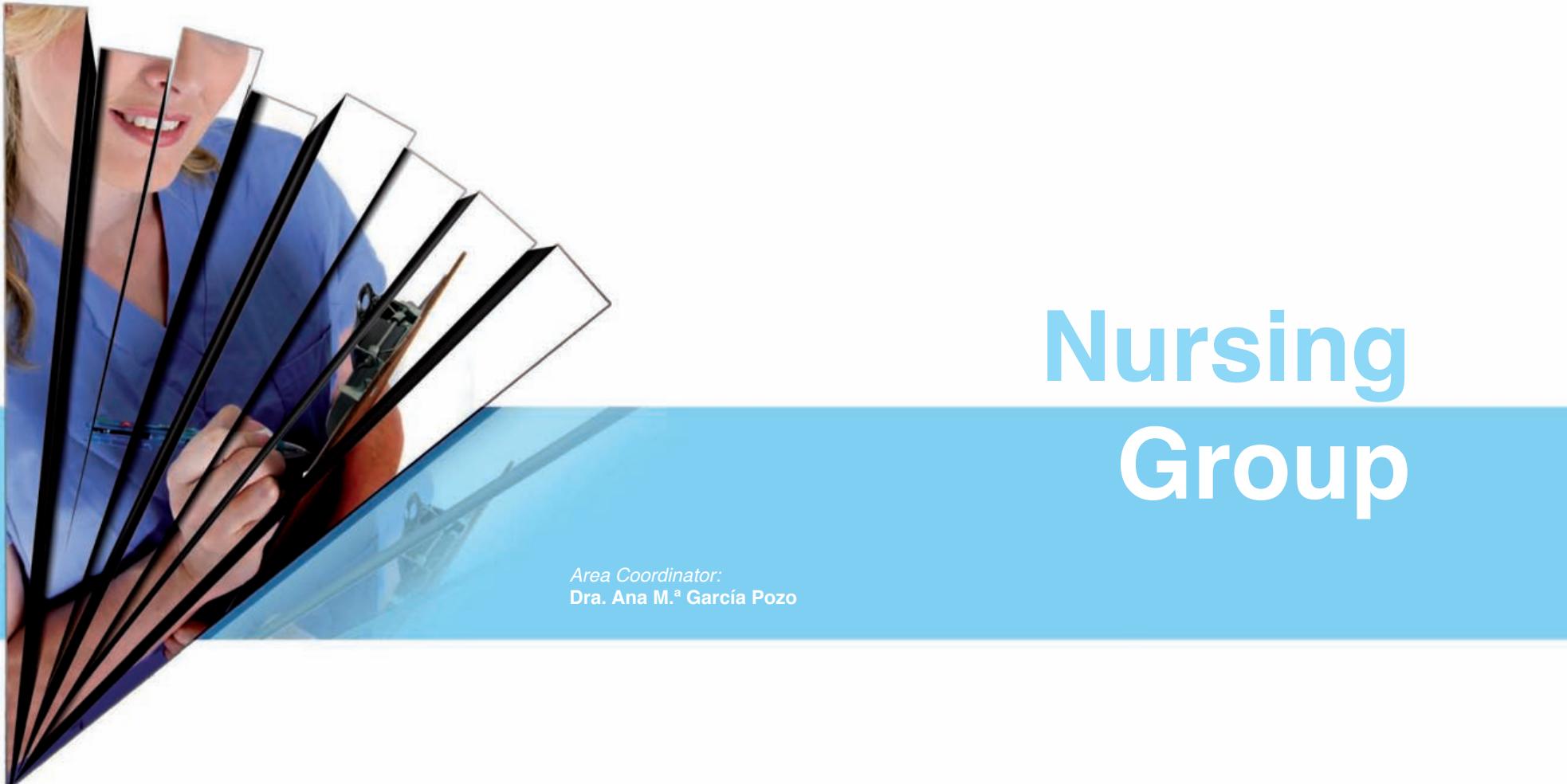
• Garcia-Fernandez FJ; Almendral J; Pachon M; Gonzalez-Torrecilla E; Martin J; Gallardo R. Differentiation of Atrioventricular Nodal Reentrant Tachycardia from Orthodromic Reciprocating Tachycardia by the Resetting Response to Ventricular Extrastimuli: Comparison to Response to Continuous Ventricular Pacing. *JOURNAL OF CARDIOVASCULAR ELECTROPHYSIOLOGY*. 2013; 24(5) 534-541. IF: 2.881. Quartile: 2.

• Romaniega TD; Almendral J; Avila P; Gonzalez-Torrecilla E; Atienza F; Arenal A; Fernandez-Aviles F. Specificity of electrocardiographic criteria for the differential diagnosis of wide QRS complex tachycardia in patients with intraventricular conduction defect. *HEART RHYTHM*. 2013; 10(9) 1393-1401. IF: 4.918. Quartile: 1.

• Zaballos M; Bastida E; Jimenez C; Agusti S; Lopez-Gil MT. Predicted end-tidal sevoflurane concentration for insertion of a Laryngeal Mask Supreme A prospective observational study. *EUROPEAN JOURNAL OF ANAESTHESIOLOGY*. 2013; 30(4) 170-174. IF: 3.011. Quartile: 1.

• Gonzalez-Torrecilla E; Peinado R; Almendral J; Arenal A; Atienza F; Fernandez JG; Fernandez-Aviles F. Reappraisal of classical electrocardiographic criteria in detecting accessory pathways with a strict para-Hisian location. *HEART RHYTHM*. 2013; 10(1) 16-21. IF: 4.918. Quartile: 1.

| | Number of documents | IF |
|------------------------------|---------------------|------|
| Own publications | 1 | 3.0 |
| Joint publications | 3 | 12.7 |
| First-decile publications | 0 | 0.0 |
| First-quartile publications | 3 | 12.8 |
| Second-quartile publications | 1 | 2.9 |
| Third-quartile publications | 0 | 0.0 |
| Fourth-quartile publications | 0 | 0.0 |
| Nonindexed publications | 0 | - |
| Total publications | 4 | 15.7 |



Nursing Group

Area Coordinator:
Dra. Ana M.ª García Pozo

Group director: Dr. 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 produce a large number of major research projects that are mainly collaborative in nature. 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), many of whom 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 an important certified research training plan for nurses and nursing trainees. Similarly, the group runs various research activities to promote research, such as one-day courses, award prizes for research, and provides access to documentary and research resources.

Group members

- **Sara Alcón Nájera:** Predoctoral
- **Mónica Blanco Daza:** Predoctoral
- **Elena Calderari Fernández:** Predoctoral
- **Laura Collados Gómez:** Predoctoral
- **Alejandra Cuenca Yunta:** Predoctoral
- **María Dolores de la Torre Barba:** Predoctoral
- **Julia de las Pozas Abril:** Predoctoral
- **María Isabel Durango Limáquez:** Predoctoral
- **Ana María García Pozo:** Predoctoral
- **Concepción González Lluva:** Predoctoral
- **Luis Guerra Sánchez:** Predoctoral
- **Gloria Guerrero Márquez:** Predoctoral
- **Esther Guijarro Jiménez:** Predoctoral
- **Paloma Ángela Hernández-Sampelayo Matos:** Predoctoral
- **Carmen Lobo Rodríguez:** Predoctoral
- **Raquel López Sánchez:** Predoctoral
- **Milagros Martín Fernández:** Predoctoral
- **Teresa Martínez Castellanos:** Predoctoral
- **Margarita Medina Torres:** Predoctoral
- **María Cruz Menárguez Palanca:** Predoctoral
- **Piedad Morales Lozano:** Predoctoral
- **María Nieves Moro Tejedor:** Predoctoral
- **Cristina Pascual Fernández:** Postdoctoral
- **María de las Mercedes Peña Granger:** Predoctoral
- **David Peña Otero:** Predoctoral
- **Cristina Rincón Sanz:** Predoctoral
- **María Almudena Santano Magariño:** Predoctoral
- **María Consuelo Soto Lucía:** Predoctoral
- **M^a José Toraño Olivera:** Predoctoral
- **Fernando Trujillo Gallego:** Predoctoral
- **Paz Vaquero Lozano:** Predoctoral



Research Projects – Competitive Calls

Principal investigator: Luis Guerra Sánchez

Title: Impacto en la calidad de vida en los pacientes con insuficiencia cardiaca de una intervención enfermera de mejora nutricional.

Funding body: ISCIII

Start date: 2012

End date: 2014

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 pretermínos sometidos a venopunción.

Funding body: ISCIII

Start date: 2013

End date: 2015

Multicenter projects:

Principal investigator: P. García Molina

Collaborating investigator: Tierraseca Serrano, E; Massip Pi, S.

Title: Validación de una escala de valoración del riesgo de úlceras por presión en neonatos hospitalizados.

Funding body: Conselleria de Sanitat y Agència Valenciana de Salut

Start date: 2011

End date: 2013

Collaborating investigator: A. Santano Magariño

Title: Estudio Internacional observacional para la caracterización de adultos con Gripe A pandémica H1N1 (H1N1v). Estudio de pacientes ambulatorios de INSIGHT H1N1 (FLU003).

Funding body: National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), llevado a cabo por la International Network for Strategic Initiatives in Global HIV Trials (INSIGHT).

Start date: 2009

End date: None set

Publications

Total impact factor: 4.1

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

- Granda MJP; Barrio JM; Hortal J; Munoz P; Rincon C; Bouza E. Routine aspiration of subglottic secretions after major heart surgery: impact on the incidence of ventilator-associated pneumonia. *JOURNAL OF HOSPITAL INFECTION*. 2013; 85(4) 312-315. IF: 2.782.
Quartile: 2.
- Torrejon A; Oltra L; Hernandez-Sampelayo P; Marin L; Garcia-Sanchez V; Casellas F; Alfaro N; Lazaro P; Vera MI. Development of quality standards in inflammatory bowel disease management and design of an evaluation tool of nursing care. *REVISTA ESPANOLA DE ENFERMEDADES DIGESTIVAS*. 2013; 105(5) 262-271. IF: 1.317.
Quartile: 4.





Other research activities

- Publications from groups in the integration phase.
- Publications generated jointly with the Research Support Services.

PUBLICATIONS FROM GROUPS IN THE INTEGRATION PHASE

| Publications | Total impact factor: 113.4 |
|--------------|----------------------------|
|--------------|----------------------------|

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

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- Pedron-Giner C; Navas-Lopez VM; Martinez-Zazo AB; Martinez-Costa C; Sanchez-Valverde F; Blasco-Alonso J; Moreno-Villares JM; Redecillas-Ferreiro S; Canals-Badia MJ; Rosell-Camps A; Gil-Ortega D; Gomez-Lopez L; Garcia-Romero R; Gutierrez-Junquera C; Balmas. Analysis of the Spanish national registry for pediatric home enteral nutrition (NEPAD): implementation rates and observed trends during the past 8 years. *EUROPEAN JOURNAL OF CLINICAL NUTRITION*. 2013; 67(4) 318-323. IF: 2.95. Quartile: 2. Nutrición Pediátrica.
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- Cutanda-Henriquez F; Vargas-Castrillon S. EQUIVALENT UNIFORM DOSE SENSITIVITY TO CHANGES IN ABSORBED DOSE DISTRIBUTION. *INTERNATIONAL JOURNAL OF BIOMATHEMATICS*.
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PUBLICATIONS FROM GROUPS IN THE INTEGRATION PHASE

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- Ramsauer B; Vidaeff AC; Hosli I; Park JS; Strauss A; Khodjaeva Z; de la Cruz AA; Martinez-Astorquiza T; Horovitz J; Coatleven F; Helmer H. The diagnosis of rupture of fetal membranes (ROM): a meta-analysis. *JOURNAL OF PERINATAL MEDICINE*. 2013; 41(3) 233-240. IF: 1.425. Quartile: 3. Obstetricia y Ginecología.
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PUBLICATIONS FROM GROUPS IN THE INTEGRATION PHASE

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 - Arias F; Szerman N; Vega P; Mesias B; Basurte I; Morant C; Ochoa E; Poyo F; Babin F. Abuse or dependence on cannabis and other psychiatric disorders. Madrid study on dual pathology prevalence. ACTAS ESPANOLAS DE PSIQUIATRIA. 2013; 41(2) 122-129. IF: 0.759. Quartile: 4. Psiquiatría.
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 - De Waele JJ; Tellado JM; Alder J; Reimnitz P; Jensen M; Hampel B; Arvis P. Randomised clinical trial of moxifloxacin versus ertapenem in complicated intra-abdominal infections: results of the PROMISE study. INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS. 2013; 41(1) 57-64. IF: 4.259. Quartile: 1. Digestivo ?
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- Nunez-Villaveiran T; Frohner BB; Urcelay PR; Sanchez RL; Molina CM; Palacios ED. Bifid nose - A mild degree of frontonasal dysplasia. A case report. INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY. 2013; 77(8) 1374-1377. IF: 1.319. Quartile: 3. Cirugía Plástica-Pediatría.
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PATIENT PLATFORM

METHODOLOGY AND BIOSTATISTICS:

| Publications | Total impact factor: 41 |
|--------------|-------------------------|
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Publications in journals with impact factor indexed in the Journal Citation Reports:

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- Escudero-Vilaplana V; Martinez-Nieto C; Lopez-Gomez JM; Vega-Martinez A; Bellon-Cano JM; Sanjurjo-Saez M. Erythropoiesis-stimulating agents in anaemia due to chronic kidney disease: a cost-minimization analysis. *INTERNATIONAL JOURNAL OF CLINICAL PHARMACY*. 2013; 35(3) 463-468. (IF: 1.25; Quartile: 3).
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- Fernandez-Rodriguez A; Berenguer J; Jimenez-Sousa MA; Guzman-Fulgencio M; Micheloud D; Miralles P; Lopez JC; Bellon JM; Aldamiz-Echevarria T; Garcia-Broncano P; Carrero A; Alvarez E; Resino S. Prediction of Hepatic Fibrosis in Patients Coinfected With HIV and Hepatitis C Virus Based on Genetic Markers. *JAIDS-JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES*. 2013; 64(5) 434-442. (IF: 4.394; Quartile: 1).
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PUBLICATIONS GENERATED JOINTLY WITH RESEARCH SUPPORT SERVICES

CELL PLATFORM

CONFOCAL MICROSCOPY

Publications

Total impact factor: 11,7

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

- Samaniego R; Esteche A; Reloso M; Longo N; Escat JL; Longo-Imedio I; Aviles JA; del Pozo MA; Puig-Kroger A; Sanchez-Mateos P. Mesenchymal Contribution to Recruitment, Infiltration, and Positioning of Leukocytes in Human Melanoma Tissues. *JOURNAL OF INVESTIGATIVE DERMATOLOGY*. 2013; 133(9) 2255-2264. (IF: 6.372; Quartile: 1).
- de las Casas-Engel M; Dominguez-Soto A; Sierra-Filardi E; Bragado R; Nieto C; Puig-Kroger A; Samaniego R; Loza M; Corcuera MT; Gomez-Aguado F; Bustos M; Sanchez-Mateos P; Corbi AL. Serotonin Skews Human Macrophage Polarization through HTR2B and HTR7. *JOURNAL OF IMMUNOLOGY*. 2013; 190(5) 2301-2310. (IF: 5.362; Quartile: 1).

FLOW CYTOMETRY AND CELL SORTER:

Publications

Total Factor de Impacto: 26,6

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

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• Serrano-Villar S; Gutierrez C; Vallejo A; Hernandez-Novoa B; Diaz L; Fernandez MA; Madrid N; Dronda F; Zamora J; Munoz-Fernandez MA; Moreno S. The CD4/CD8 ratio in HIV-infected subjects is independently associated with T-cell activation despite long-term viral suppression. *JOURNAL OF INFECTION*. 2013; 66(1) 57-66. (IF: 4.017; Quartile: 1).