01 Director’s Foreword
“Responsibility now lies with the management team, which will continue to work with the same dedication and determination as ever. The goal is to remain as the benchmark of biomedical science carried out in Córdoba and the signature of excellence and tireless work of more than 450 researchers, whose talent is oriented to bring hope to patients.”

The Maimonides Institute for Biomedical Research of Córdoba (IMIBIC) has its roots in the promotion of high quality research of a decidedly translational nature. Our calling is to improve the quality of life of patients. Founded in 2008 thanks to a generous collaboration by several, which exercised exemplary coordination, IMIBIC was accredited in 2011 by the Health Institute Carlos III as a health research center. Since then, IMIBIC has undertaken different strategies to establish itself as a hallmark of excellence in research. This achievement would not have been possible without the tireless work and dedication carried out by IMIBIC’s team with more than 450 researchers. As a result of such intense activity, year after year this report shows excellent indicators of generation and transfer of knowledge. In 2014, IMIBIC managed to continue increasing its scientific output via 327 documents, of which 28% were completed with foreign groups and institutions. The total impact factor was 1084.19 points. The improvement in the quality of our work is striking given that 20% of our publications are found within the first decile journals and 52% in first quartile journals. Moreover, the Institute has made great advances in one of our main objectives: promoting biomedical innovation as a powerful engine for economic and social development. In 2014, 15 property registries were fostered and one spin-off was created at the heart of the Institute. These facts clearly show how that there has been more growth compared to the previous year.

“Francisco Pérez Jiménez has always believed in the philosophy of unity, integration, synergy, and collaboration as the cornerstones of the Institute which has in large part been responsible for its success”
In addition to the always praiseworthy work done by research groups, IMIBIC experienced an extraordinary year in 2014. It has undertaken the necessary actions to complete the installation and launch of its main infrastructures and equipments. What specifically stands out is the definitive backing that the Institute has given to clinical research. In the last trimester, IMIBIC launched a space dedicated exclusively to this end, located in one of the offices of the Reina Sofia University Hospital (Provincial Hospital). In this space, IMIBIC’s Clinical Research Unit joined the small number of units in Andalucía that have at their disposal resources to develop phase I clinical trials. In this space, IMIBIC’s Clinical Research Unit joined the small number of units in Andalucía having resources at their disposal to develop phase I clinical trials. Furthermore, in the final stage of the year, IMIBIC undertook construction work to remodel a new space dedicated to clinical trials for which the unit set aside 2,000 square meters. Of these, the 200 square meters reserved for Pediatrics are especially noteworthy. This space will be put into use throughout 2015.

In 2014, our Institute reached another critical milestone upon completing construction and equipment preparation for the Institute’s new headquarters. Here can be found all of the fundamental and translational research laboratories as well as the research support units, including the experimental animal services, and spaces for the management staff. With over 10,000 square meters, this building has become the largest research center in our region. These and other details demonstrate that this Institute, although still young, succeeds year after year in growing and burnishing its reputation thanks to the effort day-in day-out of its researchers, technicians, and management staff. Throughout this continuous success, unquestionably the most decisive work has been done by Dr. Francisco Pérez Jiménez, who has been the scientific director of the Institute since its inception.

By practicing effective and responsible leadership, he demonstrated his commitment to the philosophy of unity, integration, synergies and collaboration as the cornerstones of the Institute. Responsibility now lies with the new management team, which will continue to work with the same dedication and determination as ever. The goal is to remain as the benchmark of biomedical science carried out in Córdoba and the signature of excellence and tireless work of more than 450 researchers, whose talent is oriented to bring hope to patients. People in Córdoba are already conscious of this daily effort, which was awarded with the two main awards of the city in 2014.

With great enthusiasm, we hope this report portrays a general impression of the quality and breadth of the work undertaken by the multidisciplinary team of this Institute.

Justo P. Castaño
Scientific Director
02
Human and Economic Resources
2. Human and Economic Resources

2.1.- Organization Chart

IMIBIC’s governing and representative bodies are detailed below:

A. Collegiate Bodies

Governance Council

The Governing Council is the uppermost governing body of IMIBIC. The Governing Council is composed of the following members:

<table>
<thead>
<tr>
<th>Representations</th>
<th>Members</th>
</tr>
</thead>
</table>
| Two representatives from the Regional Ministry of Equity, Health and Social Policies of the Andalusian Regional Government | Aquilino Alonso Miranda  
Deputy Minister of the Regional Ministry of Equity, Health and Social Policies of the Andalusian Regional Government |
|                                                                                  | Marina Alvarez Benito  
Managing Director of the Reina Sofia University Hospital and President of FIBICO |
| Two representatives from the Regional Ministry of Economy, Innovation, Science and Employment | Eva Maria Vázquez Sánchez  
General Director for Research, Technology and Business |
|                                                                                  | José Ignacio Exposito Prats  
Provincial Delegate of Economy, Innovation, Science and Employment of Córdoba |
| Two representatives of the University of Córdoba                              | José Carlos Gómez Villamandos  
Rector of the University of Córdoba |
|                                                                                  | Carmen Pueyo de la Cuesta  
Vice-Chancellor for Research of the University of Córdoba |
| IMIBIC’s Scientific Director                                                   | Francisco Pérez Jiménez |
| One representative from the Progress and Health Foundation                     | Juan Jesús Bandera González  
Managing Director |
| IMIBIC’s General Manager                                                        | José Miguel Guzmán de Damas |
Scientific Council
The Scientific Council is an advisory body to the Scientific Director. It is composed of the Scientific Director, the Deputy Scientific Director of IMIBIC, the Principal Investigators (PI), the Emerging Researchers (ER), the Associated Researchers (AR), a representative of the Reina Sofia University Hospital Board of Directors (RSUH), the IMIBIC’s General Manager and representatives of the technical and management staff. It was established on July 9, 2009.

External Scientific Advisory Board
The External Advisory Board is a body appointed by the Governing Council, whose mission is to assist the Scientific Director in the performance of his duties. It is an advisory body to the Scientific Direction but its decisions are not legally binding. It was established on July 9, 2009 under the name of External Advisory Board, and it was ratified by the Governing Council on December 21, 2009

B. Individual Bodies
The Management Team is responsible for ensuring the correct performance, in order to increase the quality and impact of IMIBIC’s research activity.

Scientific Director
Francisco Pérez Jiménez, PhD. Professor of Medicine and Head of the Internal Medicine Service at Reina Sofía University Hospital. He was re-named scientific director of IMIBIC by the Governing Council at a meeting held on December 11, 2012. As of the date of the release of this report, the new Scientific Director is Justo P. Castaño Fuentes.

Deputy Scientific Director
Manuel Tena Sempere, PhD. Professor of Physiology at the Faculty of Medicine of the University of Córdoba. He was named Deputy Scientific Director by the Governing Council at a meeting held on June 21, 2012.

General Manager
José Miguel Guzmán de Damas, PhD. Hospital Pharmacist. He also holds a Bachelor Degree in Business Administration, a MSc in Health Care Management and a Executive MBA from the IESE Business School. He was appointed IMIBIC’s General Manager by the Governing Council at a meeting held on December 21, 2010.

2.2. Scientific Structure
The scientific structure of IMIBIC is based on its research groups, which cooperate in the development of the Scientific Programs approved by the Governing Council on July 12, 2013. These programs have been compiled following the recommendations of the Strategic Health Action Plan 2013-2016, which are oriented towards the European Union’s ‘Horizon 2020’ program. The aim of this structure is to define the horizon that should guide researchers towards translational and clinical research into human health. We aim to encourage interaction and cooperation through it, as well as foster participation to increase talent and critical mass and improve young people’s training, which will make it easier for them to find a job. Our Scientific Programs are therefore a reflection of the strength of our research teams and show the unique specialization of IMIBIC. The programs are as follows:

1. Active ageing and Frailty
This program is oriented towards understanding the molecular pathogenic basis of the aging process, its relation to quality of life and the search for new strategies for patience care assistance. It includes the following lines of research:

- Immunology and senescence
- Attention and care of the chronically ill
- Frailty and quality of life in the elderly
2. Nutrition and endocrine and metabolic diseases

This program is oriented towards studying diseases of the metabolism and the endocrine system, with particular interest in the role of nutrition in the prevention and management of these processes at different stages of life. It also focuses on the study of reproductive health and neuroendocrine tumors. It includes the following lines of research:

- Metabolic syndrome
- Reproductive Health
- Pediatric and perinatal diseases
- Neuroendocrine Tumors

3. Infectious and immunological diseases and organ transplants

This program focuses on the study of diseases by different infectious agents, with a special emphasis on the infections in immunocompromised patients. It includes the following lines of research:

- HIV + Hepatitis C Virus
- Transplants
- Multi-drug resistance

4. Cancer (Oncology and Oncohematology)

This program focuses on the study of neoplastic diseases, including both solid tumors and hematologic neoplasms. It includes the following lines of research:

- Lung Cancer
- Breast Cancer
- Hepatocellular carcinoma
- Leukemias and Lymphomas
- Digestive Tumors
- Other tumors

5. Chronic and Inflammatory Diseases

This program focuses on the study of a number of chronic diseases of modern society, with special emphasis on those of an inflammatory nature. This program includes both basic research and clinical studies, with the ultimate aim of promoting a better understanding of the basis of chronic/inflammatory diseases and the improvement of their therapies. It includes the following lines of research:

- Cardiovascular diseases
- Diseases of the locomotor system and connective tissue
- Neurological diseases
- Mental health
- Kidney and urologic diseases
- Liver and digestive diseases
- Chronic inflammation and signaling

2.3 Research Groups

The IMIBIC’s 37 research groups are assemblies of scientists –both from the clinical and basic science fields– with common research interests. In the list below, the groups are divided into three categories: established; emerging and associated groups.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>GC1</td>
<td>T and NK immunosenescence. Antiviral immune response. PROGRAMS 1, 3, 5</td>
<td>Dr. Rafael Solana Lara (PI)</td>
</tr>
<tr>
<td>GC2</td>
<td>Oxidative and nitrosative stress in acute and chronic liver disease. PROGRAMS 3, 4, 5</td>
<td>Dr. Manuel De La Mata García (PI) Dr. José Antonio Bárcena Ruiz (CO-PI)</td>
</tr>
<tr>
<td>GC3</td>
<td>Infectious diseases. PROGRAMS 1, 3, 5</td>
<td>Dr. Julián De La Torre Cisneros (PI) Dr. Antonio Rivero Román (CO-PI)</td>
</tr>
<tr>
<td>GC4</td>
<td>Inflammation and cancer. PROGRAMS 2, 3, 4, 5</td>
<td>Dr. Eduardo Muñoz Blanco (PI) Dr. Marco A. Calzado (ER)</td>
</tr>
<tr>
<td>GC5</td>
<td>Systemic and chronic inflammatory autoimmune diseases of the locomotor system and connective tissue. PROGRAMS 2, 5</td>
<td>Dr. Rosario López Pedrera (PI) Dr. Eduardo Collantes Estévez (CO-PI)</td>
</tr>
<tr>
<td>GC6</td>
<td>New therapies in cancer. PROGRAM 4</td>
<td>Dr. Enrique Aranda Aguilar (PI) Dr. Antonio Rodríguez Arza (CO-PI) Dr. Juan de la Haba Rodríguez (ER)</td>
</tr>
<tr>
<td>GC7</td>
<td>Nephrology. Cell damage in chronic inflammation. PROGRAMS 15</td>
<td>Dr. Pedro Aljama García (PI) Dr. Julia Carracedo Añón (CO-PI)</td>
</tr>
</tbody>
</table>
| GC8 | Hormones and cancer.  
PROGRAMS 2, 4 | Dr. Justo P. Castaño Fuentes (PI)  
Dr. Francisco Gracia Navarro (CO-PI)  
Dr. Raúl Luque (CO-PI) |
| GC9 | Nutrigenomics. Metabolic syndrome.  
PROGRAMS 1, 2, 4, 5 | Dr. José L. Miranda (PI)  
Dr. Francisco Pérez Jiménez (CO-PI)  
Dr. Javier Delgado Lista (CO-PI)  
Dr. Pablo Pérez Martínez (CO-PI) |
| GC10 | Hormonal regulation of energy balance, puberty and reproduction.  
PROGRAMS 2, 4 | Dr. Manuel Tena Sempere (PI) |
| GC11 | Metabolism and adipocyte differentiation. Metabolic syndrome.  
PROGRAM 2 | Dr. María del Mar Malagón Poyato (PI)  
Dr. Francisco Gracia Navarro (CO-PI) |
| GC12 | Epidemiological Research in Primary Care.  
PROGRAMS 4, 5 | Dr. Luis Angel Pérez de Torres (PI) |
| GC13 | Calcium metabolism. Vascular calcification  
PROGRAMS 2, 5 | Dr. Mariano Rodríguez Portillo (PI) |
| GC14 | Cell therapy.  
PROGRAM 5 | Dr. I Concepción Herrera Arroyo (PI) |
| GC15 | Invasive cardiology and cell therapy.  
PROGRAM 5 | Dr. José Suárez De Lezo Cruz-Conde (PI) |
PROGRAM 4 | Dr. Joaquín Sánchez García (PI)  
Dr. Francisco Velasco Gimena (CO-PI) |
| GC17 | Pathophysiology of the endocrine system of vitamin D. Biotechnology and aging.  
PROGRAMS 1, 2 | Dr. José Manuel Quesada Gómez (PI) |
| GC18 | Translational research in surgery of solid organ transplants.  
PROGRAMS 4, 5 | Dr. Javier Briceño Delgado (PI) |
| GC19 | Applications of Artificial vision.  
PROGRAM 5 | Dr. Rafael Medina Carnicer (PI) |
| GC20 | Genetics and behavioural diseases.  
PROGRAM 5 | Dr. Manuel Ruiz Rubio (PI) |
| GC21 | Metabolomics. Identification of bioactive components.  
PROGRAMS 2, 4, 5 | Dr. María Dolores Luque De Castro (PI)  
Dr. Feliciano Priego Capote (ER) |
| GC22 | Epigenetics.  
PROGRAM 4 | Dr. Teresa Roldán Arjona (PI) |
| GC23 | Metabolism in Childhood  
PROGRAMS 2, 4 | Dr. Mercedes Gil Campos (PI) |
| GE1 | Oxidative stress and nutrition.  
PROGRAMS 1, 2, 5 | Dr. Isaac Túnez Fiñana (ER) |
| GE2 | Knowledge Discovery and Intelligent Systems  
PROGRAMS 1, 2, 3 | Dr. Sebastián Ventura Soto (ER) |
| GE3 | Inflammatory immune-mediated cutaneous diseases  
PROGRAM 5 | Dr. Juan A. Ruano Ruiz (ER) |
| GA1 | Lung transplantation. Thoracic malignancies.  
PROGRAM 4 | Dr. Ángel Salvatierra Velázquez (AR) |
| GA2 | Comprehensive care nurses. A multidisciplinary perspective.  
PROGRAMS 1, 5 | Dr. María Aurora Rodríguez Borrego (AR) |
| GA3 | Pneumology  
PROGRAMS 2, 4, 5 | Dr. Bernabé Jurado Gámez (AR) |
PROGRAM 2 | Dr. Juan Antonio Paniagua González (AR) |
GA5  Study of growth. Endocrinology and Child Nutrition. PROGRAM 2  Dr. Ramón Cañete Estrada (AR)

GA6  Clinical Analysis. PROGRAM 2  Dr. Fernando Rodríguez Cantalejo (AR)

GA7  Urology and sexual medicine PROGRAM 5  Dr. María José Requena Tapia (AR)  Dr. Rafael Prieto Castro (AR)

GA8  Radiology PROGRAMS 2, 4, 5  Dr. Marina Álvarez Benito (AR)  Dr. Daniel López Ruiz (AR)

GA9  Cardiovascular Pathology PROGRAMS 2, 4.  Dr. Ignacio Muñoz Carvajal (AR)

GA10  Nuclear Medicine PROGRAMS 2, 4.  Dr. Juan A. Vallejo Casas (AR)

GA11  Learning and Artificial Neural Networks-AYRNA PROGRAMS 2, 3, 4, 5  Dr. César Hervás Martínez (AR)

GC- Established Groups; GA - Associated Groups; GE - Emerging Groups

2.4.- Economic Resources

The table below shows IMIBIC's sources of income for the year 2014. The total revenue amounted to 9.5m €.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Public funding (regional)</td>
<td>1311590 €</td>
</tr>
<tr>
<td>Competitive Public funding (national)</td>
<td>1843800 €</td>
</tr>
<tr>
<td>Competitive Public funding (international)</td>
<td>206654 €</td>
</tr>
<tr>
<td>Innovation Public Procurement</td>
<td>2253610 €</td>
</tr>
<tr>
<td>Private Collaboration Agreements</td>
<td>1434316 €</td>
</tr>
<tr>
<td>CIBER (Competitive Public funding)</td>
<td>196000 €</td>
</tr>
<tr>
<td>Clinical Trials &amp; Observational Studies</td>
<td>1772682 €</td>
</tr>
<tr>
<td>Financial Support from the partners</td>
<td>463019 €</td>
</tr>
</tbody>
</table>

The incomes specified in the previous table have been obtained from the Profits and Loses Statement of IMIBIC in 2014. It should be noted how important the ‘Innovation Public Procurement’ projects are for the Institute, reaching a 24% out of the total incomes. Every line of income have grown from the previous period of 2013, also the financial support from the partners due to the new facilities that have been built for the Institute. In fact, it only represents a 5% out of the total amount of incomes.

In addition to this, in 2014 IMIBIC has incorporated scientific equipment for more than 5 million euros. All these equipments are described in the ‘Acquisition Scientific Equipment’ part of this Scientific Annual Report.
03

Goals achieved in 2014
# 3. Goals achieved in 2014

<table>
<thead>
<tr>
<th>Goals achieved in 2014</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>To transfer research groups to the new IMIBIC’s building.</td>
<td>Personnel transfer was initiated in 2014 with the move of the UCAIBs. Research groups will be transferred to the new building in the first trimester of 2015.</td>
</tr>
<tr>
<td>Increasing affiliations to the IMIBIC, the Reina Sofia University Hospital and the University of Cordoba</td>
<td>In this sense, we have increased affiliations, resulting in a 15% increase in our institutional visibility. In total, we have achieved that affiliations are correctly shown in 46% of publications.</td>
</tr>
<tr>
<td>Setting up a Clinical Research and Trial Platform including a unit of Phase I trials.</td>
<td>Launching a dissemination strategy to promote clinical research in healthcare centers. In the last trimester, the Unit of Clinical Research of the Hospital Provincial has initiated its activity attending more than 50 patients. More than 20 clinical trials have been performed in this Unit, which is currently conducting six clinical studies.</td>
</tr>
<tr>
<td>Promoting strategies for the development of the Unit of Technological Innovation.</td>
<td>Apart from the dissemination campaign launched to promote this Unit, its experts have intensified their involvement in the preparation of specifications for competitive calls. As a result, the quality of the projects developed has increased and new opportunities have emerged, such as the development of new ITC tools by the UCAIBs. In fact, several software development projects have been successfully carried out by different units.</td>
</tr>
<tr>
<td>Putting the facilities and equipment funded through 2007, 2008 and 2010 competitive calls into service and integrating them in the UCAIB area of the IMIBIC.</td>
<td>The funds obtained through said competitive calls were invested in the acquisition of the scientific equipment detailed in the applications forms, which has been installed in a specific site of IMIBIC headquarters at the disposal of the head of each UCAIB.</td>
</tr>
<tr>
<td>Promoting strategies for the development of the Platform for Innovation in Medical Technology (ITEMAS)</td>
<td>Promoting cooperation with ITEMAS workgroups “Emprendimiento” and “Compra publica-innovadora (“Entrepreneurship” and “Innovative public acquisitions”). The latter work group—which was created recently—counts on the especially intense participation of IMIBIC. Similarly, IMIBIC representatives have attended the meetings held by national and regional ITEMAS nodes to enhance the activity of the network.</td>
</tr>
<tr>
<td>Creating special centralized units such as the Isotopes Laboratory and the Animal House.</td>
<td>By the end of 2014, the Isotopes Laboratory was given authorization by the regulatory authorities, whereas the installation of the Animal House has taken the whole year.</td>
</tr>
<tr>
<td>Giving continuity to our fundraising strategy based on public acquisition calls.</td>
<td>IMIBIC representatives have attended different national and international public acquisition events for networking purposes. The objective was to contact institutions from other regions in Spain and UE countries in order to present joint proposals at national and European level, respectively. In this regard, seven innovative public acquisition proposals have been submitted in response to several national calls for proposals. Two innovative public acquisition proposals have been accepted following two international call for proposals.</td>
</tr>
<tr>
<td>Increasing public funding, donations and sponsorships.</td>
<td>In 2014, fundraising increased by 25% through competitive tenders for research, HHRR and thematic network projects. Similarly, private agreements and income from clinical trials increased by 10%.</td>
</tr>
<tr>
<td>Activating the IMIBIC node in the ProteoRed-ISCIII Platform.</td>
<td>In this regard, considerable efforts have been catalysed by the coordinators of the Platform. Also, IMIBIC hosted the X Meeting of Clinical Proteomics that the ProteoRed-ISCIII Platform held every year in a different node.</td>
</tr>
<tr>
<td>Increasing the number of bio-samples and donations to the Biobank.</td>
<td>The activity of the Biobank Unit has increased significantly. The number of biosources collected -40,469- account for a 27% increase with respect to 2013. Also, the number of biosources donated in 2014 was 6708, which accounts for a 55% increase with respect to 2013.</td>
</tr>
<tr>
<td>Increasing affiliations to the IMIBIC among research groups from healthcare centers.</td>
<td>Three research groups from different healthcare centers and two research groups from the University of Cordoba became IMIBIC members in 2014.</td>
</tr>
<tr>
<td>Signing a new agreement among IMIBIC member institutions.</td>
<td>A new agreement is expected to be signed during the first trimester of 2015.</td>
</tr>
</tbody>
</table>
External Scientific Advisory Board
4. External Scientific Advisory Board

The composition of the External Scientific Advisory Board was modified in 2014. The annual ordinary meeting took place in December 16, 2014. Its structure is as follows:

Dr. Lina Badimon. Director of the Cardiovascular Research Centre (CSIC-ICCC) (Barcelona)

Dr. Carlos Diéguez. Director of the Centre for Research in Molecular Medicine and Chronic Diseases (CIMUS) (Santiago de Compostela)

Dr. José María Ordovás. Senior Scientist and Director for the Nutrition and Genomics Laboratory and Chair of the Functional Genomics Core of the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University (USA). Scientific Director of IMDEA Food (Madrid)

Dr. Francisco Sánchez Madrid. Professor of Immunology at the Universidad Autónoma de Madrid and Scientific Director of La Princesa Research Institute (Madrid)

Dr. Carlos López-Otín. Professor of Biochemistry and Molecular Biology at the University of Oviedo (Oviedo)

D. Jorge Barrero. Deputy Chairman of the Spanish Association of Biotech Companies (ASEBIO) (Madrid)

According to the internal operation procedure, the main contents of the meeting were focused on mandatory matters. The members forwarded their opinions on the management of the Institute, such as the incorporation of new research groups, the implementation of strategic initiatives, the master plan to change the scientific structure and the approval of the budget for 2015.

From left to right: Manuel Tena Sempere, Carlos Diéguez, Francisco Sánchez, Lina Badimón, José María Ordovás and Francisco Pérez Jiménez
Participation in Networks
5. Participation in Networks

IMIBIC researchers are involved in a wide range of strategic initiatives coordinated by the Health Institute Carlos III and they participate in its National Research Networks program, through the Networks for Cooperative Research in Health (RETICs in Spanish) and the Biomedical Research Networking Centers (CIBERs in Spanish). In addition, IMIBIC is member of the new platforms that support research in health sciences and technologies.

In fact, among the 37 groups integrated in the IMIBIC, 15 participate in partnership programs related to different ISCIII strategic initiatives. 10 groups are involved in 11 RETICs. Additionally, 6 groups are involved in 3 CIBERs and there are 26 groups involved in the Andalusian Plan for Research, Development & Innovation (PAIDI Program).

CIBER Program

Our researchers lead the following CIBERs’ nodes:

<table>
<thead>
<tr>
<th>CIBER</th>
<th>Group and Principal Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIBER on Obesity and Nutrition (CIBERobn)</td>
<td>José López Miranda (PI) GC9-Nutrigenomics. Metabolic Syndrome.</td>
</tr>
<tr>
<td>CIBER on Obesity and Nutrition (CIBERobn)</td>
<td>Manuel Tena-Sempere (PI) GC10-Hormonal regulation of energy balance, puberty and reproduction</td>
</tr>
<tr>
<td>CIBER on Liver and Digestive Diseases (CIBERehd)</td>
<td>Manuel de la Mata García (PI) GC2-Oxidative and nitrosative stress in acute and chronic liver disease.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CIBER</th>
<th>Collaborating Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIBER on Obesity and Nutrition (CIBERobn)</td>
<td>Justo P. Castaño Fuentes (PI) GC8-Hormones and Cancer</td>
</tr>
<tr>
<td>CIBER on Obesity and Nutrition (CIBERobn)</td>
<td>María del Mar Malagón Poyato (PI) GC11 Metabolism and adipocyte differentiation. Metabolic syndrome</td>
</tr>
<tr>
<td>CIBER on Rare Diseases (CIBERER)</td>
<td>Mercedes Gil Campos (PI) GC23- Metabolism in Childhood</td>
</tr>
</tbody>
</table>

Platforms

IMIBIC has become member of the new platforms that support research in health sciences and technologies of the Health Institute Carlos III:

- Medical Technology Innovation Platform (ITEMAS)
- Biomolecular and Bioinformatics Resources Platform –Proteored
- Clinical Research and Clinical Trials Units Platform –SCReN
- Biobanks Platform

RETICS Program

Some of our researchers lead the following network nodes:

<table>
<thead>
<tr>
<th>Name of the Network</th>
<th>Principal Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS Research Network (RIS)</td>
<td>Eduardo Muñoz Blanco</td>
</tr>
<tr>
<td>Cooperative Research Thematic Network on Aging and Frailty (RETICEF)</td>
<td>José Manuel Quesada Gómez, Isaac Túnez Fiñana</td>
</tr>
<tr>
<td>Spanish Renal Research Network (REDinREN)</td>
<td>Pedro Aljama García</td>
</tr>
<tr>
<td>Spanish Network for Research into Infectious Pathologies (REIPI)</td>
<td>Julián de la Torre Cisneros</td>
</tr>
<tr>
<td>National Biobank Network</td>
<td>Manuel Medina Pérez</td>
</tr>
<tr>
<td>Cooperative Research Thematic Network on Cancer (RETICC)</td>
<td>Enrique Aranda Aguilar</td>
</tr>
</tbody>
</table>
**Other cooperative networks:**

<table>
<thead>
<tr>
<th>Name of the Network</th>
<th>Collaborating Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS Research Networks (RIS)</td>
<td>Antonio Rivero Román</td>
</tr>
<tr>
<td>AIDS Research Networks (RIS)</td>
<td>José Peña Martínez</td>
</tr>
<tr>
<td>Spanish Network for Research in Infectious Pathology (REIPI)</td>
<td>Rafael Solana Lara</td>
</tr>
<tr>
<td>Network for Research on Mother-Child Health (RedSAMID)</td>
<td>Mercedes Gil Campos</td>
</tr>
<tr>
<td>Research Network on Preventive and Health Promotion in Primary Care (RedIAPP)</td>
<td>Luis A. Pérula de Torres</td>
</tr>
</tbody>
</table>

**Other research networks:**

<table>
<thead>
<tr>
<th>Name of the Network</th>
<th>Principal Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Society for Rheumatology (REGISPONSER)</td>
<td>Eduardo Collantes Estévez</td>
</tr>
<tr>
<td>Spanish Myelodysplastic Syndrome Registry (RESMD)</td>
<td>Joaquín Sánchez García (*)</td>
</tr>
<tr>
<td>Observational Immune Tolerance Induction research program (obsITI)</td>
<td>Francisco Velasco Gimena (*)</td>
</tr>
</tbody>
</table>

*Members of the same group

**PAIDI Groups**

Many IMIBIC researchers belong to or lead groups formed under the Andalusian Plan for Research, Development and Innovation (PAIDI, in Spanish).

<table>
<thead>
<tr>
<th>BIO-139</th>
<th>Principal investigator</th>
<th>Francisco Gracia Navarro</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-208</td>
<td>Principal investigator</td>
<td>José Suárez de Lezo Cruz Conde</td>
</tr>
<tr>
<td>BIO-218</td>
<td>Principal investigator</td>
<td>José Antonio Barcena Ruiz</td>
</tr>
<tr>
<td>BIO-272</td>
<td>Principal investigator</td>
<td>Manuel Ruiz Rubio</td>
</tr>
<tr>
<td>BIO-301</td>
<td>Principal investigator</td>
<td>Rafael Rodríguez Ariza</td>
</tr>
<tr>
<td>BIO-304</td>
<td>Principal investigator</td>
<td>Eduardo Muñoz Blanco</td>
</tr>
<tr>
<td>BIO-310</td>
<td>Principal investigator</td>
<td>Manuel Tena Sempere</td>
</tr>
<tr>
<td>CTS-179</td>
<td>Principal investigator</td>
<td>Escolástico Aguilera Tejero</td>
</tr>
<tr>
<td>CTS-260</td>
<td>Principal investigator</td>
<td>Pedro Aljama García</td>
</tr>
<tr>
<td>CTS-208</td>
<td>Principal investigator</td>
<td>José Peña Martínez</td>
</tr>
<tr>
<td>CTS-212</td>
<td>Principal investigator</td>
<td>Francisco Pérez Jiménez</td>
</tr>
<tr>
<td>CTS-234</td>
<td>Principal investigator</td>
<td>Enrique Aranda Aguilar</td>
</tr>
<tr>
<td>CTS-273</td>
<td>Principal investigator</td>
<td>Manuel de la Mata Garcia</td>
</tr>
<tr>
<td>CTS-413</td>
<td>Principal investigator</td>
<td>José Manuel Quesada Gómez</td>
</tr>
<tr>
<td>CTS-452</td>
<td>Principal investigator</td>
<td>Roger Ruiz Moral</td>
</tr>
<tr>
<td>CTS-525</td>
<td>Principal investigator</td>
<td>José López Miranda</td>
</tr>
<tr>
<td>CTS-651</td>
<td>Principal investigator</td>
<td>Juan Antonio Paniagua González</td>
</tr>
<tr>
<td>CTS-620</td>
<td>Principal investigator</td>
<td>Francisco Velasco Gimena</td>
</tr>
<tr>
<td>CTS-624</td>
<td>Principal investigator</td>
<td>Isaac Túnez Fiñana</td>
</tr>
<tr>
<td>CTS-647</td>
<td>Principal investigator</td>
<td>Julián Carlos de la Torre Cisneros</td>
</tr>
<tr>
<td>CTS-666</td>
<td>Principal investigator</td>
<td>Aurora Rodriguez Borrego</td>
</tr>
<tr>
<td>CTS-639</td>
<td>Principal investigator</td>
<td>María Mercedes Gil Campos</td>
</tr>
<tr>
<td>FQM-227</td>
<td>Principal investigator</td>
<td>María Dolores Luque de Castro</td>
</tr>
<tr>
<td>TIC-161</td>
<td>Principal investigator</td>
<td>Rafael Medina Carnicer</td>
</tr>
<tr>
<td>TIC-148</td>
<td>Principal investigator</td>
<td>César Hervás Martínez</td>
</tr>
<tr>
<td>TIC-122</td>
<td>Principal investigator</td>
<td>Sebastián Ventura Soto</td>
</tr>
</tbody>
</table>
06
Training Activities
6. Training Activities

6.1. Introduction

The Institute conceives training as a basic, crucial and institutional tool to achieve its scientific goals. Thus, it has designed a program aimed at promoting knowledge and reinforcing its current lines of research. The Training Coordinator is Dr. Rosario López Pedrera. IMIBIC together with the University of Cordoba leads a unique PhD Program in Biomedicine. This PhD Program is coordinated by Dr. Francisco Gracia Navarro and helps to obtain highly qualified researchers, promote teaching and favor professional qualification in the field of biomedical sciences.

6.2. Training

The following sections list the research training activities, which took place in 2014.

6.2.1 PhD in Biomedicine

IMIBIC leads a unique PhD Program in Biomedicine. This new program, coordinated by Prof. Francisco Gracia Navarro, PhD, pretends to qualify human resources and stimulate professional qualification in the field of biomedical sciences.

Website: http://www.uco.es/idep/doctorado/programas/biomedicina

6.2.2. Masters’ Degrees. University of Cordoba

The three master’s degrees are driven by academic directors who are members of the IMIBIC:

- Translational Biomedical Research
  Academic Director: Prof. Francisco Gracia Navarro
  Website: http://www.uco.es/estudios/idep/masteres/investigacion-biomedica-traslacional

- Methodology of Research in Health Sciences
  Academic Director: Prof. Eduardo Collantes Estévez
  Website: http://www.uco.es/estudios/idep/masteres/metodologia-investigacion-ciencias-de-la-salud

- Nutrition and Metabolism (with Quality Accreditation by ANECA)
  Academic Director: Prof. Francisco Pérez Jiménez
  Website: http://www.uco.es/estudios/idep/masteres/nutricion-metabolismo

6.2.3. Courses and other training activities:

Specific courses in Research Methodology and other key research areas at IMIBIC have been held during 2014.

6.2.3.1. Courses

IMIBIC organized the following list of activities:

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Title</th>
<th>Duration*(h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Event</td>
<td>4th Maimonides Commemorative Lecture</td>
<td>4</td>
</tr>
<tr>
<td>Institutional Event</td>
<td>5th Conference of Young Researchers</td>
<td>10</td>
</tr>
<tr>
<td>Seminar</td>
<td>Seminar-Sample size calculation in clinical research-IMIBIC’s Methodology and Biostatistics Unit</td>
<td>3</td>
</tr>
<tr>
<td>Seminar</td>
<td>Seminar-Introduction to Systems Biology-IMIBIC’s Bioinformatics Unit</td>
<td>2</td>
</tr>
<tr>
<td>Seminar</td>
<td>Seminar-Introduction to Colocalization in Analysis (ImageJ)-IMIBIC’s Microscopy, Cytomics and Scientific Imaging Unit</td>
<td>1.5</td>
</tr>
</tbody>
</table>
IMIBIC collaborated in the following list of activities:

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Title</th>
<th>Duration*(h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop</td>
<td>Mass Spectrometry. ABSciex and IMIBIC’s Proteomic Unit</td>
<td>2</td>
</tr>
<tr>
<td>Workshop</td>
<td>Droplet Digital PCR-BioRad and IMIBIC’s Proteomic Unit</td>
<td>2</td>
</tr>
<tr>
<td>Seminar</td>
<td>Genomics-Thermo Scientific and IMIBIC’s Bioinformatics Unit</td>
<td>2</td>
</tr>
<tr>
<td>Workshop</td>
<td>Maldi Imaging-ABSciex and IMIBIC’s Proteomic Unit</td>
<td>2</td>
</tr>
</tbody>
</table>

6.2.3.2. IMIBIC Research Seminars

IMIBIC research seminars promote networking and contribute to the knowledge of the researchers. The Institute organized 29 seminars during the course 2013-2014 and 6 of them were given by international speakers. The seminars organized by the Institute during the course 2013-2014 were:

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Institution &amp; Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>25/09/2013</td>
<td>Manfredi Rizzo</td>
<td>Institution: Universidad de Palermo (Italia) Title: Atherogenicity and clinical significance of LDL subclasses</td>
</tr>
<tr>
<td>26/09/2013</td>
<td>Manuel Santos Rosa</td>
<td>Institution: University of Coimbra (Portugal) Title: Immunity and sepsis</td>
</tr>
<tr>
<td>3/10/2013</td>
<td>Sergey Degtyarev</td>
<td>Institution: SibEnzyme Ltd. Novosibirsk (Russia) Title: GLAD-PCR assay: a new epigenetic method for cancer diagnostics</td>
</tr>
<tr>
<td>7/11/2013</td>
<td>Alberto Muñoz Terol</td>
<td>Institution: Biomedical Research Institute “Alberto Sols” Title: The pleiotropic actions of vitamin D</td>
</tr>
<tr>
<td>12/12/2013</td>
<td>Jesús Argente</td>
<td>Institution: Niño Jesús Hospital Title: Obesity in children and teenagers: new concepts and future perspectives</td>
</tr>
<tr>
<td>19/12/2013</td>
<td>Marc Claret</td>
<td>Institute: IDIBAPS-Esther Koplowitz Centre Title: Mitofusin 2 in POMC neurons connects ER stress with leptin resistance and energy imbalance</td>
</tr>
<tr>
<td>9/01/2014</td>
<td>Luis Miguel García Segura</td>
<td>Institution: Cajal-CSIC Research Centre Title: Neuroprotective actions of estradiol: myth or reality?</td>
</tr>
<tr>
<td>16/01/2014</td>
<td>Miguel Ángel Martinez</td>
<td>Institution: University of Navarra Clinic Title: Mediterranean diet and chronic disease: new results of Predimed clinical trial</td>
</tr>
<tr>
<td>17/01/2014</td>
<td>Manel Puig</td>
<td>Institution: Germans Trias i Pujol Health Sciences Research Institute Title: Treatment of acromegaly in the era of personalized and predictive medicine</td>
</tr>
<tr>
<td>23/01/2014</td>
<td>José Becerra</td>
<td>Institution: University of Malaga-CIBER BBN Title: Tissue engineering for bone defect healing</td>
</tr>
<tr>
<td>30/01/2014</td>
<td>Ramón Gomis</td>
<td>Institution: IDIBAPS Title: Adipose tissue: impact on diabetes and β cell</td>
</tr>
<tr>
<td>6/2/2014</td>
<td>Carmen Jerónimo</td>
<td>Institution: Portuguese Oncology Institute (Portugal) Title: Epigenetics as a tool for cancer detection and prognosis/prediction assessment</td>
</tr>
<tr>
<td>13/2/2014</td>
<td>Marta Garaulet</td>
<td>Institution: University of Murcia Title: Chronobiology and obesity: the weight of hours</td>
</tr>
<tr>
<td>20/2/2014</td>
<td>Marta Sánchez-Carbajo</td>
<td>Institution: CIC bioGUNE Title: Molecular profiling in bladder cancer: from –omics signatures to individual candidates</td>
</tr>
<tr>
<td>27/2/2014</td>
<td>Mónica de la Fuente del Rey</td>
<td>Institution: Complutense University of Madrid Title: Control of ageing process</td>
</tr>
<tr>
<td>7/03/2014</td>
<td>Susan M. Webb</td>
<td>Institution: Hospital Sant Pau Title: How to define ‘healing’ in Cushing’s Syndrome</td>
</tr>
<tr>
<td>13/3/2014</td>
<td>Ramón Trullas</td>
<td>Institution: CSIC Research Centre Title: Fusion or fission?: Mitochondrial Dynamics and neuronal pentraxine</td>
</tr>
<tr>
<td>Date</td>
<td>Name</td>
<td>Institution</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>20/03/2014</td>
<td>Mónica Marazuela</td>
<td>La Princesa University Hospital</td>
</tr>
<tr>
<td>27/03/2014</td>
<td>Gema Moreno</td>
<td>MD Anderson Cancer Center</td>
</tr>
<tr>
<td>03/04/2014</td>
<td>Luis Martínez</td>
<td>Marqués de Valdecilla University Hospital</td>
</tr>
<tr>
<td>09/04/2014</td>
<td>José Antonio Cancelas</td>
<td>University of Cincinnati College of Medicine</td>
</tr>
<tr>
<td>10/04/2014</td>
<td>María Berdasco</td>
<td>IDIBELL</td>
</tr>
<tr>
<td>24/04/2014</td>
<td>Sergio Rodríguez Cuenca</td>
<td>University of Cambridge (United Kingdom)</td>
</tr>
<tr>
<td>30/04/2014</td>
<td>Constantino Martínez Gómez</td>
<td>University of Murcia</td>
</tr>
<tr>
<td>09/05/2014</td>
<td>José Viña</td>
<td>University of Valencia</td>
</tr>
<tr>
<td>15/05/2014</td>
<td>José Medina Moya</td>
<td>University of Barcelona</td>
</tr>
<tr>
<td>22/05/2014</td>
<td>José Verdú</td>
<td>University of Alicante</td>
</tr>
<tr>
<td>05/06/2014</td>
<td>José Córdoba Chacón</td>
<td>University of Illinois (Chicago, USA)</td>
</tr>
<tr>
<td>12/05/2014</td>
<td>Gema Frühbeck</td>
<td>University of Navarra Clinic</td>
</tr>
</tbody>
</table>


# 6.2.3.3. Institutional Events

**5th Conference of Young Researchers**  
**Date: 6th May 2014**

**Programme:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session I</th>
<th>Session II</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00-9.30</td>
<td>Registration and pinning up of posters</td>
<td>11:30-13:00</td>
</tr>
<tr>
<td>9.30-10.00</td>
<td><strong>Introduction and welcome</strong></td>
<td><strong>Session II</strong></td>
</tr>
<tr>
<td>10:00-11:00</td>
<td><strong>Session I</strong></td>
<td>Chronic and Inflammatory diseases</td>
</tr>
<tr>
<td><strong>Infectious Inflammatory and Immunological diseases. Active ageing and frailty. Organ Transplantation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.a</td>
<td>10:00-10:15</td>
<td>II.a 11:30-11:45</td>
</tr>
<tr>
<td>I.b</td>
<td>10:15-10:30</td>
<td>II.b 11:45-12:00</td>
</tr>
<tr>
<td>Postsurgical drainage fluid as predictor marker of surgical-site infection after cervical neck dissection.</td>
<td>Testosterone induces transgenerational impairments on the behavior of C. elegans. A model to explain androgen-dependent autistic traits. Mª del Mar Gámez del Estal</td>
<td></td>
</tr>
<tr>
<td>I.c</td>
<td>10:30-10:45</td>
<td>II.c 12:00-12:15</td>
</tr>
<tr>
<td>Lack of consensus for defining clinical suspicion of rejection after liver transplantation: Implications on clinical practice and possible solutions.</td>
<td>Functional validation of SNP rs6105269 in Crohn’s disease. Patricia Aguilar Melero</td>
<td></td>
</tr>
<tr>
<td>I.d</td>
<td>10:45-11:00</td>
<td>II.d 12:15-12:30</td>
</tr>
<tr>
<td>Acceptability and feasibility of the opportunistic search of patients with HIV infection in primary care centers of the national health service.</td>
<td>Inflammation impairs regulation of FGF23 by phosphorus in renal failure. Maria Encarnación Rodríguez Ortiz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11:00-11:30 Coffee Break. Poster session</td>
<td>II.e 12:30-12:45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transcriptional analysis reveals different immune regulation between scalp and skin psoriasis with potential therapeutic implications. Juan Ruano Ruiz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II.f 12:45-13:00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Effects of calcitriol and paricalcitol on osteogenesis of bone marrow mesenchymal stem cells. Carmen Herencia Bellido</td>
</tr>
</tbody>
</table>
13:00-14:00 Plenary conference
   Dr. José Luis García Pérez

14:00-16:00 Lunch

16:00-17:15 Session III
   Cancer (Oncology and Onco-hematology)

III.a  16:00-16:15
   Hypoxia Response Induces the Formation of Poly-ploid Giant Cells and Cancer Stem Cells in Colon Cancer.
   Laura M. López Sánchez

III.b  16:15-16:30
   Lack of endogenous cortistatin but not somatostatin exacerbates carcinogen-induced mammary gland tumorigenesis in mice.
   Alicia Villa Osaba

III.c  16:30-16:45
   The fungal metabolite galiellalactone blocks cell cycle progression in prostate cancer cells through STAT3 and NF-κB independent pathways.
   Víctor García González

III.d  16:45-17:00
   In vivo effect of 5-azacitidine treatment in regulatory t cells in patients with aml / mds.
   Diana Buenasmañanas Cervantes

III.e  17:00-17:15
   Modern surgical liver resections offer better results than transarterial chemoembolization in cirrhotic patients with b-bclc stage hcc.
   Ana Belén Gallardo Herrera

17:15-17:45 Poster showcase

17:45-19:00 Session IV
   Nutrition. Endocrine and metabolic diseases

IV.a  17:45-18:00
   SEPT11: a novel adipocyte marker related to obesity and insulin resistance.
   Natalia Rocío Moreno Castellanos

IV.b  18:00-18:15
   Expression of MkRN3 and mir-30b in the hypothalamus during postnatal maturation and in preclinical models of altered puberty: A novel regulatory system in the control of puberty onset?
   Violeta Heras Dominguez

IV.c  18:15-18:30
   Levels of fitness and physical activity influence changes on response of plasma adipokines at prepubertal stage.
   Francisco Jesús Llorente Cantarero

IV.d  18:30-18:45
   Beneficial Effect of CETP Gene Polymorphism rs3764261 in Combination with a Mediterranean Diet on Lipid Metabolism in the Patients with Metabolic Syndrome.
   Ruth Blanco Rojo

IV.e  18:45-19:00
   Genetic targets which could determine the shortening of telomeres in obese people.
   Oriol Rangel Zúñiga

19:00-19:15 Award-giving and closing ceremony
Programme:

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.00</td>
<td><strong>Opening Ceremony</strong></td>
</tr>
<tr>
<td>11.10</td>
<td><strong>IMIBIC Awards</strong></td>
</tr>
<tr>
<td></td>
<td>• “Enrique Aguilar Benítez de Lugo” Prize for the most relevant publication</td>
</tr>
<tr>
<td></td>
<td>Reduced exposure to calcineurin inhibitors early after liver transplantation prevents recurrence of hepatocellular carcinoma</td>
</tr>
<tr>
<td></td>
<td>Manuel Rodríguez-Perálvarez (GC2)</td>
</tr>
<tr>
<td></td>
<td>• Prize for the most relevant scientific publication in collaboration with international groups</td>
</tr>
<tr>
<td></td>
<td>Changes in Hypothalamic Expression of the Lin28/let-7 System and Related MicroRNAs During Postnatal Maturation and After Experimental Manipulations of Puberty</td>
</tr>
<tr>
<td></td>
<td>María Manfredi Lozano (GC10)</td>
</tr>
<tr>
<td></td>
<td>• Prizes for the most relevant research results</td>
</tr>
<tr>
<td></td>
<td>P201431317: Composición para la prevención, mejora y/o tratamiento de procesos metastásicos y cánceres resistentes</td>
</tr>
<tr>
<td></td>
<td>Antonio Rodríguez Ariza (GC6)</td>
</tr>
<tr>
<td></td>
<td>Procedimiento de recogida de las infecciones hospitalarias</td>
</tr>
<tr>
<td></td>
<td>Inmaculada Salcedo Leal</td>
</tr>
<tr>
<td></td>
<td>• Award for the best master’s degree thesis</td>
</tr>
<tr>
<td></td>
<td>Mecanismos de regulación de la ubiquitina ligasa SIAH2 mediados por la familia de quinasas</td>
</tr>
<tr>
<td></td>
<td>DYRK clase II</td>
</tr>
<tr>
<td></td>
<td>Amaranta Armesto Jiménez</td>
</tr>
<tr>
<td></td>
<td>• Award for the journalistic news report most valuable to IMIBIC</td>
</tr>
<tr>
<td></td>
<td>Pilar García Baquero. ABC Córdoba</td>
</tr>
<tr>
<td>12.00</td>
<td><strong>Innovation Awards IMIBIC-ROCHE</strong></td>
</tr>
<tr>
<td>12.15</td>
<td><strong>Maimonides Lecture</strong></td>
</tr>
<tr>
<td></td>
<td>Dr. Carlos Diéguez. University of Santiago de Compostela</td>
</tr>
<tr>
<td>13.00</td>
<td><strong>Prize-giving and closing ceremony</strong></td>
</tr>
</tbody>
</table>
6.3. Results of Training Activities

6.3.1. Doctoral Theses

The training dedication of IMIBIC is also reflected by the large number of doctoral theses that are directed and supported by the IMIBIC members. A list is provided below of the 29 doctoral theses directed by researchers from the Centre during 2014 (only PhD Program in Biomedicine). Currently, there are 108 PhD students at IMIBIC.

<table>
<thead>
<tr>
<th>Thesis Author</th>
<th>Thesis Director 1</th>
<th>Thesis Director2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aguilar Quintero, María</td>
<td>Cañete Estrada, Ramon</td>
<td>Caballero Villarraso, Javier</td>
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<tr>
<td>Alonso Gómez, Jaime</td>
<td>Ruñán Peña, Sebastian</td>
<td>Gómez Barbadillo, José</td>
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<tr>
<td>Campos Fernández, Mª del Carmen</td>
<td>Solana Lara, Rafael</td>
<td>Pera Rojas, Alejandra</td>
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<td>Candau Alvarez, Alberto</td>
<td>Perez Navero, Juan Luis</td>
<td>Lopez Miranda, Jose</td>
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<td>Estévez Cordero, Orlando Allende</td>
<td>Santamarina Ossorio, Manuel</td>
<td>Ortega Gromaz, Consuelo</td>
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<td>Florez Almonacid, Clara Inés</td>
<td>Rodríguez Borrego, Maria Aurora</td>
<td>Jurado Ramos, Alfredo</td>
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<td>Garcia Rodriguez, Rosa María</td>
<td>Guerras Pasadas, Francisco Antonio</td>
<td>Feo Brito, Francisco</td>
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<td>Gómez Delgado, Francisco Jesús</td>
<td>Lopez Miranda, Jose</td>
<td>Perez Martinez, Pablo</td>
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<td>González de la Guardia, Lorena*</td>
<td>Lopez Miranda, Jose</td>
<td>Yubero Serrano, Elena Maria</td>
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<td>Hidalgo Lopezosa, Pedro*</td>
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<td>Jiménez Gómez, Elvira</td>
<td>Cano Sanchez, Antonio</td>
<td>Oteros Fernández, Rafael</td>
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<td>Lara de la Rosa, Maria del Pilar</td>
<td>Guerra Pasadas, Francisco Antonio</td>
<td>Feo Brito, Francisco</td>
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<td>León Téllez, Silvia</td>
<td>Pinilla Jurado, Leonor</td>
<td>Tena Sempere, Manuel Jose</td>
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<td>Mendiola de la Osa, Agustín</td>
<td>Perez Navero, Juan Luis</td>
<td>Javier García Fernández</td>
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<td>Meza Miranda, Eliana Romina</td>
<td>Lopez Miranda, Jose</td>
<td>Antonio Camargo Garcia</td>
</tr>
<tr>
<td>Moreno Solis, Gloria Maria</td>
<td>Perez Navero, Juan Luis</td>
<td>Torres Borrego, Javier</td>
</tr>
<tr>
<td>Muñoz Serrano, Ana</td>
<td>Cañete Estrada, Ramon</td>
<td>González González, Abel</td>
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<td>Olaya Abril, Alfonso*</td>
<td>Bercena Ruiz, Jose Antonio</td>
<td>Rodriguez Ortega, Manuel José</td>
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<td>Peña Orihuela, Patricia Judit</td>
<td>Lopez Miranda, Jose</td>
<td>Camargo García, Antonio</td>
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<td>Rabanal Ruiz, Yoana*</td>
<td>Malaron Poyato, Maria del Mar</td>
<td>Vázquez Martínez, Rafael Manuel</td>
</tr>
<tr>
<td>Rich Ruiz, Manuel*</td>
<td>Rodriguez Borrego, Maria Aurora</td>
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<tr>
<td>Romero Urrutia, Alicia</td>
<td>Cañete Estrada, Ramon</td>
<td>Caballero Villarraso, Javier</td>
</tr>
<tr>
<td>Jaén Moreno, María José*</td>
<td>Luque Luque, Rogelio</td>
<td>Moreno Diaz, Maria José</td>
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<tr>
<td>Larraz Bustos, Marcel</td>
<td>Luuch Fernandez, Mercedes</td>
<td>Mesa Ramos, Manuel</td>
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<td>Martínez Aranda, Luis Manuel</td>
<td>Ariza Vargas, Leopoldo</td>
<td>Pérez López, Isaac</td>
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<td>Ogáyar Luque, Cristina</td>
<td>Guillen del Castillo, Manuel</td>
<td>Benítez Siliero, Juan de Dios</td>
</tr>
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<td>Pardo Arquero, Víctor Pablo</td>
<td>Suarez de Lezo Cruz-Conde, Jose</td>
<td>Ruiz Ortiz, Martin</td>
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<td>Pulido Ortega, Laura</td>
<td>Pérola de Torres, Luis Angel</td>
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<td>Ramírez Pistón, Juan Manuel</td>
<td>Poblador Fernandez, Maria Soledad</td>
<td>Lanco Alonso, Jose Luis</td>
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<td>Ríos Castillo, José Enrique</td>
<td>Carrasco Rico, Santiago</td>
<td>Arjona Berral, Jose Eduardo</td>
</tr>
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<td>Romero Nieto, María Inmaculada</td>
<td>Arjona Berral, Jose Eduardo</td>
<td>Muñoz Villanueva, Ma del Carmen</td>
</tr>
</tbody>
</table>

*Theses with International Mention
07

Infrastructures
The most relevant hallmark in 2014 concerning facilities was the completion of the works of the new headquarters of the IMIBIC, which was funded by the University of Cordoba, the Spanish Ministry of Economics and Competitiveness and the FEDER programme. It is a five-floor building with 5500m² of laboratories and 800m² that will host an animal house including Eight rat/mouse polivalent housing rooms, four laboratories and an experimental operating room. IMIBIC’s research groups will be transferred to these headquarters by early 2015 once all equipments have been installed. Room will be assigned to the research groups according to their scientific production. Similarly, the new headquarters will host the UCAIBs.

Apart from this, in 2014 were acquired the following equipments that will be allocated for general and specific use of each research group or UCAIB:

• Laboratory equipment for the four floors devoted to research and the animal house.
• Reforms have been performed in the facilities that used to be employed for basic experimentation to adapt them for clinical research. Additionally, these facilities have been furnished to hold doctor offices, patient control rooms and an outpatient hospital. Also, an ultrasound scan was also acquired for these facilities.
• More room has been devoted to biological sample refrigerators.
• More equipments have been acquired for the UCAIBs:
  • Genomics:
    - A digital nucleid acid counter.
    - A Next-generation sequencing system.
    - A digital PCR
  • Experimental animal service:
    - A set of high-performance anesthesia equipments for research using animal models.
    - A respirometry and intake analysis system
    - A body composition imaging system for laboratory animals
    - A X-ray imaging arch and an ultrasound scan
  • Microscopy and cytometry:
    - Two 18 and 6-color cytometer platforms.
    - A sorter cytometer.
• The following equipments were acquired for general use at the IMIBIC:
  • A dynamic living cell analysis system
  • An optogenetic analysis system (multicomponent)
  • One high-capacity centrifuge
  • A preparative HPLC
• General equipment for the nivel culture rooms (including a P2 category room) including flow cabinets, CO2 incubators, refrigerators and reservoirs.

Finally, IT equipment have been installed including servers (general and for bioinformatic analysis), network microelectronics, furnishing, and basic research instruments (tubes, centrifuges and vortex).
Biomedical Research Support Units
8. Biomedical Research Support Units

8.1. Isotope Unit

8.1.1. Composition
The Unit is composed of:

Supervisor:  
Dr. Eduardo Muñoz Blanco  
filmuble@uco.es

Operator:  
Antonia Sánchez Arroyo  
antonia.sanchez@imibic.org

8.1.2. Equipment and Facilities
In IMIBIC, we possess two laboratories dedicated to working with radioactive isotopes both \( \gamma \) and \( \beta \). One is located on the -2 floor and the other on the third floor.

We have had the authorization of the Nuclear Safety Council since December of 2014 to work with the following isotopes:

<table>
<thead>
<tr>
<th>Isotopes</th>
<th>Maximum Activity (Mbq)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon (C-14)</td>
<td>370</td>
</tr>
<tr>
<td>Tritium (H-3)</td>
<td>370</td>
</tr>
<tr>
<td>Phosphorous (P-32)</td>
<td>370</td>
</tr>
<tr>
<td>Phosphorous (P-33)</td>
<td>370</td>
</tr>
<tr>
<td>Sulfur (S-35)</td>
<td>370</td>
</tr>
<tr>
<td>Chrome (Cr-51)</td>
<td>370</td>
</tr>
<tr>
<td>Iodine (I-125)</td>
<td>370</td>
</tr>
</tbody>
</table>

The Radiological Protection Service is responsible for this Unit and it supervises the operative procedures. It also checks that laboratories are free from contamination and takes charge of waste management and removal.

Equipment:
- Gamma Counters 3 units:  
  - Brand: Wizard  
  - Model: 2470-0100 Beta counter
- Beta Counter (1 unit)  
  - Brand: Tricard  
  - Model: 2810 TR
- Microbeta Counter (1 unit)  
  - Brand: Microbeta2  
  - Model: 2450-0020
- Harvester Cell
- A sample preparer  
  - Brand: Janus
- Two refrigerated ultracentrifuges with capacity for 200 samples.
- Three exclusive gas cabinets for working with radioactive isotopes, two of which are used with a lead guillotine and the third with a methacrylate guillotine.
- Two radiation detectors  
  - Brand: Lamse  
  - Model: RM 10013-RDM
8.1.3. Portfolio of Services

- Training in the handling of $\beta$ and $\gamma$ counters.
- Labeling of proteins with I-125.
- Identification of protein levels in serum, plasma using the RIA technique.
- ISH with P-33.
- Consultation regarding the different techniques that are employed in the laboratory.
- Optimization of protocols.

8.1.4. Highlights

In 2014, the Unit has been approved by the Nuclear Safety Council in order to begin with our activity. We have renovated the lab facility and we have also implemented the necessary equipment to perform different techniques. The staff has been trained to manage Beta and Microbeta Counters.

8.2. Animal Experimentation Unit

The animal experimentation unit at IMIBIC can be found within the Biomedical Research Central Support Unit and is connected to the Animal Experimentation Service for the University of Córdoba. The unit is intended to provide integral support to its users at an experimental and consultation level, with the objective of carrying out present and future research for the Institute and other associated organizations through the use of animal subjects, mainly rodents (mice and rats) and pigs.

8.2.1. Composition

The Unit is composed of two technicians:

- Anabel Pozo Salas
  sae@imibic.org
- Estefanía Escudero Jabonero
  estefania.escudero@imibic.org

8.2.2. Equipment and Facilities

IMIBIC’s animal experimentation service consists of:

- 7 rooms for housing rodents.
- 1 heating / metabolism room: This room has a respirometry team and two racks for metabolic cages.
- 5 multi-purpose rooms: These rooms have optogenetics and quantitative analysis equipment as well as a bodily composition MRI, among other equipment.
- Operating Room: Suitable for surgery in both rodents and larger animals, consisting of: 3 3D laparoscopy towers, 7 TV video monitors, 3 anesthesia machines for large animals, 6 surgery tables, 1 rodent anesthesia machine with 4 seats, 6 gas towers, 1 surgical microscope for large animals, 1 high-end ultrasound, 3 magnifiers, and 1 surgical arc.
- Quarantine Zone: 4 racks ventilated for rats / mice, 1 replacement cabinet and 1 triple gate SAS.

8.2.3. Highlights

In 2014, many different pieces of equipment were acquired, installed and put into use. Accordingly, the personnel have taken training courses with the aim of opening animal services. In addition, the multi-purpose rooms have been renovated in order to optimize these spaces.

8.3. Microscopy, Cytomics, and Scientific Imaging Unit

The Microscopy, Cytomics and Scientific Imaging Unit is one of the common scientific and technical support platforms used for IMIBIC’s research. This Unit is comprised of two technological areas: flow cytometry and advanced optical microscopy (confocal and fluorescence), both of which are considered to be of great importance in the field of biomedical research and health, and are powerful tools used in studies at the cellular, cellular subpopulation, and tissue levels. Its mission is to provide the research community with advanced equipment, and to provide the technical and scientific-methodological support necessary for the optimization of applications of these technologies so as to obtain high-quality results for the development of excellence in translational biomedical research. The Unit services both the research staff of the Institute and other entities of the Andalusian Public Health System, the University, IPOs, and private companies that request it.
8.3.1. Composition
The Unit is composed of a superior specialized technician
- Dr. Esther Peralbo Santaella PhD
  microscopia.citometria@imibic.org

8.3.2. Equipment and Facilities
- Area of Flow Cytometry
  - This area offers an advanced infrastructure aimed at flow cytometry for the quantification, phenotypical and functional analyses of cellular populations and cellular sorting.
  - The Unit offers the research personnel of IMIBIC the option to use flow cytometers under the “self-service” rule (i.e. without a technical operator present).
  ◊ Equipment
    - Flow cytometer LSR Fortessa SORP (Becton Dickinson)
    - Flow cytometer FACSCalibur (Becton Dickinson)
    - Flow cytometer Cytomics FC500 MCL (Beckman Coulter)
    - Cellular Sorter FACSaria III (Becton Dickinson)
- Area of advanced Optical Microscopy
  - The area of Advanced Optical Microscopy is an infrastructure designed for confocal fluorescent microscopy and the imaging associated with these techniques.
  - The Unit offers the research personnel of IMIBIC the option to use the microscopic equipment under the “self-service” rule (i.e. without a technical operator present).
  ◊ Equipment
    - Spectral LSM 710 confocal microscope (Carl Zeiss), with inverted stand and lighting for brightfield, DIC and epifluorescence.
    - LSM 5 Exciter confocal microscope (Carl Zeiss), with inverted stand and lighting for brightfield and epifluorescence.
    - Inverted fluorescence microscope (Nikon Eclipse Ti-S)
    - High Content Bioimager Pathway 855 (Becton Dickinson).

8.3.3. Portfolio of Services
- Education and training in the management of flow cytometers and microscopic equipment, as well as the corresponding result analysis programs.
- Purification and isolation of cell subpopulations via sorting.
- Provision of technical support for the analysis of samples in flow cytometers and confocal microscopy equipment.
- Advice regarding: preparation and marking of samples for flow cytometry, sorting or confocal microscopy, experimental design and interpretation of results.
- Provision of support for data analysis by means of cytometry analysis programs available in the Unit, as well as image analysis.
- Organization of training activities (seminars, courses, etc.) related to the fundamentals and the application of the areas of flow cytometry and advanced optical microscopy.

8.3.4. Highlights
In 2014, the Microscopy, Cytomics and Scientific Imaging Unit experienced remarkable growth with the acquisition and commissioning of three new pieces of equipment: the LSRFortessa flow cytometer, the FACSaria III cell separator and the spectral confocal microscope LSM 710. All three pieces were acquired with the aim of responding to the growing scientific, technological, and investigational needs of IMIBIC and providing a highly competitive service.
The Unit lent its services to 10 research groups consolidated by IMIBIC (New Therapies in Cancer, Nephrology, Nutrigenomics, Metabolism and Adipocyte differentiation, etc.) belonging to four of the five existing scientific programs within IMIBIC, as well as three external groups from three different institutions.
8.4. Biobank Unit

The Biobank Unit of Maimonides Institute for Biomedical Research of Cordoba (IMIBIC), is one of the research support platforms whose mission is to act as a liaison between doctors, researchers and patients who donate biological samples for the purpose of biomedical research to uphold the current legal constraints and appropriate ethical safeguards.

The IMIBIC Biobank is part of the Global Framework of Biobank of Andalusia Public Health System (SSPA) Initiative of the Department of Equality, Health and Social Policy. It is part of the Biobank Network Theme Hospital (National Biobank Network) Initiative Carlos III Health Institute (ISCIII), which is itself within the subprogram Thematic Networks for Cooperative Research in Health (RETICS).

8.4.1. Composition

• Head
  - Dr. Manuel Medina Pérez
  manuel.medina.sspa@juntadeandalucia.es
• Coordinator
  Carmen Pérez Calle
  carmen.perez.calle.exts@juntadeandalucia.es
• Technicians:
  - Eugenia Carrillo Gil
eugenia.carrillo@imibic.org
  - Javier Herruzo
  javier.herruzo@imibic.org
  - Desireé Gutiérrez Córdoba
desire.gutierrez@imibic.org

8.4.2. Equipment and Facilities

The Unit possesses its own laboratory resources for use of sample transformations (Safety booths, PCR Booths, Microtomes, Chryostate, Flotation Bath, Centrifuge, Histobath, Automatized Processor for Paraffin Inclusion, Paraffin Dispenser, etc.) as well as other machinery such as:

• Tissue Safe: fully automated preparation of tissue samples in a vacuum.
• Tissue Arrayer: assembles different tissue samples in a single multiple matrix for subsequent histological analysis.
• Quiacube: Automatic, compact system for analysis of DNA, RNA, plasmids and proteins from varying samples.

For sample storage, there are currently two freezers: one for temperatures of -20 degrees Celsius, seven for -80 degrees Celsius, as well as paraffin storage rooms for room temperature. During 2014, work was carried out on the second floor of the present Biobank Unit building to expand the living space preservation deep freeze and thereby accommodate 50 units of deep freeze equipment which shall be integrated into a future operation Unit.

8.4.3. Portfolio of Services

Our service portfolio is divided into four main sections:

1. Custody for storing samples at different temperatures.
2. Processes for transforming multiple types of biological samples in accordance with the procedures and technical criteria commonly used by researchers in their projects.
3. Provision of human samples and data on human health and disease research, selected according to clinical and diagnostic criteria specified by researchers.
4. Technical, scientific and ethical consulting regarding the collection, storage, and management of human samples in biomedical research.

8.4.4. Highlights

In 2014, the Biobank Unit experienced a notable increase in activity in comparison to previous years, having given essential support to 55 research projects. This activity generated a total of 75,000 samples/bioresources, of which around 10,000 were awarded to different researchers. The degree of satisfaction of these users has been assessed via surveys to be 7.5 points (out of a possible 10).

As a result of this activity, the list below shows the most relevant sample collections:
<table>
<thead>
<tr>
<th>Name</th>
<th>Type, Format and Conservation</th>
<th>Donors</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer: Oncover’s project</td>
<td>Plasma, urine, urine sediment, nails, hair, exhaled air, feces, paraffin-embedded tissue</td>
<td>1619</td>
<td>47586</td>
</tr>
<tr>
<td>Metabolic Diseases.</td>
<td>DNA, ARN, Plasma, urine, frozen tissue, peripheral blood, feces and serum</td>
<td>1206</td>
<td>5886</td>
</tr>
<tr>
<td>Metabolic syndrome</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td>Plasma, serum and peripheral blood</td>
<td>3276</td>
<td>5482</td>
</tr>
<tr>
<td>Digestive Diseases</td>
<td>Peripheral blood and paraffin-embedded tissue</td>
<td>1174</td>
<td>2348</td>
</tr>
</tbody>
</table>

### 8.5. Proteomics Unit

The Proteomics Unit is located within the IMIBIC research support platforms and provides researchers with state-of-the-art technologies in the field. Currently, the Proteomics Unit is a specialized platform in quantitative proteomics and MALDI Imaging (or Molecular Imaging).

The Proteomics Unit offers its analytical services for IMIBIC staff and University of Córdoba and to other universities, hospitals and private companies.

The Unit has two main components: (i) a high performance liquid chromatography-mass spectrometry platform that provides researchers with access to high-throughput proteomics analyses, ranging from protein identification and characterization to label-free quantitative proteomics; and (ii) a mass spectrometry-based molecular imaging platform (MALDI-Imaging) that provides spatial information of metabolites, lipids and proteins directly from tissues and biopsies.

As a service for research assistance, the Proteomics Unit provides individualized, fit-for-purpose support including project planning, sample preparation, mass spectrometry analysis and data analysis.

#### 8.5.1. Composition

The Unit is composed of two specialized technicians:

- Ignacio Ortea García, PhD
  ignacio.ortea@imibic.org

- Eduardo Chicano Gálvez, PhD
  eduardo.chicano@imibic.org

#### 8.5.2. Equipment and Facilities

- Q-TOF Mass spectrometer, Triple TOF 5600+ (Sciex).
- Triple quadrupole mass spectrometer, XevoTQS (Waters).
- MALDI-TOF/TOF Mass spectrometer, 5800 (Sciex).
- nanoHPLC: Eksigent LC400 (Sciex).
- nanoUPLC: nanoAcquity M-Class (Waters).
- Sprayer: Sunchrom Suncollect (Sunchrom, Friedrichdorf, Germany).
- Main programs used for data analysis: Protein Pilot, Comet and X!Tandem for protein identification, Peak View, Marker View and Skyline for protein quantification, Tissue View, MSiReader and Cardinal for Maldi Imaging MS.
- Basic laboratory equipment for sample preparation.

#### 8.5.3. Portfolio of Services

The Proteomics Unit offers the following services:

- Identification and characterization of proteins by MALDI-TOF/TOF.
- Identification and characterization of proteins by LC-MS/MS.
- Quantitative Proteomics:
  - SWATH.
  - SRM (Selected Reaction Monitoring)
  - pseudoSRM.
- MALDI Imaging mass spectrometry.
• Project supervision and collaboration.
• Training in software used for data analysis.

8.5.4. Highlights
In 2014, the Proteomics Unit moved into the new IMIBIC building (July/August 2014) and installed the sample preparation and mass spectrometry laboratories where it performs its activities. This Unit has also installed two new mass spectrometers, a Q-TOF and a MALDI TOF/TOF.

8.6. Bioinformatics Unit

IMIBIC’s Bioinformatics unit offers services on two levels:
- Direct analysis of relevant research projects and technical data needed for support
- Biocomputing tools to support groups conducting relevant research projects

Bioinformatics covers varying fields and diverse applications such as:
• Analysis of nucleic acids (DNA / RNA )
• Analysis of peptide sequences, structures, functions, metabolic pathways and interactions with genes
• Generation of knowledge relative to the study of new drugs
• Design and development of software
• Construction of databases for storing biological data
• Development of algorithms

8.6.1. Objectives of the Bioinformatics Unit
• The mission of the Unit is to attempt to satisfy the bioinformatic requirements that result from research projects.
• Clear and direct communication with the researchers facilitates this productive collaboration.
• Finally, the implementation of reporting guidelines pertinent to each particular case (MIAME, MIAPE, etc.) and the use of standardized formats (MAGE-ML, MAGE-TAB, mzML, mzIdentM, etc.) is a top priority with the aim of burnishing robust reporting and facilitating the publication of findings.

1. Composition
• David Ovelleiro Fraile
  bioinformatica@imibic.org

2. Equipment and Facilities
The Bioinformatics Unit of IMIBIC currently uses the following equipment:
- ACER Aspire M3985 Computere (i7 Processor, 16 Gb RAM)

8.7. Clinical Research Unit

IMIBIC Clinical Research Unit is located within the IMIBIC research support platforms. Its purpose is to promote clinical research as well as to establish collaborations with other research centers.

This unit focuses on the development of clinical trials including design, feasibility, regulatory affairs, launch, management, monitoring, pharmacovigilance, data management, statistics and delivery of clinical assistance. All operations are GCP compliant as required.

It consists of two dedicated clinical research facilities: one located at the Provincial Hospital and another by the General Hospital, which is currently under development and is expected to be completed in June 2015. Both facilities are adapted to perform phase I-IV clinical trials.

8.7.1. Composition

Head
• Dr. Jose López Miranda
  jlopezmir@uco.es

Clinical Pharmacologist
• María Esther Pacheco Rodríguez MD
  esther.pacheco@imibic.org
Project Managers/CRAs
- Isabel Bejerano Blázquez
  isabel.bejerano@imibic.org
- Blanca Quijano Ruiz
  blanca.quijano@imibic.org

Nurse Coordinator
- Inés Carmen Rodríguez García
  inesc.rodriguez.sspa@juntadeandalucia.es

Nurse Team
- Pilar Mesa Blanco
  pilar.mesa@imibic.org
- Manuel Rejano Castañeda
  manuel.rejano.sspa@juntadeandalucia.es

Nursing Assistants
Rubén Sánchez Nieves
Rafaela Vacas Bueno

8.7.2. Equipment and Facilities
- 10 doctor’s offices and storehouse
- 2 hospital wards each containing: crash trolley with semi-automatic defibrillator and emergency medication, intravenous fluids, an insulin pump, healing trolleys, oxygen outlets in all positions and audiovisual system.
- 14 armchairs and rooms with 3 single beds, all with ongoing monitoring.
- A pediatric area
- 12-lead ECGs
- Measuring boards and scales
- Blood pressure meter in each office
- 2 Living rooms for patients
- 2 Waiting rooms for patients and family
- 1 multi-purpose room
- 2 Laboratories for sample processing and centrifuges
- Freezers (-80°C and -20°C)
- High Definition Ultrasound Scanner
- 2 Study coordinators’ offices
- 2 CRAs’ offices
- 2 Archives

8.7.3. Portfolio of Services
- Methodological support
- Launch and Regulatory affairs
- Study development
- Close out
- Pharmacovigilance
- Delivery of clinical assistance

8.7.4. Highlights
During 2014, the Unit provided assistance and support in the start-up, coordination, data-management, and monitoring of 7 independent clinical trials across Internal Medicine, Pediatrics, General Surgery, Nephrology, and Rheumatology. Additionally, research activity has been increasing (to 81 patients) in the Provincial Hospital Clinical Research Unit. There are at present 13 clinical trials in progress. The main areas of activity are Oncology, Nephrology, Dermatology, Internal Medicine and Urology.
As a member of Spanish Clinical Research Network, the Unit has actively participated in 3 clinical trials interacting with different groups within Spain. The Unit also collaborates with several working groups within the network. To promote clinical research in the region, the Unit organizes meetings aimed at informing health professionals about different aspects of clinical research in the province of Córdoba. More than 45 meetings have already been organized.

### 8.8. Methodology and Biostatistics Unit

This Research Support Unit offers methodological consulting and statistical support for IMIBIC’s researchers (HURS-UCO) and for healthcare professionals in the Public System in the Province of Córdoba. The Unit’s main objectives are:

- Offering methodological consulting in the beginning or development of the different lines of research in the phases previous to the presentation of proposals/reports to the relevant financial entities and in general throughout the projects’ life cycles.
- Providing statistical support for the creation of databases and follow-up companies, use of statistical techniques and clinical-epidemiological research tools.
- Providing the highest quality possible in design, execution, interpretation and communication of results.

#### 8.8.1. Composition

Maricarmen Muñoz Villanueva, MD, PhD:
mc.munoz.exts@juntadeandalucia.es

#### 8.8.2. Equipment and Facilities

The main statistical programs used for data analysis are:

- PASW Statistics 18 (Copyright 2009 by SPSS Inc.)
- IBM SPSS 19 (Copyright 2010 by SPSS Inc.)
- Epidat 4.1 (Consejería de Sanidad, Xunta de Galicia, España; Organización Panamericana da saúde (OPS-OMS); Universidade CES, Colombia. Octube 2014).
- GranMo versión 7 (abril 2012)
- G-stat 2.0 (Copyright 2008 by GSK, SA.)
- Sinergy 3.0 (Copyright 2008 by GSK, SA.)

#### 8.8.3. Portfolio of Services

Through personalized consultations (be they in person, telematic or virtual) we cover the different moments of the research process. Specifically, the financial aid that we solicit deal with:

- Research design
- Data collection instruments
- Database organization
- Technical statistics options
- Data analysis
- Results interpretation
- Written report of results
- Attention to methodological demands of copy editors.

Specifically, the consulting at the methodological level can include:

- Review of the different sections of the scientific methodology proposed in the research protocol: presentation of hypotheses, formulation of objectives, choice of epidemiological design, operational definition of variables...
- Guidance for literature search techniques
- Advice on the presentation of results for scientific dissemination
- Validation of publication requirements depending on the type of study and quality criteria of scientific publications
- Analysis of the grounds for refusal: a review of articles and rejected projects

Consultation and execution of statistical analysis can include:

- Drafting of statistical analysis methodology or strategy.
- Sampling and sample size calculation.
8.8.4. Highlights
In 2014 there were more than 130 activities, most of them (about 60%) related to consulting and statistical executions for dissemination of research results (some publications and dissertations). 3 teaching activities worked together in this endeavor, two of which were organized locally by IMIBIC and another externally at the nationwide level (in the Master of Research Methodology of the Autonomous University of Barcelona). There were also two training activities for updating our own knowledge of office management and epidemiological developments.

- Design of research databases.
- Exploratory and descriptive analysis of the data.
- Inferential analysis (univariate and multivariate).
- Evaluation of diagnostic tests: sensitivity, specificity, predictive values and ratios of verosimilitude. ROC curves.
- Validation of statistical questionnaires and other measuring instruments.
- Other statistical techniques (Bayesian analysis, meta-analysis, etc.).
T and NK immunosenescence. Antiviral immune response

**Team Leader**

**Principal Investigator (PI)**
Rafael Solana Lara
rsolana@uco.es

*Red Española de Patología Infecciosa (REIPI)* (Collaborator)
*PAIDI CTS-208 Scientific Group (Collaborator)*

**PHD Researchers**
Rafael González Fernández

**Post-PhD Researcher**
Bárbara Martín Manzanares
Alejandra Pera Rojas

**Pre-PhD Researchers**
Fakhri Hassouneh
Nelson López Sejas
Juan Eduardo Molina Alcaide
Ana Mª Navas Romo

**Other members of the Group**
(Others Researchers, Nursing, Technical, and Administrative Staff)
Corona Alonso Diaz
Carmen Campos Fernández
Ma Luisa Valarde Martínez

**Impact Factor**
20,826

**Average Impact Factor**
4,165

**Publications**
5
**Scientific Activity**
The process of senescence of the immune system in different models: chronological aging, cancer, inflammatory diseases, viral infection and other situations of chronic activation of the immune system. In particular, we analyze the receptors involved in the regulation of cytotoxicity in T (CTL) and NK cells and their ligands in these models, and the role of CMV. We also analyze the immunopathogenesis of HIV infection and the impact that different therapeutic situations have on it as well as the innate immune response in HIV-1 + patients treated with “ex vivo” autologous dendritic cells as part of the protocol of developing a preventive vaccine.

**Keywords**
AIDS, HIV-1; HAART; preventive vaccine; Immunosenescence; aging; melanoma; NK cells; NKT cells; NK receptors; CMV; cytotoxic T lymphocytes (CTL).

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**Scientific Production**

**Publications**

**Original Papers**

Pera, Alejandra; Campos, Carmen; Corona, Alonso; Sanchez-Correa, Beatriz; Tarazona, Raquel; Larbi, Anis; Solana, Rafael. CMV Latent Infection Improves CD8$^+$ T Response to SEB Due to Expansion of Polyfunctional CD57$^+$ Cells in Young Individuals. Plos One. 2014. 9-2; e88538

IF: 3.534

Campos, Carmen; Pera, Alejandra; Sanchez-Correa, Beatriz; Alonso, Corona; Lopez-Fernandez, Isabel; Morgado, Sara; Tarazona, Raquel; Solana, Rafael. Effect of age and CMV on NK cell subpopulations. Experimental Gerontology. 54; 130-137

IF: 3.529

Campos, Carmen; Pera, Alejandra; Sanchez-Correa, Beatriz; Alonso, Corona; Lopez-Fernandez, Isabel; Morgado, Sara; Tarazona, Raquel; Solana, Rafael. Proinflammatory status influences NK cells sub sets in the elderly. Immunology Letters. 2014. 162-1 Pt B; 298-302

IF: 3.529

**Research Fundings**

**National**


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**In Collaborations**

**Papers**

Sansoni, Paolo; Vescovini, Rosanna; Fagnoni, Francesco F.; Akbar, Arne; Arens, Ramon; Chiu, Yen-Ling; Ocin-Sain, Luka; Dechanet-Merville, Julie; Derhovanessian, Evelyn; Ferrando-Martinez, Sara; Franceschi, Claudio; Frasca, Daniela; Fullep, Tamas; Furman, David; Gkrania-Klotsas, Effrossyni; Goodrum, Felicia; Grubeck-Loebenstein, Beatrix; Hurme, Mikko; Kern, Florian; Lilleri, Daniele; Lopez-Botet, Miguel; Maier, Andrea B; Marandu, Thomas; Marchant, Arnaud; Mathé, Catharina; Moss, Paul; Munlassell, Aura; Remmerswaal, Esther B. M.; Riddell, Natalie E; Rothe, Kathrin; Sauce, Delphine; Shin, Eui-Cheol; Simanek, Amanda M.; Smithey, Megan J; Soderberg-Naucler, Cecilia; Solana, Rafael; Thomas, Paul G; van Lier, Rene; Pawelec, Graham; Nikolich-Zugich, Janko. New advances in CMV and immunosenescence. Experimental Gerontology. 201455-54-62

IF: 3.529

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**Contrat with Companies**

Peña Martinez, J. Collaboration agreement with Oxoid. Influence of genotype combinations of nk receptors (KIR) and HLA molecules in the progression of HIV-1 infection in different clinical and therapeutic situations. Funding Agency: Roche Farma, S.A. Reference: CCB.0009

Peña Martinez, J. Agreement with Innogenetics Diagnostica Iberia SL. Funding Agency: Fjriobio Iberia S.L. Reference: CCBO0036

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**Review**

Solana, Rafael; Campos, Carmen; Pera, Alejandra; Tarazona, Raquel. Shaping of NK cell subsets by aging. Current Opinion in Immunology. 2014. 29-56-81

IF: 7.867

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**Keywords**

AIDS, HIV-1; HAART; preventive vaccine; Immunosenescence; aging; melanoma; NK cells; NKT cells; NK receptors; CMV; cytotoxic T lymphocytes (CTL).
Oxidative and nitrosative stress in acute and chronic liver disease

**Team Leader**
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PAIDI CTS-273 Scientific Group

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PAIDI BIO-216 Scientific Group

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Valle García Sanchez
Federico Gomez Camacho
Emilia Martinez Galisteo
Jose Luis Montero Alvarez
Alicia Padilla Peña
Jose Peinado Peinado
Antonio Poyato Gonzalez
Manuel Rodriguez Perálvarez

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**Pre-PhD Researchers**
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Clara Linares Luna

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Eva Maria Morcillo Ruiz
Rosario Medina Medina
Mª Luisa Garcia Garcia
Enrique Fragas Rivas
Luis Vida Perez

**Publications**
13

**Impact Factor**
39,897

**Average Impact Factor**
3,069
Scientific Activity
The members of the research team are divided into the BIO-216 and the CTS-273 scientific group –within the Andalusian Research Plan- and the CIBER for liver and digestive diseases (CIBERehd) in the context of a mixed group consisting of a healthcare team made up of hepatologists, surgeons and a biomedical research team of the HURS Research Unit and Department of Biochemistry and Molecular Biology of the UCO with associated teaching activity. Our biomedical research focuses on acute and chronic hepatocellular injury, hepatocarcinoma and liver transplants, with special emphasis on post-translational modifications of the proteome as a consequence of oxidative stress (reactive oxygen species, ROS) and nitrosative stress (reactive nitrogen species, RNS) in eukaryotic cells (hepatocytes and yeasts). The intracellular cytoprotection signal for molecules of various antioxidants (N-acetylcysteine, alpha-tocopherol) or cellular redox state regulators (redoxins) have been characterized in models of cellular injury. The mitochondrial dysfunction caused by redox imbalance is at the root of a large number of pathologies. The group of proteins from the family of cellular and mitochondrial redoxins plays a major part in antioxidant defence, the maintenance of thiol systems and the interaction between reduced glutathione, ROS and RNS. For this purpose, normal and chimeric mutants and recombinant proteins are produced using techniques of molecular biology and in vitro characterization; and (second generation) targeted proteomics are carried out using biochemical analysis techniques.

The group’s proven experience in the analysis of post-translational modifications is employed in the identification of biomarkers for hepatocellular carcinoma detection and diagnosis using proteomic analysis tools. In the area of liver transplants, we have identified the cytoprotection mechanisms mediated by cardioprophilin-I in the preservation injury in liver transplantation developed in experimental animals (rats and “mini-pigs”). In addition, the clinical group is involved in the development of a large number of phase II, III and IV clinical trials in the areas of viral hepatitis (boscaprevir), hepatocellular carcinoma (sorafenib), liver cirrhosis (satavaptan), acute liver failure (bioartificial liver, MARS) and liver transplantation (immunosuppression strategies).

Keywords
Reactive oxygen species; nitric oxide; antioxidants; redoxins; proteomics; apoptosis; necrosis; hepatocytes; yeast; mitochondri; liver cancer; biomarkers; liver transplantation; cirrhosis; viral hepatitis; acute and chronic liver failure.

Scientific Production
Publications
Original Papers
Ferrin, Gustavo; Rancial, Isidora; Llamazos, Camilo; Rodriguez-Peralvarez, Manuel L.; Romero-Ruiz, Antonio; Aguilar-Meleo, Patricia; Lopez-Ciller, Pedro; Briceno, Javier; Muntane, Jordi; Montero-Alvarez, Jose L. De la Mata, Manuel. Identification of candidate biomarkers for hepatocellular carcinoma in plasma of HCV-infected cirrhotic patients by 2-D DIGE. Liver International.2014.34-3;438-446 IF:4,412

In Collaborations
Papers


Canas-Ventura, A; Panes, J; Marin-Jimenez, I; Penalver, M; Gomollon, F; Galvet, X; Merino, O. Determination of thiopurine treatment. Journal Of Crohns & Colitis.2014.8-3;234-239 IF:3.662

Review

Letter
Vida Perez, Luis; Solis Garcia, Eduardo; Ruiz Morales, Rebeca; Zafra Jimenez, Carmen; Marquez Galan, Francisco; Robles Olid, Jose Antonio. Colonic stromal pseudolipomatosis in familial cases of IBD.Journal Of Crohns & Colitis.2014.8-3;234-239 IF:3.662

Rodriguez-Peralvarez, Manuel, Manousou, Penelope; Lerut, Jan, De la Mata, Manuel Burroughs, Andrew Kenneth. How much immunosuppression is needed after liver transplantation?Clinical Transplantation201428;16-7 IF:1.486

Calvet, Xavier; Panes, Julian; Alfaro, Noelia; Hinojosa, Joaquin; Sicilia, Beatriz; Gallego, Marta; Perez, Idelfonso; Lazaro y de Mercado, Pablo; Gomollon, Fernando; Aldegue, Xavier; Alos, Rafael; Andreu, Montserrat; Barreto, Manu; Bermejo; Fernando; Casis, Begoña; Domenech, Eugeni; Espin, Eloy; Esteve, Maria; Garcia-Sanchez, Valle; Lopez-Sanroman, Antonio; Martinez-Montiel, Pilar; Luis Mendoza, Juan; Gisbert, Javier P.; Vera, Manibel; Dosal, Angelina; Sanchez, Elena; Marin, Lucia; Sanroman, Luciano; Pinilla, Pilar; Murciano, Francisca; Torrejon, Antonio; Ramon Garcia, Jose; Ortega, Mayte; Roldan, Julio Consensus Grp. Delphi consensus statement: Quality indicators for Inflammatory Bowel Disease Comprehensive Care Units. Journal Of Crohns & Colitis.2014.8-3;234-239 IF:3.662

Andreu, M; Marquez, L; Domenech, E; Gisbert, J P; Garcia, V; Marin-Jimenez, I; Penalver, M; Gomollon, F; Galvet, X; Merino, O; Garcia-Planella, E; Vazquez-Romero, N; Esteve, M; Nos, P; Gutierrez, A; Vera, I; Gabriela, J L; Martin, M D; Canas-Ventura, A; Panes, J; Spanish GETECOLI Grp. Endemic Project. Disease severity in familial cases of IBD. Journal Of Crohns & Colitis.2014.8-3;234-239 IF:3.662

Canas-Ventura, A; Marquez, L; Ricart, E; Domenech, E; Gisbert, JP; Garcia, V; Marin-Jimenez, I; Rodriguez-Moranta, F; Gomollon, F; Galvet, X; Merino, O; Garcia-Planella, E; Vazquez-Romero, N; Esteve, M; Ibora, M; Gutierrez, A; Vera, M; Andreu, M. Risk of colonic tumours in patients with ulcerative colitis undergoing thiopurine treatment. Journal Of Crohns & Coli-


International

Rodríguez Perálvarez, ML. mTOR pathway inhibition in liver transplant patients with hepatocellular carcinoma and its impact on tumour recurrence. Funding Agency: European Association for the Study of the Liver. Reference: EASL-2014-002

Contract with Companies

De la Mata García, M. Collaboration agreement between Ciberehd and institution. Funding agency: Centro de Investigacion Biomédica en Red en el Área Temática de Enfermedades Hepáticas y Digestivas (CIBER liver and Digestive Diseases (CIBERehd)). Reference: MCI. CIBERED

García Sánchez, MV. Sample collection service for the Innpacto project. Funding agency: Fundación Instituto de Recerca Hospital Universitari Vall d’Hebron. Reference: PSS.0021

De La Mata García, M. Agreement for Omniprex (From research to clinical practice). Funding agency: Omniprex SL. Reference: PSS.0065

De La Mata García, M. Agreement with Omniprex SL. Reference: PSS.0061

De La Mata García, M. Agreement for collaborators at the Digestive Tract Unit. Funding agency: Merck Sharp & Dohme SA. Reference: C00037

García Sánchez, MV. Sponsored research agreement. Funding agency: Merck Sharp & Dohme SA. Reference: PSS.0063

García Sánchez, MV. Funding for collaborators at the Digestive Tract Unit. Funding agency: Merck Sharp & Dohme SA. Reference: C00058

De la Mata García, M. Support agreement for collaborators at the Digestive Tract Unit. Funding agency: Merck Sharp & Dohme SA. Reference: C00051

De la Mata García, M. Funding for collaborators at the Digestive Tract Unit. Funding agency: Merck Sharp & Dohme SA. Reference: C00072

Clinical Trials

0103/08: A randomized, double-blind, placebo-controlled phase III study of sorafenib as adjuvant treatment for liver cell carcinoma after surgical resection or local ablation. PI: Dr/a De La Mata García, Manuel

0009/10: Long-term follow-up of participants in a phase II or III SCG 503034 trial for the treatment of chronic hepatitis C. PI: Dr/a De La Mata García, Manuel

0120/10: A multicenter, randomized, placebo-controlled, double-blind phase III study to assess the efficacy and safety of everolimus (RAD001) in adult patients with advanced liver cell cancer after failure of treatment with sorafenib. PI: Dr/a Montero Alvarez, Jose Luis

0041/11: A multicenter, prospective, randomized, comparative trial to assess the effectiveness of two vaccines against the hepatitis B virus in patients with inflammatory bowel disease. PI: Dr/a Iglesias Flores, Eva

0066/11: Simplification trial with tenofovir in patients with chronic hepatitis B resistant to lamivudina and undetectable viral load in treatment with lamivudina in combination with adeovir dipivoxil (Teno simplex-B study). PI: Dr/a Fraga Rivas, Enrique

0068/11: Trial of tenoforin in the prophylaxis of hematomal anti-HBC positive and AgHBs-negative patients on treatment with rituximab PREBLIN study. PI: Dr/a Fraga Rivas, Enrique

0192/11: An Open-Label multicenter study to evaluate the impact of Adalimumab on quality of life, health care utilization and costs of ulcerative colitis subjects in the usual clinical practice setting. PI: Dr/a Iglesias Flores, Eva

0215/11: High-sensitivity calprotectin and C-reactive protein as markers of a new diagnostic-therapeutic strategy that evaluates muscosa activity to individualize treatments and improve the prognosis of patients with Crohn disease. PI: Dr/a García Sánchez, Valle

0232/11: A multicenter, randomized, double-blind parallel-group trial to assess the effectiveness of Adalimumab versus Azathioprine in the prevention of postsurgical recurrence of Crohn disease after 52 weeks. PI: Dr/a García Sánchez, Valle

0015/12: A multicenter, randomized, placebo-controlled, double-blind phase IV study to assess the efficacy and safety of sorafenib in patients with advanced liver cell cancer with radiological progression. PI: Dr/a Montero Alvarez, Jose Luis

0304/12: A phase 3, randomized, double-blind study of tivantinib (ARQ 197) in subjects with metastatic-high inoperable hepatocellular carcinoma (HCC) treated with one prior systemic therapy. PI: Dr/a Montero Alvarez, Jose Luis

0039/13: Randomized, double-blind, placebo-controlled, multicenter phase III study of sorafenib in patients with hepatocellular carcinoma (HCC) after surgery. PI: Dr/a Carrera Baena, Pilar

0113/13: Multicentric, randomized, open-label, controlled study, of 12 months of follow-up to...
assess the effect in renal function of an immunosuppressive treatment based on tacrolimus minimization in combination with everolimus in patients with novo liver transplantation.

0162/13: A randomized, open-label, multicenter, controlled study to assess safety and efficacy of elad in subjects with alcohol-induced liver decompensation (AILD).

0201/13: Albumin administration in the prevention of hepatorenal syndrome and death in patients with cirrhosis, bacterial infections other than spontaneous bacterial peritonitis and high risk of hospital mortality.

0329/13: A randomized, open-label, multicenter, controlled study to assess safety and efficacy of elad in subjects with acute alcoholic hepatitis (AAH) who have failed steroid therapy.

0249/14: An open, multicenter study to assess long-term effects of ABT-450/ritonavir/ABT-267 (ABT-450/r/ABT-267) and ABT-333 with or without ribavirin (RBV) in adults with chronic infection with genotype 1 (TOPAZ-I) of Hepatitis C virus (HCV).

0022/14: Rapidity of response to adalimumab in patients with luminal Crohn's disease. RAPIDA study


1875: Use of Everolimus in liver transplantation

2057: Cost, effectiveness, usefulness and efficacy of adalimumab in the management of Crohn's disease.

2058: Improving the safety of biologic-agent-based treatments in patients with inflammatory bowel disease through early detection of latent tuberculosis.

2061: Predicting short-term response to anti-TNF treatment in patients with Crohn's disease.

2072: Enterourinary fistulas in Crohn's disease: prevalence and clinical characteristics.

2171: Chronic-UC: Assessing the diagnostic capacity of Walmsley's questionnaire available on an online application (online completion by patients) versus the same questionnaire delivered by the physician to patients with ulcerative colitis.


2315: A long-term non-interventionist registration study to assess the safety and efficacy of HUMIRA (adalimumab) in patients with moderately active or very active ulcerative colitis (LEGACY).

2342: Registry of Telaprevir and Boceprevir in regular clinical practice.


2395: An observational study of the effect of minimizing immunosuppression in liver recipients.

2540: A retrospective, observational study to determine the usefulness of ART score for assessing retreatment with transarterial chemoembolization in patients with liver cell carcinoma. DALIA study.

2566: A cross-sectional study to describe the natural course of chronic pancreatitis and its evolution in non-followed up patients (PAN-OR-EVOL).

2567: Assessing adherence to triple therapy for Hepatitis C.

2572: Defining high risk variceal bleeding: a rational for the use of early tips in acute bleeding and preventing rebleeding.

2647: Prognosis of patients with ulcerative colitis in remission after discontinuation of thiopurine therapy.

0014/07/EPA1: Recurrence rates and predictive factors in the treatment of Hepatitis C in real clinical practice is Spanish hospitals (FAST-4 Study).

0020/08/EPA: Long-term non-interventionist registration to assess the safety and effectiveness of HUMIRA® (adalimumab) in patients with active mild to moderate Crohn disease (CD).

0026/10/EPA-SP: Validation of a treatment adherence questionnaire in patients with hepatitis B. HABIT study.
Infectious diseases

**PhD Researchers**
- Ángela Camacho Espejo
- Sara Cantisán Bohórquez
- Milagros García Lazaro
- Ana Gordon Bermúdez-Coronel
- Irene Gracia Ahufinger
- Rafael Jurado Jimenez
- Jose Mª Kindelan Jaquotot
- Clara Natera Kindelan
- Jose Rumbao Aguirre
- Elisa Vidal Verdu

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- Antonio Rivero Juarez
- Cristina Ogayar Luque

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- Isabel Machuca Sánchez
- Loreto Martínez-Dueñas Lopez-Marín
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**Spanish Network for Research in Infectious Pathology (REIPI)**
**PAIDI CTS-647 Scientific Group**

**Co-Principal Investigator (Co-PI)**
Antonio Rivero Roman

**AIDS Research Network (RIS) (Collaborator)**

**Publications**
31

**Impact Factor**
135,53

**Average Impact Factor**
4,371
Scientific Activity

Our group studies infectious diseases from two approaches:

- Clinical-epidemiological studies (which include clinical trials). In these studies, our objective is to differentiate risk factors, clinical features and efficacy/safety of new treatments, thus aiming to improve the prognosis of infectious diseases.
- Studies on pathogenesis from which specific clinical strategies are planned. The most relevant are our studies on immunopathology (in collaboration with the Immunology group) and mitochondrial toxicity (in collaboration with the Clinical Analysis Service).

All our studies start with the identification of a clinical problem that we try to solve using an experimental approach. Our aim is our scientific findings to have an impact on healthcare solutions and improve disease prognosis (translational research).

In particular, our lines of research are as follows:

- Immunopathology, pathogenesis and treatment of HIV infection.
- Pathogenesis and treatment of HIV / HCV co-infection.
- Clinical and epidemiological characterization of infection in transplant patients
- Immunopathology of cytomegalovirus infection.

Keywords

HIV, CMV, HCV, Immunopathology, Transplant, Antiretroviral therapy, Mitochondrial toxicity.

Scientific Production

Publications

Original

Papers


Rivero-Juarez, A. Lopez-Cortes, LF; Camacho, A. Torres-Cornejo, A. Gordon, A. Ruiz-Valderas, R. Torres-Osneros, J. Pineda, JA; Viciana, P. Rivero, A. HCV Viral Decline at Week 2 of Peg-IFN-R; Torre-Cisneros, J; Pineda, JA; Viciana, P; Rivero-Juarez, A; Torres-Cornejo, A; Gordon, A; Ruiz-Valderas, R.; Lopez-Cortes, LF; Camacho, J.; Iribarren, JA; Locutura, J; Lopez, JC. Antiviral therapy with pegylated interferon and ribavirin for patients with hepatitis C and HIV. Lancet Infectious Diseases. 2014; 14(1):13-14 IF:19.446

Gonzalez-Padilla, Marcelino; Jurado, Rafael; Rodriguez Martin, Ana Maria; Torre-Cisneros, Julian. Whirlpool folliculitis: 6 cases outbreak report. Medicina Clinica. 2014;4(142(2)):87-88 IF:12.525

In Collaborations

Papers


Berenguer, J. Polo, R. Lozano, F. Aldeguer, JL; Antela, A. Arbelas, JR; Asensi, V; Blanco, JR; Cloquet, B Domingo, P. Galindo, MJ; Gatell, JM; Gonzalez-Garcia, J; Iribarren, JA; Locutura, J; Lopez, JC; Mallolas, J; Martinez, E; Miralles, C; Miro, JM; Moreno, S; Palacios, R; Elias, MIP; Pineda, JA; Podzamczer, D; Portilla, J; Pulido, J; Ribera, E; Riera, M; Rubio, R; Santos, J; Sanz, J; Tuset, M; Vida, F. Rivero, A Expert Panel GESIDA Natl AIDS Plan. Executive summary of the GESIDA/National AIDS Plan consensus document on antiretroviral therapy in adults infected by the human immunodeficiency virus (updated January 2014). Enfermedades Infecciosas y Microbiologia Clinica. 2014; 32(7):447-456 IF:18.81

Pineda, Juan A. Cifuentes, Celia; Parra, Manuel.; Merchante, Nicolas; Perez-Navarro, Elisabet; Rivero-Juarez, Antonio; Monje, Patricia; Rivero, Antonio; Macias, Juan; Miguel Real, Luis. Incidence and natural history of hepatitis E virus coinfection among HIV-infected patients. AIDS. 2014; 28(3):1931-1937 IF:6.557

Podzamczer, D; Iruz, A; Perez, I; Viciana, P; Valencia, E; Curto, J; Martin, T; Castano, M Rojas, J; Espinoza, N; Moreno, V; Asensi, V Iribarren, JA; Cloet, B Force, L; Bachiller, P; Knobel, H; De Quiros; JOLB; Blanco, IT; Rozas, N; Vergas, J; Ocampo, A; Camacho, A; Flores, J; Gomez-Sirvent, J; Abacavir/Amiodarone plus darunavir/ritonavir in routine clinical practice: a multicentre experience in antiretroviral therapy-naive and -experienced patients. Journal of Antimicrobial Chemotherapy. 2014; 69;2536-2540 IF:5.439

Real, Luis M; Caruz, Antonio; Rivero-Juarez, Antonio; Soriano, Vicente; Neukam, Karin; Rivero, Antonio; Cifuentes, Celia; Mira, Jose A; Macias, Juan; Pineda, Juan A. A polymorphism linked to RRAS, SOAF1, IRF3 and BCL2L12 genes is associated with cirrhosis in hepatitis C virus carriers. Liver International. 2014; 34(4):558-566 IF:4.447

Espigado I, de la Cruz-Vicente F, Ben Marzouk-Hidalgo OJ; Gracia-Ahuinger I; Garcia-Lozano JR, Aguilar-Guisado M, Cisneros JM; Urbano-Ispizua A; Perez-Romerio P Timing of OMV-specific effector memory T cells predicts viral replication and survival after allogeneic hematopoietic stem cell transplantation.
Contract with Companies

De la Torre Cisneros, J. C. Contract for the provision of MSD monitoring. Funding agency: Merck Sharp & Dohme de España SA. Reference: PSS.0007

Rivero Román, A. PARTNER study of the HIV Copenhagen program. Funding agency: Copenhagen HIV Programme. Reference: PSS.0010

Rivero Román, A. Contract for web design. Funding agency: Janssen-Olig, S.A. Reference: PSS.0026

Rivero Román, A. Contract to manage BMS-FIBICO. Funding agency: Bristol-Myers Squibb International Corporation (BMSIIC). Reference: PSS.0039

Rivero Román, A. Agreement with Gilead Sciences. Funding agency: Gilead Sciences, S.L. Reference: PSS.0036

De la Torre Cisneros, J. C. Agreement with Brahms Iberia (Conference Infectious Pathology). Funding agency: Brahms Iberia, S.L. Reference: PSS.0045

De la Torre Cisneros, J. C. Agreement with Pfzter. Funding agency: Pfzter, S.L.U. Reference: PSS.0058

Rivero Román, A. Funding of activities of the staff of the Division of Infectious Diseases. Funding agency: Merck Sharp & Dohme de España SA Reference: CCB.0009

Rivero Román, A. Programme combined HIV/AIDS. Funding agency: Bristol-Myers Squibb, S.L.U. Reference: CCB.0049

Rivero Román, A. Agreement with Merck Sharp & Dohme. Funding agency: Merck Sharp & Dohme de España A Reference: CCB.0058

De la Torre Cisneros, J. C. Agreement with Roche Pharma (Publications). Funding agency: Roche Pharma, S.A. Reference: CCB.0076

Rivero Román, A. Agreement with Merck Sharp & Dohme. Funding agency: Merck Sharp & Dohme de España A Reference: CCB.0073

Rivero Román, A. Agreement with Roche Pharma. Funding agency: Roche Pharma, S.A. Reference: CCB.0075

Clinical Trials

0045/09: Effectiveness of high doses of pegylated interferon-alpha-2a and ribavirin in the treatment of HIV co-infected patients with C virus-induced cirrhosis (genotypes 1 ‘0’ 4) not responding to previous therapy with standard pegylated interferon and ribavirin doses. PI: Dr/a Rivero Román, Antonio

0019/10: A comparative clinical trial of two therapeutic decision-making strategies in the study of tuberculosis contacts: standard strategy based on the tuberculosis sensitivity test (PT) versus PT in combination with Quan-IFERON – TB Gold In Tube. PI: Dr/a Kindelín Jaquedot, Jose Mª

0199/10: A randomized, double-blind, phase III study to assess the safety and effectiveness of GS03/05750 mg once a day versus Raltegravir 400 mg twice a day both administered as a double combination at a fixed dose of nucleoside-analog reverse-transcriptase inhibitors for a 96-week period in adult patients with HIV co-infected patients who have not received previous antiretroviral treatment. PI: Dr/a Rivero Román, Antonio

0273/10: A prospective, randomized, comparative trial to assess the effectiveness and safety of Levofloxacin versus Isoniazid in the treatment of latent tuberculosis infection of liver transplant. PI: Dr/a De La Torre Cisneros, Julian Carlos

0334/10: A pilot, phase III clinical trial to assess antiviral activity of pegylated interferon + ribavirin + ritonavir in chronic patients with genotype-4 HCV and HIV. PI: Dr/a Rivero Román, Antonio

0044/11: A multicenter, randomized, blinded, placebo-controlled study to assess the safety of Maraviroc in combination with other antiretrovirals in subjects infected with HIV-1 and hepatitis C and/or B. PI: Dr/a Rivero Román, Antonio

0097/11: A randomized, open, controlled, 48-week clinical trial to assess the activity and tolerability of a combination therapy of lopinavir/ritonavir and 3TC replacing a triple therapy of lopinavir/ritonavir and 3TC or FTC in patients with HIV and viral suppression. PI: Dr/a Rivero Román, Antonio

0088/11: An open, randomized, noninferiority trial and 96 week follow-up study to assess the effectiveness of azatavir/ritonavir + lamivudine as maintenance treatment in patients with viral load suppression. PI: Dr/a Rivero Román, Antonio

0177/11: A randomized, prospective, comparative trial assessing the effectiveness and safety of a seasonal vaccine dose versus two doses for the prevention of influenza in solid organ recipients. PI: Dr/a De La Torre Cisneros, Julian Carlos

0197/11: Protease (DRV/RTV) inhibitor in mono-therapy or triple therapy in patients with HIV-1 suppression. PI: Dr/a Rivero Román, Antonio

0201/11: A multicenter, randomized, double-blind, placebo-controlled study of maraviroc + darunavir/ritonavir versus emtricitabin/tenofovir + darunavir/ritonavir for the treatment of patients with HIV-1 CCR5 tropism not previously treated with antiretrovirals. PI: Dr/a Rivero Román, Antonio

0246/11: An open study of retreatment with pegylated interferon-alpha2a ribavirin and simeprevir and/or sofosbuvir and/or boceprevir in patients with genotype 1 chronic hepatitis C. PI: Dr/a Rivero Román, Antonio

0265/11: A randomized, double-blind, placebo-controlled, phase III study of the effective- ness, safety and tolerability of a single infusion of MK 3415 (human monoclonal antibody versus Clostridium difficile toxin A) and MK 3415A (human monoclonal antibody versus Clostridium difficile toxin A and B) in patients undergoing antibiotic treatment for Clostridi- um difficile infection. (MODIFY I). PI: Dr/a De La Torre Cisneros, Julian Carlos

0283/11: A multicenter, randomized, blinded, parallel-group, non-inferiority comparative trial of

Regional

Rivero Román, A. Predictive value of immediate VHC viral kinetics on the sustained viral response in patients co-infected with the VHC. Funding agency: Progress and Health Foundation. Reference: PI-0157-2011

Cantásin Bohórquez, S.A. translational study to assess the clinical usefulness of determining the IFN ready secreted by specific T CDR8+ CMV cells to guide the prevention of CMV infection in low-risk solid organ-transplanted patients. Funding agency: Regional Ministry of Equality, Health and Social Policies (CISPS). Reference: PI-0004-2012


International


the effectiveness and safety of an immunotherapy versus a viremia-guided approach in the analysis of Abbott direct-acting antivirals infection in seropositive renal recipients.

PI: Dr/a De La Torre Cisneros, Julian Carlos

0016/12: An open, phase IIb study to assess the effectiveness and safety of Telaprevir, Pegylated interferon-alpha-2a and ribavirin in chronic genotype 1 hepatitis C and HIV-1 co-infected patients with or without previous treatment for hepatitis C.

PI: Dr/a Rivero Román, Antonio

0072/12: An open study to assess the safety, antiviral activity and pharmacokinetics of direct-acting antivirals (DAAs) in combination with peginterferon alpha-2a and ribavirin (pegIFN/RBV) in chronic HCV patients presenting virological failure in a previous study of Abbvie or Abbott in combination with DAAs.

PI: Dr/a Rivero Román, Antonio

0308/12: A randomized, double-blind, placebo-controlled study to assess the efficacy and safety of ABT450/ritonavir/ABT-267 (ABT-450/rit/ABT-267) and ABT-333 administered in combination with ribavirin (RBV) in previously treated chronic HCV-1 adult patients (SAPPHIRE-III).

PI: Dr/a Rivero Román, Antonio


PI: Dr/a Natera Kindelan, Clara

28/13: A randomized, open, controlled, single-pattern, phase III study with active product of bi 207127 in combination with lopinavir and ribavirin versus telaprevir in combination with pegylated alpha interferon plus ribavirin for the treatment of chronic genotype-1b HCV infection in naive patients.

PI: Dr/a Natera Kindelan, Clara

0152/13: Follow-up study to assess the resistance and durability of response to treatment in phase II/III studies for the treatment of chronic HCV infection.

PI: Dr/a Rivero Román, Antonio

0039/14: A randomized, multicenter, open-label, controlled, phase III trial to assess the efficacy of fosfomycin vs meropenem in targeted therapies for bacteremic urinary tract infections with extended-spectrum beta-lactamase (ESBL).

PI: Dr/a Natera Kindelan, Clara

0062/14: Optimal duration of the antimicrobial treatment for bloodstream infections produced by Enterobacteriaceae. Clinical trial SHORTEN.

PI: Dr/a Natera Kindelan, Clara

0081/14: A randomized, open-label study to assess the efficacy of darunavir/ritonavir plus lamivudine once a day vs continuing treatment with darunavir/ritonavir once a day plus tenofovir/emtricitabine or abacavir/lamivudine in HIV patients with suppressed viremia.

PI: Dr/a Rivero Román, Antonio

0009/10/2: Long-term follow-up of participants in a phase II or III SCH 508034 trial for the treatment of chronic Hepatitis C.

PI: Dr/a Rivero Román, Antonio

0032/08/EPA: An international, multicenter, open-label, prospective study on the safety of Maraviroc in combination with an optimized background therapy in previously treated HIV-1 patients.

PI: Dr/a Rivero Román, Antonio

1431: A multicenter, retrospective study to identify the incidence of severe hepatotoxicity in patients co-infected with hepatitis B or C and HIV-1 who previously received treatment with Maraviroc (LIVERMAC study).

PI: Dr/a Rivero Román, Antonio

1716: An observational study to determine the clinical management of in-hospital patients with community acquired pneumonia or complex skin and soft tissue infections. REACH Study.

PI: Dr/a Gracia Ahufinger, Irene

1764: Bacterial infection with Staphylococcus aureus: impact of an intervention program on the improvement of the clinical management and study of its clinical and molecular epidemiology.

PI: Dr/a Natera Kindelan, Clara

1893A: A study of risk factors of nosocomial pneumonia due to infection with methicillin-resistant staphylococcus aureus. A case and control study.

PI: Dr/a Natera Kindelan, Clara

2302: Impact of genetic variations of TLR2, 4 and 9 on the risk of cytomegalovirus infection after transplantation and its usefulness in prevention.

PI: Dr/a Cantisán Bohorquez, Sara

2542: Changes in the lipid profile of HIV patients shifting to a simplified antiretroviral therapy with a single tablet of tenofovir/emtricitabine and rilpivirine (Evipela). Efficacy and safety of the treatment. LIRA study.

PI: Dr/a Rivero Román, Antonio

2548: Hepatic safety of Evipela in HIV/hepatitis C (HCV)-coinfected patients without HCV treatment in the The HEPAVIR HEPATIC SAFE-TY Cohort hEPAtic study.

PI: Dr/a Rivero Román, Antonio

0152/13: Follow-up study to assess the resistance and durability of response to treatment in phase II/III studies for the treatment of chronic HCV infection.

PI: Dr/a Rivero Román, Antonio

1714: Influence of nevirapin on hepatitis C viral load levels in patients co-infected with VH/HVC HELICON study.

PI: Dr/a Rivero Román, Antonio
Inflammation and cancer

Team Leaders

**Principal Investigator (PI)**
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Post-PhD Researchers
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Víctor García González
Carla Jiménez Jiménez
Mª Isabel Lara Chico
Carmen del Río Mercado
Belén Palomares Cañero
Estrella Milán Ortega
Rafael Soler Torronteras
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Other members of the Group (Nursing, Technical, and Administrative Staff)
Juan Antonio Collado Rojas
Rosario Molina Moran
Scientific Activity

The group “Inflammation and Cancer” is a consolidated group (GC-04) of the IMIBIC and participates in the research program Chronic Inflammatory Diseases that is described in the Institute strategic plan. Overall the research undertaken by the group is very collaborative with other national and international research groups and with SMEs. The main research lines are:

1. Study of the mechanism of action of cannabinoids (endocannabinoids, phytocannabinoids and synthetic cannabinoids) (IP. Eduardo Muñoz). In this line of research we are very focused on studying the mechanism of action of some phytocannabinoids and endocannabinoids in order to explore its therapeutic potential in inflammatory and neurogenerative diseases. On the one hand we are identifying the hoxymimetic mechanism of action of endocannabinoids type N-acyl dopamines and exploring pharmacological strategies to increase the levels of these endocannabinoids in the CNS. Also we are investigating the pharmacological potential of new semi-synthetic compounds derived from phytocannabinoids Cannabidiol and Cannabigerol by studying novel mechanisms of actions and its efficacy in different in vivo models of neuroinflammation and fibrosis.

2. Molecular identification of signaling pathways that regulate certain processes involved in inflammation and cancer (IP. Marco A. Calzado). This line is aimed to identify the role of the ubiquitin ligase SIAH2 in response to hypoxia and other endogenous mediators. One of the main objectives is to identify new molecular targets for the development of novel potential therapies. Moreover, we are studying the metabolomic profile in human lung cancer and in murine models of prostate cancer. In this research line we also have a particular interest in the study of new chemical entities able to inhibit molecular targets of pharmacological interest in cancer.

Keywords

Inflammation; cancer; tissue regeneration; cannabinoids; SIAH2; pharmacology and Nutraceuticals.

Scientific Production

Publications

Original Papers


Carrillo-Salinas, Francisco J; Navarrete, Carmen; Metcha, Miriam Feliu; Ana; Collado, Juan A; Cantarero, Irene; Bellido, Maria L; Munoz, Eduardo; Guaza, Carmen. A Cannabigerol Derivative Suppresses Immune Responses and Protects Mice from Experimental Autoimmune Encephalomyelitis. Plos One. 2014;9(4):e94733


Koebelte, Andreas; Munoz, Eduardo; Appendino, Giovanni B; Minassi, Alberto; Pace, Simon; Rossi, Antonietta; Weiengel, Christina; Barz, Dagmar; Sauterin, Lidia; Caproglio, Diego; Collado, Juan A; Wenz, Oliver. SAR Studies on Curcumin’s Pro-inflammatory Targets: Discovery of Prenylated Pyrazolocurcuminoids as Potent and Selective Novel Inhibitors of S-Lipoxynegenase. Journal of Medicinal Chemistry. 2014; 57(13):5638-5648. IF: 5.48

In Collaborations


DuDognon, Benoit; Romero-Santacreu, Loria; Gómez-Sebastian, Silvia; Hidalgo, Ana B; Lopez-Vidal, Javier; Bellido, Maria L; Munoz, Eduardo; Escibano, Jose M. Production of functional active human growth factors in insects used as living biofactories. Journal of Biotechnology. 2014; 184:229-239. IF:2.884


Research Fundings

National


To begin in 2015


Prorogued to 2014


Prorogued to 2014


To Begin in 2015

Regional


Prorogued to 2014


Contract with Companies

Muñoz Blanco, E. Biological activity of natural biomedical products. Funding agency: Beros Consulting S.L. Reference: CCB.UCO.0040

Muñoz Blanco, E. Project for the production and research on hemp and derivatives. Funding agency: Phytoplant Research S.L. Reference: CCB.UCO.0057

Muñoz Blanco, E. Isolation, purification and characterization of the biological activity of active plant ingredients. Funding agency: Phytoplant Research S.L. Reference: CCB.UCO.0060

Muñoz Blanco, E. Outsourcing within the INTERCONECTA project: ATENA-“Olive oil and other healthy fats. Technological applications for the transformation of olive oil fats into high value added products. Funding agency: Phytoplant Research S.L. Reference CCB.UCO.0062

Muñoz Blanco, E. Outsourcing within the INTERCONECTA project SNC-INTEGRA. “Integration of technological platforms for the development of drugs for the treatment of central neural system diseases”. Funding agency: Vivacell Biotechnology Spain S.L. Reference: CCB.UCO.12012115
Systemic and chronic inflammatory autoimmune diseases of the locomotor system and connective tissue

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**Co-Principal Investigator (Co-PI)**
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- Yolanda Jiménez Gómez

### Pre-PhD Researchers
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- Rafaela Ortega Castro
- Maria Del Carmen Castro Villegas
- Jerusalem Calvo Gutierrez

### Other members of the Group
(Others Researchers, Nursing, Technical, and Administrative Staff)
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- Desiree Ruiz Vilchez
- Inmaculada Gomez Gracia
- Rosario Mª Carretero Prieto
- Carmen Lopez Montilla
- Mª Carmen Abalos Aguiler
Scientific Activity
Our research team works in two main investigation areas, which involve systemic autoimmune diseases (mainly Systemic Lupus Erythematosus, Primary Antiphospholipid Syndrome and Rheumatoid Arthritis) and chronic arthropathies (with special emphasis on Spondyloarthritis including Psoriatic Arthritis). We use synergistically clinical-therapeutic, molecular and cellular approaches.

1.- Research Area: Systemic autoimmune diseases


Description: Our team studies the cellular and molecular mechanisms of atherothrombosis development in three systemic autoimmune diseases: Systemic Lupus Erythematosus (SLE), Antiphospholipid syndrome (APS) and Rheumatoid Arthritis (RA). We further analyze the regulatory mechanisms promoted by new therapeutic approaches such as Statins, biological therapies (i.e. anti-TNF, anti-IL6, anti-Blyss), biosimilars, and new drugs with antioxidant and anti-inflammatory effects (i.e. Coenzyme Q10).

Main Objectives.
1. Study of cellular and molecular mechanisms of atherothrombosis in Systemic Autoimmune Diseases (EAS): Implementation of genomic, epigenetic and proteomics approaches to identify new biomarkers to delineate unique pathogenic mechanisms in each autoimmune condition.
2. Analysis of the mitochondrial dysfunction and oxidative stress in EAS as key mechanisms in the evolution of cardiovascular disease and in the response to new therapeutic approaches.
3. Study of the cellular and molecular mechanisms that regulate the effects of statins, CoQ10 and other biologic therapies in the prevention of atherothrombosis in EAS.


- Description and objectives: Our research group also investigates new molecular biomarkers involved in the development of systemic autoimmune diseases. Specifically, the group conducts various research projects among which we can detach the so-called PRECISESADS (Molecular Reclassification to Find clinically Useful Biomarkers for Systemic Autoimmune Diseases), an European project funded by the ‘Innovative Medicines Initiative (IMI)”.

- he aim of PRECISESADS is the use of -omics and bioinformatics tools for the reclassification of EAS that share common pathophysiological mechanisms. The project aims to push for personalized medicine based on clinical and molecular profiles of the individual by promoting a substantial improvement in the processes of prediction, diagnosis, and clinical developments as well as in monitoring therapeutic response.

2.- Research Area: Inflammation and Chronic Arthropathies. IR: Eduardo Collantes Estévez

- Description: Our group has 3 lines of research in this field:
- Clinical and epidemiological aspects of ankylosing spondylitis (AS) (activity and disease severity) at local, national (Spanish Registry EA: REGISPONSER) and international levels (European and Latin American Registry of EA (E: RESPONDIA). In the two former we are coordinators.
- Development of a new system for evaluating the mobility of patients with AS (as an expression of structural damage and disease severity) by informatics technologies developed by our group (UCOTRACK. computerized motion capture using artificial vision; patented).
- Study of the cellular and molecular mechanisms of the inflammatory and osteoproliferative pathways, in order to find new therapeutic targets.

- Main Objectives.
1. To describe and analyze the clinical, epidemiological, demographic, genetic, radiographic, of therapeutic and pathophysiological response of patients with AS in Spain and compare that data with the ones obtained in Latin American patients. The most interesting point will be to known if the differences in the clinical manifestations are due to the genetic load that derive from the same genotype (in relation to HLA-B27) and its relationship to the interaction with the environment.
2. To apply the new patented system (UCOTRACK) to evaluate the mobility of patients with AS.
3. To assess the relevance of the overall oxidative status, mitochondrial dysfunction and endoplasmic reticulum stress as agents involved in the development of inflammation and / or structural damage present in this disease.

Keywords
Systemic autoimmune diseases (Primary Antiphospholipid Syndrome, Systemic Lupus Erythematosus, Rheumatoid Arthritis); oxidative stress; microRNAs; proteomics; inflammation; cardiovascular disease; new therapies; spondyloarthropathies; epidemiology; diagnostic criteria, structural damage.
Scientific Production
Publications

Original
Papers
Barbarroja Nuria; Perez-Sanchez Carlos; Ruiz-Limon Patricia; Castro-Villegas Carmen; Aguirre, Maria Angeles; Carretero, Rosario; Segui, Pedro; Jimenez-Gomez Yolanda; San- na, Manuela; Rodriguez-Ariz, Antonio, Collantes-Esteve, Eduardo; Escudero, Alejandro; Anticyclic citrullinated protein antibodies are implicated in the development of cardiovascular disease in rheumatoid arthritis. Antero- spondylitis. Rheumatology International. 2014.34(4):706-16 IF:5,533


Garrido-Castro, Juan L; Escudero, Alejandro; Medina-Carnicer, Rafael. Galisteo, Alfonso M; Gonzalez-Navas, Cristina; Carmona, Loreto; Collantes-Esteve, Eduardo. Validation of a new objective index to measure spinal mobility: the University of Cordoba Ankylosing Spondylitis Metrology Index (UCOASMI). Rheumatology International. 2014.34-3:400-406 IF:1,627


In Collaborations
Papers
Smolen, Josef S; Braun, Juergen; Dougados, Marie; Emery, Paul; FritzGerald, Oliver; Hell- well, Philip; Kavanaugh, Arthur; Kvien, Tore K; Landewe, Robert; Luger, Thomas; Mease, Philip; Olivieri, Ignazio; Reville, John; Ritchlin, Christopher; Rudwaleit, Martin; Schoels, Mon- ika; Sjoer, Jacob; Gonzalez de Wit; Martinus; Baralai- kas, Xenofon; Betteridge, Neil; Burgos-Vargas, Ruben; Collantes-Esteve, Eduardo; Deodhar, Atul; Elewaut, Dirk; Gossec, Laure; Jongkees, Merryn; Maccarone, Mare; Redlich, Kurt, van den Bosch, Filip; Wei, James Cheng-Chung; Winthrop, Kevin; van der Heijde, Desree. Treating spondyloarthritis, including ankylosing spondylitis and psoriatic arthritis, to target recommendations of an international task force. Annals of The Rheumatic Diseases. 2014.73:16-16 IF:9,27 Erkan D, Willis R, Murthy VL, Basra G, Vega J, Ruiz-Limón P, Carrera AL, Papalardo E, Martínez-Martínez LA, González EB, Pierangeli SS. A prospective open-label pilot study of flu- vastatin on proinflammatory and prothromb- biomarkers in antithromboprolipid antibody positive patients. Arthritis of The Rheumatic Diseases. 2014.73(6):1176-80. IF:9,27

Fernandez-Espartero, C. de Miguel, E; Loza, E; Tomero, E; Gobbo, M; Descalzo, M; A Collan- tesi-Esteve, E; Mulero, J; Munoz-Fernandez; S; Zarco, P; Collantes-Esteve, Eduardo; Zarco, Pedro; Munoz-Fernandez, Santia- go; Carmona, Loreto. ESPERANZA Study Grp. Validity of the Ankylosing Spondylitis Disease Activity Score (ASDAS) in patients with early spondylarthritis from the Esperanza pro- gramme. Annals of The Rheumatic Diseases. 2014.73:1350-1355 IF:9,27

Tomero, Eva; Mulero, Juan; de Miguel, Eugen- io; Fernandez-Espartero, Cruz; Gobbo, Milena; Descalzo, Miguel A; Collantes-Esteve, Eduar- do; Zarco, Pedro; Munoz-Fernandez, Santia- go; Carmona, Loreto. ESPERANZA Study Grp. Performance of the Assessment of Spon- dyloarthritis International Society criteria for the classification of spondylarthritis in early spondylarthritis clinics participating in the ESPERANZA programme. Rheumatolo- gy.2014.53-2:353-360 IF:4,435

Lopez-Sanchez, Laura M; Jimenez-Gomez Y; Valverde, Araceli; Hernandez, Vanessa; Pe- nerante, E; Mulero, J; Munoz-Fernandez; Lopez-Pe- dreira, Charyl; Munoz-Castaneda, Juan R; De- la Haba-Rodriguez, Juan R; Aranda, Enrique; Rodriguez-Aniza, Antonio. CoCl2, a Mimic of Hypoxia. Induces Formation of Polyplod Giant. Cells with Stem Characteristics in Colon Cancer. Plos One. 2014. 16;9(6):e99143. IF:3,534


Montilla, D; Diaz-Alvarez, A; Calero-Paniagua, I; Collantes-Esteve, E; Font, P; Almodovar R; Zarco, P; Queiro-Silva, R; Januola, X; Mulero, J; de Miguel, E; Gratacos, J REGISPON- SER Study Grp. Ankylosing Spondylitis with- out Axial Progression: Analysis of Associated Factors. Journal of Rheumatology. 2014.41- 12:2409-2421 IF:3,173

Angel Abad, Miguel, Ariza Ariza, Rafael; Jose Añor, Juan; Batlle, Enrique; Beltran, Emma; de Dios Cagete, Juan; de Miguel, Eugenio; Escu- dero, Alejandro; Fernandez-Garbailado, Cristi- na; Gratacos, Jordi; Loza, Espinosa, Francisco; Linares, Luis; Montilla, Carlos; Moreno Ramos, Manuel; Mulero, Juan; Queiro, Ruben; Raya, Enrique; Rodriguez Lozano, Carlos; Rodrigues Moreno, Jesus; Sanz, Jesus; Silva-Fernandez, Lucia; Torre Alonso, Juan Carlos; Zarco, Pedro; Luis Fernandez-Suero, Jose; Juanola, Xavier 2e Study Grp.Standards of care for patients with spondyloarthritis. Rheumatology Internati- onal.2014.34(12):165-170 IF:1,627

Ortiz-Sanjuan, Francisco; Blanco, Ricardo; Cal- vo-Rio, Vanesa; Narvaez, Javier; Rubio Romero, Esteban; Olive, Alejandro; Casañeda, Santos; Gallego Flores, Adela; Victoria Hernandez, M; Mata, Cristina; Ros Vilamajo, Inmaculada; Si- fuentes Giraldo, Walter Alberto; Caracuel, Mi- guel A; Freire, Mercedes; Gomez Arango, Cala- lina; Ubiel, Jose; Manrique Aria, Sara; Marrias, Carlos; Molts-Tuduri, Concepcion; Plasencia-Ro- driguez, Charnada; Rosello, Rosa; Urruticoe- chea, Ana; Velasco-Feijoo, Maria L; del Blanco, Jordi; Carmen Gonzalez-Vela, M; Rueda-Gotor, Javier; Pina; Trinilario, Loniceria, Javier; Gonza- lez-Gay, Miguel A. Efficacy of Tocilizumab in Conventional Treatment-Refractory Adult-On- set Still's Disease. Arthritis & Rheumatology. 66-6:1659-1665 IF:0,9

Review

Research Fundings
National

To begin in 2015

Regional


Font Ugalde, P. Clinical applicability of a stan- dardized dose-reduction protocol in patients in persistent clinical remission diagnosed with rheumatoid arthritis and treated with TNF- antagonists.Funding agency: Regional


**International**

Coletantes Estevez, E. PRECISESADS: Molecular reclassification to find clinically useful biomarker for systemic autoimmune diseases. Funding agency: European Commission Reference: IM/0002

**Contract with Companies**


Coletantes Estevez, E. Service provided by Dr. Coletantes Programa Esperanza. Funding agency: Fundación Española de Reumatología (Spanish Rheumatology Foundation). Reference: PSS.0005


Coletantes Estevez, E. Movement as a support tool for clinical decision in rheumatology patients. Funding agency: MT Global (Specials Events). Reference: PSS.0023

Coletantes Estevez, E. Asas Comospa. Funding agency: Asociación de Recherche Clinique en Rheumatologie. Reference: PSS.0024

Coletantes Estevez, E. Agreement Rheumatoid arthritis. Funding agency: Fundacion Española de Reumatología (Spanish Rheumatology Foundation). Reference: CCB.0015

Pérez Sanchez, C. Agreement between the Clinical Management Unit of Reumatology and UCB Pharma. Funding agency: UCB Pharma. S.A. Reference: CCB.0033

Coletantes Estevez, E. A study of new molecular targets involved in the inflammation and apoptosis of fibrous and bone tissue in ankylosing spondylitis. Funding agency: ROCHE Farma. S.A. Reference: CCB.0035

Escudero Contreras, A. A study of the development and control mechanisms of atherothrombosis in systemic autoimmune diseases. New therapeutic approaches. Funding agency: Fundacion Española de Reumatología (Spanish Rheumatology Foundation). Reference: CCB.0045

Coletantes Estevez, E. Agreement between MSD and the UGC of Reumatology. Funding agency: Merck Sharp & Dohme de España S.A. Reference: CCB.0042


**Clinical Trials**

O201/08: A randomized, placebo-controlled, phase III trial to assess the effectiveness and safety of odanacatib (MK-0822) to reduce fracture risk in postmenopausal women with osteoporosis treated with Vitamin D and calcium.

PI: Dr. Escudero Contreras, Alejandro

O196/09: A multicenter, randomized, double-blind, parallel-group study to assess the safety, disease remission and prevention of articular structural damage in patients with early, moderate to severe rheumatoid arthritis on tocilizumab monotherapy.

PI: Dr. Escudero Contreras, Alejandro

O284/09: Assessing response to etoricoxib in patients with ankylosing spondylitis and inadequate response to 2 AINES.

PI: Dr. Collantes Estevez, Eduardo

O101/11: A multicenter, double-blind, randomized trial to assess the safety and effectiveness of tocilizumab (TCZ) plus methotrexate (MTX) versus changing to TCZ (placebo-controlled) in patients with active rheumatoid arthritis showing inadequate response to previous treatment with MTX and having attained a low activity of the disease (DAS 28 (EULAR) ≥ 3.2) with TCZ in combination with MTX.

PI: Dr. Escudero Contreras, Alejandro

O220/11: A multicenter, randomized, placebo-controlled, double-blind phase III study to assess the safety, disease remission and prevention of articular structural damage in patients with early, moderate to severe rheumatoid arthritis and inadequate response to methotrexate.

PI: Dr. Collantes Estevez, Eduardo


PI: Dr. Collantes Estevez, Eduardo


PI: Dr. Collantes Estevez, Eduardo

O291/12: A randomized, double-blind, placebo-controlled study to assess the safety, tolerability, pharmacokinetics, pharmacodynamics and clinical effectiveness of multiple subcutaneous doses of BI655064 in healthy subjects and patients with rheumatoid arthritis showing not satisfactory response to a previous treatment with methotrexate.

PI: Dr. Escudero Contreras, Alejandro

O320/12: A randomized, double-blind, placebo-controlled, 52-week duration study to assess adverse events of special interest in adults with systemic antibody positive lupus erythematosus receiving belimumab.

PI: Dr. Aguirre Zamorano, Mª Angeles

O015/13: A randomized, placebo-controlled study of sarilumab and methotrexate vs etanercept in combination with MTX in patients with rheumatoid arthritis showing inadequate response after four months of treatment with adalimumab and MTX.

PI: Dr. Collantes Estevez, Eduardo

O303/13: A randomized, double-blind, multicenter, placebo-controlled, 24-week duration study to assess the long-term efficacy and safety of etozukirumab (LY2439821) in patients with active psoriatic arthritis that have not received disease-modifying anti-rheumatic drugs.

PI: Dr. López Montilla, Mª Dolores


PI: Dr. Collantes Estevez, Eduardo

O105/13: A multicenter, randomized, double-blind, placebo-controlled, phase II, dose-finding study to assess the efficacy and safety of continuous treatment with adalimumab vs. discontinuation of treatment with adalimumab as maintenance therapy in patients with axial spondyloarthritis.

PI: Dr. Escudero Contreras, Alejandro

O116/13: A multicenter, randomized, double-blind study to compare the effectiveness and safety of continuous treatment with adalimumab vs. discontinuation of treatment with adalimumab as maintenance therapy in patients with rheumatoid arthritis.

PI: Dr. Collantes Estevez, Eduardo

O139/13: A phase IIb study to assess the efficacy, safety and tolerability of subcutaneous etanercept in combination with methotrexate (MTX) and other non-biological DMARDs in patients with rheumatoid arthritis.

PI: Dr. Collantes Estevez, Eduardo

O208/13: Estudio multicéntrico, abierto, de seguimiento a largo plazo de la seguridad y eficacia del tratamiento con GLPG0634 en pacientes con artritis reumatoide activa de moderada a grave.

PI: Dr. Escudero Contreras, Alejandro

O248/13: A multicenter, randomized, double-blind, placebo-controlled phase III study to demonstrate the efficacy of Secukinumab after 16 weeks of treatment and assess its long-term safety, tolerability and efficacy in a period of three years in patients with active ankylosing spondylitis.

PI: Dr. Collantes Estevez, Eduardo


PI: Dr. López Montilla, Mª Dolores

O054/14: A non-controlled study to assess the effectiveness of tocilizumab in patients with moderate or severe rheumatoid arthritis who are candidate for monotherapy with a biological agent.

PI: Dr. Escudero Contreras, Alejandro
0000/10: A multicenter study of the effectiveness and safety of the human monoclonal anti-TNF Adalimumab in patients with peripheral spondylitis.
Pl: Dr/a Collantes Estevez, Eduardo

1644: Clinical value of the ASDAS index in Spanish patients with ankylosing spondylitis. AXIS study.
Pl: Dr/a Collantes Estevez, Eduardo

1729: A national, multicenter, observational, retrospective follow-up study of the patients who took part in the loadet trial ‘loadet study’.
Pl: Dr/a Collantes Estevez, Eduardo

Pl: Dr/a Collantes Estevez, Eduardo

1794: National Lupus Register of the Spanish Society of Reumatology.
Pl: Dr/a Aguirre Zamorano, Ma Ángeles

1811: SCORE: Follow-up and control in reumatology-nursing.
Pl: Dr/a Collantes Estevez, Eduardo

1815: Prevalence of axial and peripheral spondyloarthritis in first-degree relatives in patients with ankylosing spondylitis.
Pl: Dr/a Collantes Estevez, Eduardo

2031: Immunogenicity in anti-TNF therapies in patients with rheumatic diseases.
Pl: Dr/a Castro Villegas, Mª Carmen

2035: Pain assessment in Reumatology.
Pl: Dr/a Collantes Estevez, Eduardo

2139: A cross-over, observational study of the functional limitation and limitations of work and daily activities in patients with systemic sclerosis with or without digital ulcers.
Pl: Dr/a Escudero Contreras, Alejandro

2148: Rheumatologists and patients preferences regarding the biological agents used to treat rheumatic diseases in Spain.
Pl: Dr/a Collantes Estevez, Eduardo

2219: Beneficial effects of coenzyme Q10 treatment on the mitochondrial dysfunction and oxidative stress associated to atherothrombosis development in antiphospholipid syndrome patients.
Pl: Dr/a López Pedrera, Rosario

2273: Spanish registry of patients with axial ankylosing spondylitis treated with anti-TNF.
Pl: Dr/a Collantes Estevez, Eduardo

2276: A retrospective study of patients with rheumatic diseases initiating treatment with biological therapies (SE-BIO Study).
Pl: Dr/a Castro Villegas, Mª Carmen

2457: Multi-Country Registry of clinical characteristics, including radiographic progression, and burden of disease over 5 years in real-life setting) PROOF.
Pl: Dr/a Collantes Estevez, Eduardo

Pl: Dr/a Escudero Contreras, Alejandro

2611: GEMA 2 project. Evaluation and management.
Pl: Dr/a Escudero Contreras, Alejandro

2637: Assessing and certifying healthcare quality in the clinical management of rheumatoid arthritis according to the Tream to Target (T2T) strategy.
Pl: Dr/a Escudero Contreras, Alejandro
New therapies in cancer

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Emerging Researcher (ER)
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PAIDI CTS-234 Scientific Group (collaborator)

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Carlos Villar Pastor
Ruth Zarate Romero
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Maria Jose Méndez Vidal
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Nuria Galera Carrillo
Jon Peñarando Saez

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Mª Angela Díaz Diaz
Vanesa Hernández Nieto
Isabel Jaraba Mezquida
Jacinta Marin Serrano
Maria Jose Marin Serrano
Mª Eugenia Carrillo Gil
Amalia Leña Barranco
Rosario Miranda Garcia
Maria Lopez Garcia
Inmaculada Diéguez Cantueso
Inmaculada Ruiz Cáceres
Sonia Rodriguez De Julian

Publications
11
Impact Factor
38,236
Average Impact Factor
3,476
Scientific Activity
Our research group conducts its scientific activities in several areas of both clinical and experimental research. The first area is related to the identification of clinical or molecular factors useful in predicting clinical evolution, response or toxicity in cancer treatment.

In this area we have published clinical evolutionary models for predicting colon and breast cancer; in addition, we have conducted studies on polymorphisms such as UGT1A1, GSTT1 and CYP2D6, and neoplasms in relation to both their toxicity and response. We participate very actively in the development of new therapeutic strategies using drugs aimed at specific targets. To achieve this, we are currently carrying out research studies to develop response markers to this type of (mostly anti-angiogenic) therapies. The development of these markers will optimize the use of new therapies in cancer patients. Another research area looks into the role of nitrosative stress and the regulation of nitrosothiol homeostasis in different experimental models and diseases. Our research is aimed at exploring pathogenic mechanisms and identifying new therapeutic options and targets. Using the latest proteomic approaches to identify posttranslational nitrosative modifications, notably the S-nitrosylation of proteins, we analyse the importance of maintaining the homeostasis of nitrosothiols and the formation of S-nitrosoproteins. Our research has focused so far on different models of hepatocellular injury. However, given the importance of inflammation and nitric oxide production in cancer, we are also conducting studies in experimental models of colon and breast cancer and in clinical samples of patients with this type of neoplasm undergoing different antitumoural treatments.

Keywords
Colon Cancer; Breast Cancer; Polymorphisms; Gene Expression; Pharmacogenomics; Predictive Models; Angiogenesis; Angiotensins; anti Her-2 therapies; anti-EGFR Therapy; Clinical Trial; Nitric Oxide; Nitrosative Stress; S-nitrosylation; Proteomics; Genomics.

Scientific Production
Publications
Original
Papers

Losa, F.; Barrios, P.; Salazar, R.; Torres-Melero, J.; Benavides, M.; Massu, T.; Ramos, I.; Aranda, E. Cytoreductive surgery and intraperitoneal chemotherapy for treatment of peritoneal carcinomatosis from colorectal origin. Clinical & Translational Oncology.2014. 16-10;921-926 IF: 4.817


Review
Leon, Luis; Garcia-Figueroa, Roberto; Suarez, Cristina; Arjonilla, Antonia; Puente, Javier; Vargas, Blanco; Mendez-Vidal, Maria Jose; Sebastian, J.; Carmen. Recommendations for the clinical and radiological evaluation of response to treatment in metastatic renal cell cancer. Targeted Oncology.2014. 9-19-24 IF:3.458

Garcia del Muro, Xavier; Gallardo, Enrique; Garcia Carbonera, Iciar; Lainez, Nuria; Jose Mendez, Maria; Maroto, Pablo; Ochoa de Olza, Maria; Puente, Javier; Reines Gaspar, Rubio Jose; Santander, Carmen; Suarez, Cristina; Vazquez Estevez, Sergio; Castellano, Daniel. Recommendations from the Spanish Oncology Genitourinary Group for the treatment of patients with renal cell carcinoma. Cancer Chemotherapy and Pharmacology.2014.73-6;1109-1107 IF:2.571

Research Fundings
National

De la Habla Rodriguez, J R. Analysis of polymorphisms related to hypertension as a predictor of Cancer.2014. 110-5;1139-1147 IF: 4.817

In Collaborations
Papers
Barbarroja, Nuria; Perez-Sanchez, Carlos; Ruiz-Limón, Patricia; Castro-Villegas, Carmen; Aguirre, Maria Angeles; Carretero, Rosario; Segui, Pedro; Jimenez-Gomez, Yolanda; Sanchez-Hernandez, A; Naranjo, M; Maroto, P; Perez-Valderrama, B; Luque, R; Mendez-Vidal, MJ. Expert Opinion on Drug Safety. Cabazitaxel for metastatic castration-resistant prostate cancer: safety data from the Spanish expanded access program. Expert Opin on Drug Saf. 2014 Sep;13(9):1165-1173 IF:2.735


Alba, E.; Albanel, J; de la Haba, J; Barnadas, A; Galvo, L.; Sanchez-Rovira, P; Ramos, M; Roto, F.; Burgues, O; Carrasco, E; Caballero, R; Porras, I; Tiba, A; Carera, M G; Lluch, A. Trastuzumab o lapatinib with standard chemotherapy for HER2-positive breast cancer: results from the GEICAM/2006-14 trial. British Journal of Cancer.2014. 110-5;1139-1147 IF: 4.817
of response to antiangiogenic treatment in cancer. Funding agency: Instituto Carlos III Health (ISICIII). Reference: PI13/00553

Rodríguez Anza, A. Role of nitric oxide and nitrosothiols homeostasis in the generation and maintenance of tumor stem cells: new approaches to colon and breast cancer. Funding agency: Instituto Carlos III Health (ISICIII). Reference: PI13/00561

Clinical Trials

0276/03: A multicenter, phase III trial to compare 6 cycles of FAC (fluorouracil, doxorubicin and cyclophosphamide) and 4 cycles of FAC followed by 8 weekly doses of taxol in a sequential regimen as adjuvant therapy in patients who underwent surgery for breast cancer without axillary involvement. PI: Dr/a Aranda Aguilar, Enrique

0012/04: A multicenter, randomized, phase III comparative study of epirubicin. PI: Dr/a Aranda Aguilar, Enrique

0215/04: An open, multicenter, randomized trial to assess the effectiveness of zoledronic acid in preventing bone loss associated with cancer treatment in postmenopausal women with R+ breast cancer. PI: Dr/a Aranda Aguilar, Enrique

0198/05: An open, multicenter, randomized phase IV/III study to assess the effectiveness of maintenance treatment with capecitabine (X) after standard adjuvant chemotherapy in patients with operable breast cancer who have hormone-receptor and HER2 negative tumor. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0254/06: A phase III trial to assess ovarian function suppression and Exemestane as adjuvant treatment for premenopausal women with endocrine-sensitive breast cancer -Tamoxifen versus ovarian function suppression + Exemestane. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0090/07: An open, multicenter, randomized phase IV/III study to assess the effectiveness of letrozole alone in postmenopausal women with locally recurrent or metastatic breast cancer with induction of hormone therapy as first-line treatment. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0106/07: A randomized study of adjuvant chemotherapy individualized according to BRCA1/ARMM levels in patients with non-small cell lung cancer. PI: Dr/a Barneto Aranda, Isidoro

0148/07: A multicenter, randomized study to assess the effectiveness and safety of bevacizumab in combination with letrozole alone in postmenopausal women with locally recurrent or metastatic breast cancer with indication of hormone therapy as first-line treatment. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0165/07: An open, multicenter, randomized, parallel-group, phase III trial to compare the effectiveness and tolerability of administering Fulvestrant (Faslodex®) for three years in combination with Anastrozol (ARIMDEX®) for five years versus Anastrozol for five years as adjuvant hormone therapy in postmenopausal women with early hormone-receptor positive breast cancer. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0019/07: A multicenter, international, randomized phase II study of trastuzumab and docetaxel versus trastuzumab, docetaxel and pertuzumab versus trastuzumab and pertuzumab in patients with locally advanced inflammatory or early breast cancer. PI: Dr/a Aranda Aguilar, Enrique

0002/08: A randomized, phase II study of continuous treatment vs. standard treatment with capecitabine in patients with metastatic breast cancer. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0133/08: A multicenter, randomized, phase II study of treatment with epirubicin and cyclophosphamide followed by treatment with docetaxel and trastuzumab versus epirubicin and cyclophosphamide followed by docetaxel and lapatinib in women with resectable primary or locally-advanced HER2-positive breast cancer. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0144/08: A randomized, phase II clinical study of radiotherapy, hormone therapy and chemotherapy with docetaxel versus radiotherapy and hormone therapy in patients with high-risk localized prostate cancer (Stage III and IV). PI: Dr/a Aranda Aguilar, Enrique

0253/08: An open, multicenter, randomized, exploratory study to assess the effectiveness and safety of trastuzumab in combination with FOLFOX 4 chemotherapy or panitumumab with FOLFIRI chemotherapy in subjects with colorectal cancer with non-mutated KR. PI: Dr/a Aranda Aguilar, Enrique

0265/08: Topotecan plus carboplatin vs standard treatment (pazopanib plus carboplatin or gemcitabine + carboplatin) in the treatment of patients with recurrent platinum-sensitive peritoneal carcinoma, fallopian tube carcinoma or epithelial ovarian carcinoma. PI: Dr/a Rubio Pérez, María Jesús

0046/09: An open, multicenter, phase II study to assess the safety and effectiveness of paclitaxel plus carboplatin in patients with metastatic colorectal cancer with non-mutated KRAS refractory to irinotecan-based chemotherapy. PI: Dr/a Aranda Aguilar, Enrique

0048/09: A randomized phase II study of cabitinib+Bevacizumab+external radiotherapy versus Capecitinib+external radiotherapy as preoperative treatment in patients with resectable locally advanced rectal cancer. PI: Dr/a Aranda Aguilar, Enrique

0076/09: A randomized, double-blind, multicenter, phase II study to assess the efficacy of AZD2281 in the treatment of patients with platinum-sensitive serous ovarian cancer after treatment with two or more platinum regimens. PI: Dr/a Rubio Pérez, María Jesús

0131/09: Selective treatment in colorectal cancer: selection of capecitabine + 5-fluorouracil based on TS-3 UTR and ERCC1-118 polymorphisms for combination with oxaliplatin or irinotecan as chemotherapy in combination with first-line bevacizumab in advanced colon cancer. PI: Dr/a Aranda Aguilar, Enrique
0139/09: A multicenter, open, randomized, two-arm, phase III study of bevacizumab plus chemotherapy vs chemotherapy alone for the treatment of patients with platinum-resistant primary peritoneal carcinoma, fallopian tube carcinoma or epithelial ovarian carcinoma. PI: Dr/a Rubio Pérez, María Jesús

0181/09: A randomized, double-blind, placebo-controlled trial with neratinib (HK1-272) after adenocarcinoma in women with initial stage breast cancer with exposure/amplification of HER-2/neu. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0226/09: A multicenter, multinational, randomized, phase II study to assess pertuzumab in combination with trastuzumab administered concomitantly or sequentially to a regular anthracycline-based chemotherapy or contumantly to a non-anthracycline chemotherapy as neoadjuvant treatment in patients with breast cancer. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0250/09A phase II study of panitumumab as a first-line single agent in fragile elderly patients with advanced colorectal cancer with non-mutated kras. PI: Dr/a Aranda Aguilar, Enrique

0260/09: A multicenter, randomized, double-blind, placebo-controlled phase III study of everolimus daily administered in combination with trastuzumab and vinorelbine in women previously treated with metastatic or locally advanced breast cancer with HER2/neu over-expression. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0002/10: A phase II study of capcitabina-trastuzumab (xelox-trastuzumab) as perioperative treatment in patients with unresectable gastric gastroesophageal junction adenocarcinoma. PI: Dr/a Aranda Aguilar, Enrique

0103/10: A multicenter, randomized, phase II, pilot study to assess the safety and efficacy of a treatment with mFOLFOX-6 plus cetuximab versus an initial treatment with mFOLFOX-6plus cetuximab in patients with metastatic colorectal cancer and KRAS tumors. PI: Dr/a Aranda Aguilar, Enrique

0082/10: An open, randomized, phase II study to assess the effectiveness and safety of paclitaxel administered weekly as a single agent and two different administration regimes of SAR240550 (GSI-201), a PARP-1 inhibitor, in combination with paclitaxel administered weekly as neoadjuvant therapy in patients with stage II-IIIA triple-negative breast cancer. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0194/10: A multicenter, randomized, placebo-controlled, double-blinded phase III study to assess the efficacy and safety of pazopanib as adjuvant treatment in patients with localized or locally advanced kidney cell carcinoma after nephrectomy. PI: Dr/a Rubio Pérez, María Jesús

0215/10: A randomized, double-blind, phase III trial of paclitaxel administered weekly plus MA2386 or placebo in women with recurrent partially platinum-sensitive or platinum-resistant peritoneal carcinoma, fallopian tube carcinoma or epithelial ovarian carcinoma. PI: Dr/a Rubio Pérez, María Jesús

0231/11: An open, multicenter, randomized, parallel-group phase II clinical study to assess the effectiveness and safety of pertuzumab administered in combination with trastuzumab and an aromatase inhibitor for first-line treatment. PI: Dr/a De la Haba Rodríguez, Juan Rafael

0240/10: An open, multicenter, phase II study of ET080 alone or in combination with Everolimus in patients with nonresectable or metastatic renal cell cancer after a targeted anti-VEGF therapy. PI: Dr/a Méndez Vidal, Maria Jose

0265/11: A randomized phase II trial to assess the efficacy and safety of an individualized neoadjuvant chemotherapy scheme based on the level of brca1 for primary her-2 negative breast cancer (BERNAQ). PI: Dr/a De la Haba Rodríguez, Juan Rafael

0071/12: A randomized, open, phase II study of MM-101 controlled with paclitaxel plus paclitaxel alone in patients with platinum resistant or refractory ovarian cancer. PI: Dr/a Rubio Pérez, María Jesús

0072/12: A randomized, phase II clinical trial to explore the impact of BRAF and PI3K state on the effectiveness of FOLFIRI + Bevacizumab or Cetuximab as first-line treatment of patients with metastatic colorectal cancer with native KRAS and less than three circulating tumor cells. PI: Dr/a Aranda Aguilar, Enrique

0073/12: A randomized, phase III clinical trial to assess the effectiveness of FOLFIRI + bevacizumab versus FOLFIRI + bevacizumab after progression for at least a previous chemotherapy treatment. PI: Dr/a Barneto Aranda, Isidoro

0077/12: A randomized, phase III clinical trial to assess the effectiveness of FOLFIRI + bevacizumab versus FOLFIRI + bevacizumab after progression for at least a previous chemotherapy treatment. PI: Dr/a Barrena Aranda, Isidoro

0078/12: A phase IIb study of regorafenib in patients with metastatic colorectal cancer with progression to conventional treatments. PI: Dr/a Aranda Aguilar, Enrique
0081/12: Un estudio abierto, multicéntrico, único brazo, con salida y seguimiento, con el objetivo de evaluar la eficacia y seguridad del TKI-228 como segundo línea de tratamiento en pacientes con HER2-positivo y enfermedad metastásica con mutación de driver de EGF.

PI: Dr/a Barneto Aranda, Isidoro

0086/12: LUX-Brast 3. Un estudio de fase II de afatinib alone o en combinación con vinorelbina versus el tratamiento de referencia. Investigación de la eficacia y seguridad de vinorelbina en combinación con afatinib.

PI: Dr/a Méndez Vidal, María José

0091/12: Un estudio abierto, multicéntrico, único brazo, con salida y seguimiento, con el objetivo de evaluar la eficacia y seguridad del TKI-228 como segundo línea de tratamiento en pacientes con HER2-positivo y enfermedad metastásica con mutación de driver de EGF.

PI: Dr/a Barneto Aranda, Isidoro

0095/12: Un estudio de fase II de afatinib alone o en combinación con vinorelbina versus el tratamiento de referencia. Investigación de la eficacia y seguridad de vinorelbina en combinación con afatinib.

PI: Dr/a Méndez Vidal, María José
97/13: Estudio de fase 3, aleatorizado y doble ciego para comparar Vinflafolda (EC 145) y doxorubicina liposómica pegilada (DLP/Doxir-/Caelyx®) en combinación frente a DLP en pacientes con cáncer de ovario resistente al platino.  
PI: Dr/a Rubio Pérez, María Jesús

0026/14: Estudio de fase II abierto, aleatorizado, de tres grupos, de diclóbrido de radio-223 de 50kBq/kg en comparación con 80 kBq/kg y 50 kBq/kg en un programa de dosis ampliada en pacientes con cáncer de próstata resistente a la castración con metastasis ossea.  
PI: Dr/a Méndez Vidal, María Jose

0036/14: A PHASE II randomizado, doble-blind study of neoaduvant letrozole plus GDC-0032 versus letrozole plus placebo in postmenopausal women with ER positive/her2-negative, early stage breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

0050/14: An open-label, phase II trial of Ortoprilen (TAK-700) for metastatic or advanced non-rectable granulosa cell ovarian tumors. GreKe study II.  
PI: Dr/a Rubio Pérez, María Jesús

0052/14: A multicenter, randomized, open, controlled, phase III study to assess the efficacy and safety of olaparib alone vs. chemotherapy of choice in patients with metastatic breast cancer with mutations.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

0059/14: A phase III study to assess the efficacy of palbociclib (PD-0332991), a cyclin-depended kinase 4/6 inhibitor in patients with primary HR positive breast cancer and normal HER2 at high risk of relapse following chemotherapy.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

0065/14: A phase II study of Regorafenib alone in patients with metastatic colorectal cancer with mutations in RAS or BRAF previously treated with FOFOXIRI PLUS bevacizumab.  
PI: Dr/a Aranda Aguilar, Enrique

0105/14A: multinational, multicenter, phase II study to assess the efficacy of pertuzumab plus trastuzumab and neoadjuvant chemotherapy based on anthracyclines in patients with locally advanced, inflammatory or early positive her2 breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

0107/14: A multicenter, randomized, double-blind phase II study to assess the efficacy and safety of RO5520985 plus FOLFOX vs. bevacizumab plus FOFOX in patients with naive metastatic colorectal cancer.  
PI: Dr/a Aranda Aguilar, Enrique

0124/14: A multicenter, randomized, placebo-controlled, parallel-group phase III study to assess the efficacy and safety of olaparib as neoadjuvant treatment in patients with high-risk HER2 negative breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

PI: Dr/a Aranda Aguilar, Enrique

0177/14: A multicenter, open-label, single-arm, extension study in patients with solid tumors receiving treatment with bevacizumab in any of the studies sponsored by F. Hoffmann-La Roche and/or Genentech.  
PI: Dr/a Rubio Pérez, María Jesús

0191/14: A randomized, open-label, phase III study to assess the effectiveness of denosumab in standard first-line chemotheraphy for advanced small cell lung cancer.  
PI: Dr/a Aranda Aranda, Isidoro

1134: Lifestyle and breast cancer risk in Spain.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

1175: A retrospective study of cases of patients with renal cell carcinoma or mantle cell lymphoma treated with Temsirolimus.  
PI: Dr/a Méndez Vidal, María José

1176: A prospective, observational study to determine circulating endothelial cell levels in patients with advanced clear-cell renal-cell carcinoma without radiological progression after three months of first-line treatment according to regular clinical practice.  
PI: Dr/a Méndez Vidal, María José

PI: Dr/a Méndez Vidal, María José

1389: A post-authorisation, observational study to assess the tolerability of Rafitrexed and the profile of patients treated with Rafi- trexed alone or in combination with oxaliplatin (TOMOX) to treat advanced colorectal cancer following regular clinical practice.  
PI: Dr/a Gómez España, María Auxiliadora

1388: A combined analysis of the genome wide association study and the microarray study (miarm) for the identification of predictors of effectiveness of therapy with beva- cicumab inpatients with metastatic breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

2030: Assessing rapid in situ mRNA (RISH™) hybridization as atltechnique for detecting HER2 overexpression in breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

2059: A study to assess arterial hypertension as a predictor of effectiveness of bevacizumab (BV) associated with chemotherapy in metastatic colorectal cancer and metastatic breast cancer.  
PI: Dr/a Aranda Aguilar, Enrique

2081: Analysing the epidemiological characteristics of patients with metastatic renal cancer with long progression-free survival after receiving treatment with sunitinib.  
PI: Dr/a Méndez Vidal, María José

2140: An observational, prospective study to assess the impact of determining the intrinsic subtypes of breast cancer with PAM50 using machinelearning technology to use adjuvant chemotheraphy in patients with hormone-recep- tor positive, node-negative breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

2107: A retrospective study of the manage- ment of patients with metastatic colorectal cancer resistant to first-line oxalaplatin-based therapy.  
PI: Dr/a Aranda Aguilar, Enrique

2172: An observational, retrospective, multi- center study to assess the clinical benefit of lapatinib in combination with trastuzumab in patients with HER2-positive metastatic breast cancer previously treated with trastuzumab and/or lapatinib in Spain.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

2177: A retrospective, observational study to describe the management of patients with advanced or metastatic non-small cell lung cancer with EGFR mutations in Spain.  
PI: Dr/a Aranda Aranda, Isidoro

2178: A post-authorisation, observational, prospective study to assess progression patterns of advanced EGFR-positive non-small cell lung cancer treated with erlotinib.  
PI: Dr/a Aranda Aranda, Isidoro

PI: Dr/a Méndez Vidal, María José

2235: An observational, prospective study to identify the management of patients with castration-resistant metastatic prostate cancer on second-line treatment after docetaxel in regular clinical practice.  
PI: Dr/a Méndez Vidal, María José

2348: Register of rare sarcomas: A tool to assess the number of cases registered for each subtype and the therapeutique approach used by the Grupo Español de Investigacion en Sar- comas (GEIS).  
PI: Dr/a Aranda Aranda, Isidoro

2456: An epidemiologic study of the natural course and management of locally advanced or metastatic breast cancer: CASCADE study.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

PI: Dr/a Rubio Pérez, María Jesús

2573: Molecular profiling of gestational breast cancer.  
PI: Dr/a De la Haba Rodríguez, Juan Rafael

2632: Improving the selection of patients with metastatic colorectal cancer who are candidates for biological therapies: Expanded genotyping using next-generation platforms with different sensivities.  
PI: Dr/a Aranda Aguilar, Enrique

2636: A retrospective study to assess the efficacy and safety of targeted therapies following first-line therapy with pazopanib in patients with metastatic renal cell cancer in regular clinical practice.  
PI: Dr/a Méndez Vidal, María José
Nephrology.
Cell damage in chronic inflammation

PhD Researchers
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Maria Luisa Aguera Morales
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Mario Espinosa Herranz
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PAIDI CTS-260 Scientific Group

Co-Principal Investigator (Co-PI)
Julia Carracedo Añón
Nicolas Monardes Contract
Scientific Activity

1. The latest technological advances in the treatment of chronic kidney disease have helped minimize the inflammation associated with the disease and improve our patients’ survival rates and quality of life. However, in these patients a microinflammatory state persists accomplished by a high percentage of activated cells that are capable of producing a sustained inflammatory response and can produce pathological complications when combined with other low-intensity stimuli. Our team assesses the effectiveness of pharmacological therapies, hemodialysis and kidney transplantation in improving this chronic microinflammatory state associated with kidney disease.

2. Mechanisms of cell damage and repair conditioning the response to stress caused by chronic inflammation. The working model focuses on immunocompetent cells and vascular wall cells. In addition, we analyze the mechanisms regulating the stress response in circulating progenitor cells in peripheral blood.

Keywords
Cell activation; chronic renal failure; microinflammation; cell therapy; renal transplantation; inflammation; cellular stress; genomic damage; endothelium.

Scientific Production

Publications

Original Papers

Soriano, Sagarro, Carmona, Andres; Trivino, Francisco; Rodriguez, Mariano; Alvarez-Benito, Marina. Martin-Malo, Alejandro; Alvarez-Lara, Maria-Antonia; Ramirez, Rafael; Aljama, Pedro; Carracedo, Julia. Endothelial damage and vascular calcification in patients with chronic kidney disease.American Journal of Physiology-Renal Physiology.2014;307:11F302-F311 IF:3.3


Editorial Material

Alvarez-de Lara, MA; Martin-Malo, A. Hyper-sensitivity to synthetic membranes for hemodialysis, an emerging problem?.Nefrologia.2014.34-6;698-702

Scientific Activity

Torregrosa, Jose-Vicente; Morales, Enrique; Manuel Diaz, Juan; Crespo, Josep; Bravo, Juan; Gomez, Gonzalo; Angel Gentil; Miguel Rodriguez Benot, Alberto; Rodriguez Garcia, Minerva; Lopez Jimenez, Veronica; Gutierrez Dalmayu, Alex; Jimeno, Luisa; Perez Saez, Maria Jose; Romero, Rafael; Gomez Alamillo, Carlos GrpCINAREN; GrpCINAREN; GrpCINAREN Study. Calcification of hyperparathyroidism as a new feature in renal transplantation: a multicentre, retrospective, 3-year study. Nephrology.2014 Feb;19(2)84-93 IF:1.864


Torregrosa, Josep V; Morales, Enrique; Díaz, Juan M; Crespo, Josep; Bravo, Juan; Gomez, Gonzalo; Gentil, Miguel A; Rodriguez Benot, Alberto; Rodriguez Garcia, Minerva; Lopez Jimenez, Veronica; Gutierrez Dalmayu, Alex; Jimeno, Luisa; Jose Perez Saez, M; Romero, Rafael; Gomez Alamillo, Carlos GrpEstudioCINAREN; GrpCINAREN; GrpCINAREN. Calcium in the management of normocalcaemic secondary hyperparathyroidism after kidney transplantation: a one-year follow-up multicentre study.Nefrologia.2014;34(1):62-8 IF:1.442

Castellanos, S; Palomares, I; Molina, M; Perez Garcia, R; Aljama, P; Ramos, R; Merello, JI. Clinical, analytical and bioimpedance characteristics of persistently overhydrated haemodialysis patients.Nefrologia.34;676-723 IF:1.442


Research Fundings

National


Martin Malo, AE. Effect of the purification efficiency of different dialysis modalities on inflammation and endothelial damage. Funding agency:Institute Carlos III Health (ISCIII). Reference: 10/00960 (finalized in 2014)


Regional


0097/07: Utility of rapamycin for secondary prevention of skin tumors in renal transplant recipients with recurrent squamous cell carcinoma. PI: Dr/a Navarro Cabello, Mª Dolores

0242/10: An open, multicenter, trial of eculizumab in adult patients with atypical hemolytic uremic syndrome. PI: Dr/a Espinosa Hernández, Mario

0256/10: An open, multicenter, randomized, two-arm trial to investigate de novo diabetes mellitus in renal transplant recipients receiving an advagraf-based immunosuppressive regime with or without corticosteroids. ADVANCE. PI Dr/a Rodriguez Benot, Alberto

0091/11: Effect of Paricalcitol on albuminuria, inflammation and fibrosis in patients with chronic proteinuric renal disease: A randomized controlled trial. PI: Dr/a Soriano Cabrera, Sagrario

0083/13: A randomized, prospective, open, parallel-group, multicenter study with masked assessment of evaluation criteria (PROBE Design) to compare the efficacy of administering enalapril 20 mg plus lecanidipine. PI Dr/a Santamaria Olmo, Rafael

0096/13: A randomized, cross-over, double-blind, placebo-controlled study. Modulation of endothelial damage and repair mediators through the inhibition of xanthine oxidase in patients with chronic kidney disease. PI: Dr/a Santamaria Olmo, Rafael

0102/13: Efficacy and safety of paricalcitol in reducing secondary hyperparathyroidism after kidney transplantation. PI: Dr/a Rodriguez Benot, Alberto

0190/13: An international, multicenter, randomized, double-blind, parallel-group, placebo-controlled study of the effect of atrasentan on kidney outcomes in subjects with diabetes type 2 and nephropathy. SONAR trial of diabetic nephropathy. PI: Dr/a Santamaria Olmo, Rafael

0219/10: A randomized, multicenter, parallel-group, active-controlled, dose-ranging, phase 2a study to assess the dose-response relation of GSK1278863 within the first four weeks of treatment, and assess the safety and efficacy of GSK1278863 for 24 weeks in patients with anaemia associated with chronic kidney disease requiring haemodialysis receiving recombinant human erythropoietin. PI: Dr/a Alvarez de Lara Sanchez, Mª Antonia

0221/13: A randomized, multicenter, parallel-group, active-controlled, phase 2b, 24-week duration study to assess the safety and efficacy of GSK1278863 in patients with anaemia associated with chronic kidney disease not receiving dialysis. PI: Dr/a Sagrario Soriano, Maria

0263/13: An observer-blind study to assess the immunogenicity and safety of GSK Biologicals’ subunit GSK143773A vaccine against Herpes Zoster (HZ/su) in kidney transplantation recipients aged ≥18. PI: Dr/a Aguera Morales, Mª Luisa

0264/13: A randomized, multicenter, open-label, parallel-group study to assess the efficacy and safety of oral administration of BAY 85-3934 and an active comparator (darbepoetin alfa) as maintenance treatment for anaemia prior to dialysis. PI Dr/a Soriano Cabrera, Sagrario

0265/13: A multicenter, open-label, parallel-group, extension study to assess the efficacy and safety of oral administration of BAY 85-3934 and an active comparator (darbepoetin alfa) in long-term treatment for anaemia associated with chronic kidney disease. PI: Dr/a Santamaria Olmo, Rafael

0229/14: A randomized, double-blind, placebo-controlled, phase III study to assess the efficacy and safety of the ASP0113 vaccine in CMV-seronegative donors. PI: Dr/a Espinosa Hernández, Mario

0145/14: A randomized, double-blind, placebo-controlled, phase II study to assess the efficacy and safety of the ASP0113 vaccine in CMV-seronegative donors. PI: Dr/a Navarro Cabello, Maria Dolores

0148/14: A randomized, multicenter, controlled, open-label study to assess the efficacy of sequential treatment with Tacrolimus-Rituximab vs steroids plus Cyclophosphamide in patients with primary membranous nephropathy. PI: Dr/a Espinosa Hernández, Mario

0048/14: A randomized, multicenter, controlled, parallel-group study to assess the efficacy and safety of oral administration of BAY 85-3934 and an active comparator (darbepoetin alfa) in long-term treatment for anaemia associated with chronic kidney disease. PI: Dr/a Santamaria Olmo, Rafael

0229/14: A randomized, open, phase III study controlled with an active treatment to assess the efficacy and safety of roxadustat as maintenance treatment for anaemia in end-stage renal failure patients receiving stable dialysis. PI: Dr. Alvarez De Lara Sanchez, Maria Antonia

1747: Impact of screening, monitoring and reduction of immunosuppression on viral replication and incidence of VBK-associated nephropathy. PI: Dr/a Rodriguez Benot, Alberto

1757: A post-commercialization observation study to monitor the clinical use of Renvela® in hyperphosphatemic adult patients with chronic renal failure not receiving dialysis with serum phosphorus concentrations> 178 mmol / L. PI: Dr/a Soriano Cabrera, Sagrario

1761: A multicenter, epidemiological, prospective observational study to assess the incidence of cytomegalovirus-induced disease and associated risk factors in Receptor + renal transplant recipients. PI: Dr/a Navarro Cabello, Mª Dolores

1762: National Registry of Humoral Rejection: An epidemiological, multicenter, observational, prospective study to assess the clinical, serological and histological characteristics and five-year evolution of humoral rejection after renal transplantation in Spain. PI: Dr/a Agüera Morales, Mª Luisa

1855: A multicenter, prospective, observational study to analyze progression factors in chronic renal disease in diabetic patients vs non-diabetic patients. PI: Dr/a Santamaria Olmo, Rafael

1971: A multicenter, retrospective, observational study to assess long-term renal function in renal transplant recipients converted from a tacrolimus-based immunosuppressive treatment to immediate release (Prograf) to tacrolimus. PI: Dr/a Rodriguez Benot, Alberto

2079: A multinational multicenter, observational, non-interventional study of patients with atypical hemolytic uremic syndrome (SHUA register). PI Dr/a Espinosa Hernández, Mario

2391: A multicenter, retrospective study to determine the factors affecting survival in patients who have received pancreas transplants. EFISPAN study. PI Dr/a Navarro Cabello, Maria Dolores

2591: ADAPTATION: Observational Study of Correction of Anaemia with Darbepoetin Alfa at Monthly Dose Frequency in EU and Australian patients with Chronic Kidney Disease not on Dialysis). PI:Dr/a Soriano Cabrera, Sagrario

2612: A Long-term follow-up study involving adults who received kidney and liver allografts and had previously taken part in a trial with Tacrolimus (Advagraf). A multicenter, non-interventional, post-authorization study. PI: Dr/a Rodriguez Benot, Alberto Manuel
Hormones and Cancer

Team Leaders

Principal Investigator (PI)
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CIBER on Obesity and Nutrition (CIBERobn)
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Postdoctoral Researchers
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Alejandro Ibáñez Costa

Pre-PhD Researchers
Alicia Vila Osaba
Esther Rivero Cortes
David Rincón Fernández-Pacheco
Daniel Hormaechea Agulla
André Cabral Morais Sarmiento Borges
Ma Carmen Vázquez Borrego
Ramón Santamaría Peiteado
Jesus Moreno Fernández
Sergio Pedraza Arévalo
Virginia Ruiz-Murillo
Maria Eugenia Prados-González
Sebastiano Messineo

Other members of the Group
(Nursing, Technical, and Administrative Staff)
Fernando López López
Scientific Activity

Our group investigates the cellular and molecular mechanisms underlying the natural processes of neuroendocrine-metabolic regulation and their dysfunctions in tumours and cancer. Special emphasis is dedicated to the role played by key neuropeptide-receptor systems and their receptors, and to emerging molecular regulatory mechanisms in cancer, like splicing. From original studies of pituitary somatotropes producing growth hormone (GH), our group has developed a Research Area focused on the analysis of extracellular signals (somatostatin, cortistatin, GHRH, ghrelin, kisspeptins, etc.); receptors (sst1-5, GHRH-R, GHs-R, Kiss1r) and signalling pathways involved in the regulation of this cell type, as well as other neuro-endocrine cell types (e.g. corticotropes, gonadotropes, pancreatic beta cells) and the global role of these molecules in metabolic homeostasis and the development of tumour pathologies, including pituitary and neuroendocrine tumors, and prostate and breast cancer, etc.

To achieve this aims, we use a wide range of techniques, including primary cultures of normal and tumour cells, cell lines, genetically modified animals, hormone secretion measurements, quantification of second messengers protein and gene expression, dynamics of association/dissociation studies and membrane protein trafficking using FRET, confocal microscopy in living cells, etc. Our studies have led to the discovery and characterization of new receptors, functions and mechanisms of action for different neuroendocrine-metabolic signals and drugs involved in the control of hormone secretion, tumorigenesis, or cell survival and death in various normal and pathological cell types (e.g. pituitary tumours, breast cancer, diabetes, obesity), with the ultimate aim of contributing to the future design of innovative therapeutic strategies.

Keywords

Cellular and Molecular Endocrinology: Hypothalamus; Pituitary; Somatostatin; cortistatin; ghrelin; GHRH and kisspeptins and their receptors; Expression and secretion of hormones (GH, PRL, IGF-I, insulin) and intracellular signalling pathways; Regulation of the somatotropic and gonadotropic-reproductive axes; Pituitary tumours; Neuroendocrine tumors; Prostate cancer; Breast cancer.

Scientific Production

Publications

Original Papers


Review


In Collaborations

Papers


Research Fundings

National

Castaño Fuentes, JP. Role of somatostatin, cortistatin and ghrelin in the pathological interaction between obesity and breast cancer. Funding agency: Ministry of Economy and Competitiveness (MINECO). Reference: BFU2010-15201


Luque Huertas, RM. Molecular, cellular, Endocrine-Metabolic and inflammatory factors involved in the pathological interaction between obesity and prostate cancer. Funding agency: Instituto Carlos III Health (ISCIII). Reference: PRI3/00651

Regional


Contract with Companies


Luque Huertas RM; Castaño Fuentes JP. In1-ghrelin, a novel aberrantly spliced ghrelin variant, dOAT and GHSR1α and GHSR1β in neuroendocrine tumors, prostate cancer and Cushing disease: presence, function and therapeutic potential. Funding agency: IPSEN-SCRAS S.A.S. Reference: ccb.uco0042
**GC9**

**Nutrigenomics.**

**Metabolic syndrome**

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**PhD Researchers**
- Yolanda Almadén Paña
- Mª Ángeles Blanco Molina
- Rafael Ángel Fernández de la Puebla
- Francisco Fuentes Jiménez
- Manuel Montero Pérez-Baquero
- Anabel Pérez Caballero
- Oriol Alberto Rangel Zúñiga
- Esther Sánchez García
- Elena Yubero Serrano

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- Antonio Camargo García
- Juan Criado García
- Cristina Cruz Teno
- Nieves Delgado Casado
- Manuel David Gaheño Ortiz
- Antonio García Ríos
- Francisco Gómez Delgado
- Purificación Gómez Luna
- Anabel Jiménez Morales
- Carmen Marín Hinojosa
- Elíana Romina Meza Miranda
- Lorena González de la Guardia
- Patricia Judith Paña Orihuela

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**Pre-PhD Researchers**
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- Andrea Corina Baba
- Carmen María Haro Mariscal

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**Other members of the Group (Others Researchers, Nursing, Technical, and Administrative Staff)**
- Ezequiel Herruzo Gómez
- Rosa Jiménez Lucena
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- Gracia Mª Quintana Navarro
- Almalia Torres Roldán
- Rosario Carreras Calero
- Marta Magdalena Cruz Donoso
- Beatriz Lucena Porras

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- Francisco Pérez Jiménez  
- PAIDI CTS-212 Scientific Group
- Pablo Pérez Martínez
- Javier Delgado Lista

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**Publications**
- 46

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**Impact Factor**
- 170,942

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**Average Impact Factor**
- 3.785
Scientific Activity

Our group studies the effect of dietary components on cardiovascular risk from a dual approach: nutrigenetics and their biological action on factors and mechanisms related to the development of atherosclerosis, preferably in patients with metabolic syndrome. Through nutrigenetics, we investigate how common genetic variants modulate the influence of diet on markers such as postprandial metabolism, endothelial function, obesity or glucose metabolism. While investigating their biological effects, we analyze the action of nutrients on atherogenic mechanisms such as oxidative stress, inflammation, endothelial function, hemostasis, cellular signaling mechanisms and the activation of genes involved in atherogenesis. Finally, we have ongoing a clinical trial to rest the comparative effects of two healthy diets on clinical outcomes in a coronary heart disease population.

Keywords
Atherosclerosis; metabolic syndrome; Mediterranean diet; endothelium; inflammation; oxidative stress; cholesterol; polyphenols; gene expression; proteomics; nutrigenetics; nutrigenomics.

Scientific Production

Publications

Original Papers


Gomez-Delgado, Francisco; Francisco Alcalá-Diaz, Juan; Garcia-Rios, Antonio. Delgado-Lista, Javier; Ortiz-Morales, Ana. Rangel-Zuniga, Oriol; J. Perez Jimenez, Francisco; Gonzalez-Guardia, Lorena; Malagon, Carmen; Malagon, Maria; Bellido-Munoz, Enrique; Ordonez, Jose; Perez Jimenez, Francisco; Lopez-Miranda, Jose; Perez-Martinez, Pablo. Polymorphism at the TNF-alpha gene interacts with Mediterranean diet to influence triglyceride metabolism and inflammation status in metabolic syndrome patients. From the CORDIOPREV clinical trial. Molecular Nutrition & Food Research. 58:7159-1527


Rangel-Zuniga, Oriol; A. Haro, Carmen; Perez-Martinez; Pablo; Delgado-Lista, Javier; Marin; Carmen. Quintana-Navarro, Gracía; M. Tinahones, Francisco; Francisco Jimenez, J.; Malagon, Maria; Malagon, Jose; Tinahones, Francisco J.; Ordovas, Jose M.; Perez Jimenez, Francisco; Lopez-Miranda, Jose. Effect of feeding on the postprandial endoplasmic reticulum stress in obese people. Molecular Nutrition & Food Research. 58(12):2239-2242


Gutierrez-Mariscal, Francisco M.; Yubero Serrano, Elena M.; Rangel-Zuniga, Oriol A.; Marin, Carmen; Garcia-Rios, Antonio; Perez-Martinez, Pablo; Delgado-Lista, Javier; Malagon, Carmen M.; Tinahones, Francisco J.; Perez Jimenez, Francisco; Lopez-Miranda, Jose; Perez Martinez, Pablo; Peralta Ramirez, Alan; Perez Martinez, Pablo; Navarro-Gonzalez, Juan F.; Rodriguez, Mariano; Peter, Miriam; Gundlach, Kristina; Steppan, Sonja; Passlick-Deetjen, Jutta; Munoz Castraveda, Juan R.; Almaden, Yolanda. Magnesium modulates parathyroid hormone secretion and upregulates parathyroid receptor expression at moderately low calcium concentrations.

Blanco-Molina, Angeles; Enea, Iolanda; Gadel-Neblia, Elena; Enea, Iolanda; A. Tirach, Telma; Panagia, Julia; A. Alessandra; Di Micco, Pierpaolo; Buauna, Henri; Gonzalez, Jose; Villalta, Jaume; Moneval, Manuel. RITE Investigators. Sex differences in patients receiving antiaggregant therapy for venous thromboembolism. Medicine. 2014; 93(17):309-317

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Alcala-Diaz, Juan F.; Delgado-Lista, Javier; Perez-Martinez, Pablo; Garcia-Rios, Antonio; Marin, Carmen; Quintana-Navarro, Gracia M.; Gomez-Luna, Purificacion; Camargo, Antonio; Almaden, Yolanda; Caballero, Javier; Tinahones, Francisco J.; Ordovas, Jose M.; Perez Jimenez, Francisco; Lopez-Miranda, Jose. Hypertriglyceridemia Influences the Degree of Postprandial Lipemic Response in Patients with Metabolic Syndrome and Coronary Artery Disease. From the Cordioprev Study. Plos One.2014(5):e96297

Rodriguez-Ortiz, Maria E.; Canalejo, Antonio; Herencia, Carmen; Martinez-Moreno, Julio M.; Peralta Ramirez, Alain; Perez Martinez, Pablo; Navarro-Gonzalez, Juan F.; Rodriguez, Mariano; Peter, Mirjam; Gundlach, Kristina; Steppan, Sonja; Passlick-Deetjen, Jutta; Munoz-Castañeda, Juan R.; Almaden, Yolanda. Magnesium modulates parathyroid hormone secretion and upregulates parathyroid receptor expression at moderately low calcium concentrations.

Perez-Martinez, Pablo, Alcala-Diaz, Juan F; Delgado-Lista, Javier; Garcia-Rios, Antonio; Gomez-Delgado, Francisco; Marin-Hinojo, Carmen; Rodriguez-Cantalejo, Fernando; Delgado-Casado, Nieves; Perez-Caballero, Ana I; Fuentes-Jime\nez, Francisco; J. Gar\no, Antonio; T \nainohones, Francisco J; Ordo\vas, Jose M; Perez-Jimenez, Francisco; Lopez-Miranda, Jose. Metabolic phenotype of obesity influence triglyceride and inflammation in mice. European Journal of Clinical Investigation. 2014; 44(10):S5-S16

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Camargo, A Pe\na-Or\nhuela, P; Rangel-Z\niga OA; Perez-Martinez, P; Delgado-Lista J; Cruz-Teno, C; Marin C; Tainohones F; Malagon MM; Ro\che HM; Perez-Jimenez F; Lopez-Miranda J. Peripheral blood mononuclear cells as in vivo model for dietary intervention induced systemic oxidative stress. Food And Chemical Toxicology. 2014; 72:178-186

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Ruz-Laglais, FJ; Sanchez-Mart\les, M; Perez-Calvo; Il; Formiga, F; Bartolome-Salvador, JA; Armengol-Buxo, A; Lopez-Quoros, R; Perez-Si\nvestre, J; Serrado-Iglesias, A; Montero-Pe\nza-Barquero, M. Comorbidit in heart failure. Results of the Spanish RICA Registry. QJM: An International Journal of Medicine. 2014; 107(10):989-994

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Carrasco-San\chez Javier, Francisco; Go\mez-Huelgas, Ricardo, Formiga, Francisco; Conde-Martel, Alice; Gar\ces Trullas, Joan; Bet\ntencourt, Paulo; Carlos Arevalo-Lor\do, Jose; Montoro Perez-\Barquero, Mar\no, RICA Inves\tigators. Association between type-2 diabetes mellitus and post-discharge outcomes in heart failure patients: Findings from the RICA registry. Diabetes Research and Clinical Practice. 2014; 104(3):410-419

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Sanchez-Garcia, M E; Gomez-Delgado, F; Go\mez-Gardu\no, A; Blanco-Molina, A; Fernandez de la Puebla, R A. Hypertrophic pachy\seningi tos associated with cer\batal fluid hypo-\x2026;Orga\nism composition of tissue. Lupus. 2014; 23(2):197-200

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Bonfanti, Noelia; Marcelo Fernandez, Juan; Go\mez-Delgado, Francisco; Perez-Jimenez, F; Fernandez-Casado, Nieves; Perez-Caballero, Ana I; Gesmundo, I; Grande, C; Gracia-Navarro, Francisco; Cordoba-Chacon, Jose; Ghate\te, Manuel D; Pokala, Naveen K; Gelderm\aen, David Alba, Maria; Salvator, Roberto; Luque, Raul M; Ki\nerman, Rhonda D; Long-But Nol; Short-Term Adult-Or\ntal, Isolated. GH Deficiency in Male Mice Leads to Deterioration of beta-Cell Function, Which Cannot Be Accounted for by Changes in beta-Cell Mass Endocrinology. 2014; 155(3):726-735

IF:4.644

Luque, RM, Cordoba-Chacon, J, Ibanez-Costa, A, Fernandez-Casado, N, A; Fernandez-Calvo, JI; Formiga, Francisco; Cordoba-Chacon, Jose; Ghate\te, Manuel D; Pokala, Naveen K; Gelderm\aen, David Alba, Maria; Salvator, Roberto; Luque, Raul M; Kir\nerman, Rhonda D; Long-But Nol; Short-Term Adult-Or\ntal, Isolated. GH Deficiency in Male Mice Leads to Deterioration of beta-Cell Function, Which Cannot Be Accounted for by Changes in beta-Cell Mass Endocrinology. 2014; 155(3):726-735

IF:4.644


IF:4.088

Vazquez, C; Botella-Carretero, J I; Core\lia, D; Fo\l, M; Lage, M; Lurbe, E; Ric\hart, G; Fernan\dez-Real, J M; Fuentes, F; Or\donez, A; Fuentes, J; Salas-Salvado, J; B\rguera, B; Estruch, R; Ros, E; Past\or, D; Car\asaneuva, F; F. WISH-Care Study Investigators. White fish reduces cardiovascular risk factors in patients with metabolic syndrome: The WISH-CARE study.

In Collaborations

Papers

Suades, Rosa, Padro, Teresa, Alonso, Rodrigo, Lopez-Miranda, Jose; Mata, Pedro; Badimon, Lina. Circulating CD45(+)/CD3(+) lymphocyte-derived microparticles map lipid-rich atherosclerotic plaques in familial hypercholesterolema patients. Thrombosis and Haemostasis. 2014; 111(1):111-121

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Garrido-Sanchez, L; Roca-Rodriguez, MD; Fernandez-Veleido, S; Vendrell, J; Yubero-Serrano, EM; Coene-Wilhelms, L; Garcia-Fuentes, E; Tainohones, FJ; CONG2 and CDK4 is associated with insulin resistance in adipose tissue. Surgery For Obesity And Related Diseases. 2014; 10(4):691-698.

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Cordoba-Chacon, Jose; Ghate\te, Manuel D, Pokala, Naveen K; Gelderm\aen, David Alba, Maria; Salvator, Roberto; Luque, Raul M; Ki\nerman, Rhonda D; Long-But Nol; Short-Term Adult-Or\ntal, Isolated. GH Deficiency in Male Mice Leads to Deterioration of beta-Cell Function, Which Cannot Be Accounted for by Changes in beta-Cell Mass Endocrinology. 2014; 155(3):726-735

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Luque, RM, Cordoba-Chacon, J, Ibanez-Costa, A, Fernandez-Casado, N, A; Fernandez-Calvo, JI; Formiga, Francisco; Cordoba-Chacon, Jose; Ghate\te, Manuel D; Pokala, Naveen K; Gelderm\aen, David Alba, Maria; Salvator, Roberto; Luque, Raul M; Ki\nerman, Rhonda D; Long-But Nol; Short-Term Adult-Or\ntal, Isolated. GH Deficiency in Male Mice Leads to Deterioration of beta-Cell Function, Which Cannot Be Accounted for by Changes in beta-Cell Mass Endocrinology. 2014; 155(3):726-735

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IF:4.088

Vazquez, C; Botella-Carretero, J I; Core\lia, D; Fo\l, M; Lage, M; Lurbe, E; Ric\hart, G; Fernan\dez-Real, J M; Fuentes, F; Or\donez, A; Fuentes, J; Salas-Salvado, J; B\rguera, B; Estruch, R; Ros, E; Past\or, D; Car\asaneuva, F; F. WISH-Care Study Investigators. White fish reduces cardiovascular risk factors in patients with metabolic syndrome: The WISH-CARE study.
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ion Metabolism and Cardiovascular Diseases. 2014; 34(3):298-335
IF:3.875
Puig-Domingo, Manel; Luque, Raúl M; Revert-
er, Jordi L; Lopez-Sanchez, Laura M; Gahele, Manuel D; Culler, Michael D; Diaz-Soto Gonzalez; Lozana, Francisco; Squarrac, Mattia; Luis Mate, Jose; Mora, Mireia; Fernandez-Cruz, Lau-
reano; Vidal, Oscar; Alastrue, Antonio; Balbiorea, Jose; Halperez, Iren; Mauricio Didac; Castafio, Justo P. The Truncated Isomer of Somatosta-
tin Receptor5 (sst5TMD4) Is Associated with Poorly Differentiated Thyroid Cancer. Plos One. 2014; 9(1): E85527
IF:3.534
Montes de Oca, Addy; Guerrero, Fatima; Marti-
nez-Moreno, Julio M; Madueño, Juan A; Heren-
cia, Carmen; Peralta, Alfonso; Almaden, Yolanda; Lopez, Ignacio; Aguilera-Tejero, Escolastico; Gundlach; Kristina; Buchel, Janine; Peter Mirjam; EPasslick-Deelen, Jutta; Rodriguez, Mariano; Munoz-Canestadana, Juan R; Magne-
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IF:3.534
Guerrero, F; Herencia, C; Almaden; Y; Marti-
nez-Moreno, JM; de Oca, AM; Rodriguez-Ortiz, ME; Diaz-Tocados, JM; Canalejo, A; Florio, M; Lopez, I; Richards; WG; Rodriguez, M; Aguil-
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IF:3.3
Peralta-Ramirez, A; Montes de Oca, A; Raya, A I; Pineda; C; Lopez; I; Guerrero, F; Diez; E; Munoz-Castanedana, J R; Martinez, J; Al-
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IF:3.3
Walsh, Marianne C; McLoughlin, Gerard A; Rocke, Helen M; Ferguson, Jane F; Drevon, A I; Pineda, C; Lopez, I; Guerrero, F; Herencia, C; Almaden, Y; Munoz-Castanedana, J R; Martinez, J; Almaden, Y; Rodriguez, M; Aguilera-Tejero, E; Vitamin E protection of obesity-enhanced vascular calcification in uremic rats. Ameri-
IF:3.3
Cote, LP; Greenberg, S; Caprini, JA; Stone, J; Arcelius, JI; Lopez-Jimenez, L; Rosa, V; Schel-
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IF:1.575
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Mijares, A; Morlasa; J; Spanish Registry Hypertrophic Cardiomyopathy; Spanish Soc Arteriosclero-
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IF:2.372
Gonzalez-Garcia, Andres; Montero Pe-
erez-Barquero, Manuel Formiga, Francesc; Gon-
zalez-Juanatey, Jose R; Angustias Quenesada, M; Epelde, Francisco; Oropeza, Roberto; Diez-Man-
glano, Jesus; Geronjoe, Jose M; Manzano, Luis; RICA Registry Investigators. Has Beta-blocker Use Increased in Patients With Heart Failure? In Internal Medicine Settings? Prognostic Im-
IF:3.342
Trujillo-Santos, Javier; Guussoni, Qualberto; Gadelia, Telma; Saenchez Munoz-Torrero, Juan Francisco; Barron, Manuel; Lopez, Lucia-
no; Ruiz-Ruiz, Justo; Fernandez-Capitan, Car-
men; Lorente, Manuel; Monreal; Manuel; RITE-
Investigators. Influence of recent immobiliza-
tion or surgery on mortality in cancer patients with venous thromboembolism. Thrombosis Research. 2014; 136(Suplemento 2):S29-S34 IF:2.427
Research Fundings
National
Fuentes Jimenez, F. Evaluation and Character-
Delgado Lista, FJ. Glucogene project: develop-
ing a clinical tool for the identification, stag-
ing and individualized non-pharmacologi-
tical treatment of coronary patients with high genetic risk of developing alterations in the metabolism of carbohydrates. Funding agen-
cy:Institute Carlos III Health (ISCIII).Reference:PI2/00023
Perez Martinez, P. Developing a technologi-
cal platform to evaluate the ageing level and establish an individualized treatment regime based on the clinical, biological and genetic profile of the patient. Funding agency:Institute Carlos III Health (ISCIII).Reference:PI2/00185
Pérez Jiménez, F. Identifying the bowel micro-
bioa partner to predict the development of the metabolic syndrome and diet-based modula-
Garcia Rios, A. PREDIME+DM: Effect of a hy-
pocaloric Mediterranean diet and physical activity promotion on the prevention of type 2 diabetes mellitus in subjects with the Met-
abolic Syndrome. Funding agency: Instituto Carlos III Health (ISCIII).Reference:PI3/000185
Pérez Jiménez, F. Biomodulatory effects of olive oil on the molecular mechanisms of inflam-
Regional
Lopez Miranda, J. Nutrigenomic Analysis of the effect of a Mediterranean diet rich in virgin olive oil on endothelial damage and regener-
ative capacity and its predictive value in cardio-
vascular risk. Funding agency: Regional Ministry of Health and Social Policy (CISPS). Reference:PI-0206-2013
Pérez Jiménez, F. Biomodulatory effects of olive oil on the molecular mechanisms of inflam-
Gahele Ortiz, M. D. Determining the molecular footprint of predictive splicing in the devel-
opment of prostate cancer and application in the diagnosis and treatment of the dis-
ease. Funding agency:Regional Ministry of Health and Social Policy (CISPS). Reference:PI-0545-2013
López Miranda, J. Early predictors and causes related to the inflammatory response and in-
International
Lopez Miranda, J. NUTRI-TECH. Application on new technologies and methods in nutrition research-the example of provitamin E nic-
terly. Funding agency:Comision Europea / Tpm-
Lopez Miranda, J. Impact of geographical re-
search-the example of provitamin E nic-
terly. Funding agency:Comision Europea / Tpm-
López Miranda, J. 2 Diabetes Mellitus: Cordi-
Pérez Martinez, P. Merck Serono research grant to the study. Characterization of the genetic architecture of metabolic syndrome related to the inflammatory response and in-
Contract with Companies
Lopez Miranda, J. Astrazeneca agreement. Funding agency:Astrazeneca Farmaceutica Spain S.A. Reference:OSB 0045
Martínez Fuentes, A. Grupo Español de Tumores Neuroendocrino Agreement. Funding agency: Grupo Español de Tumores Neuroendocino. Reference: CCB.UCO00053


Montero Pérez-Barquero, M. Paifer agreement. Funding agency:PFIZER, S.L.U. Reference: CCB.0070

Pérez Jiménez, F. Nutritional Intervention Study to assess the evolution of health benefits derived from the consumption of kale in populations at high cardiovascular risk. PESCANOVA project. Funding agency:Centro de Investigación Biomédica en Red de la Fisiopatología de la Obesidad y Nutrición (CIBERobn).Reference: PSS.0011


Montero Pérez-Barquero, M. Laboratorios Servier Agreement. Funding agency: Laboratorios Servier: S.L. Reference: PSS.0051

Clinical Trials

0021/08: Two-year extension of a global, multicenter, randomized, placebo-controlled, 76-week study to assess the tolerability and effectiveness of anacetrapib added to an ongoing statin-based treatment in patients with heart disease or equivalent risk of developing a heart disease. Extension of the reversibility period from 12 weeks to one year. PI: Dr/a Pérez Jiménez, Francisco

0169/11: Open label extension (OLE), controlled, multicenter study to assess the safety and long-term efficacy of AMG 145. PI: Dr/a Lopez Miranda, Jose

0267/11: A global, multicenter, double-blind, randomized, parallel-group, placebo-controlled, one-year study to assess the effectiveness and tolerability of Anacetrapib added to an ongoing statin-based treatment, combined or not with other lipid modifying agents in patients with heterozygous familial hypercholesterolemia. PI: Dr/a Lopez Miranda, Jose

0014/12: Long-term safety and tolerability profile of REGN727/3AR236553 in patients at high cardiovascular risk with inadequate control of hypercholesterolemia with a lipid-modifying therapy: A randomized, double-blind, controlled study. PI: Dr/a Pérez Jiménez, Francisco

0036/12: A multicenter, randomized, double-blind study to assess the safety and efficacy of AMG 145, compared with ezetimibe in hypercholesterolemic subjects intolerant to an effective dose of an HMG-CoA reductase inhibitor. PI: Dr/a Lopez Miranda, Jose

0139/12: Multicenter, randomized, double-blind, placebo-controlled study to assess the safety, tolerability and efficacy of AMG 145 in LDL cholesterol in subjects with heterozygous familial hypercholesterolemia. PI: Dr/a Lopez Miranda, Jose

0166/12: A multicenter, randomized, double-blind, placebo-controlled study to assess the effect of a further reduction of LDL cholesterol in major cardiovascular events when AMG 145 is used in combination with statins in patients with clinically evident heart disease. PI: Dr/a Lopez Miranda, Jose

0183/12: A multicenter, double-blind, placebo-controlled, parallel-group study to assess the effectiveness and safety of SAR236553/RE0727 in patients with heterozygous familial hypercholesterolemia that is not adequately controlled with their treatment. PI: Dr/a Pérez Jiménez, Francisco

0231/12: Evaluation of the clinical effects of statin-estr transfer protein inhibition induced with evacetrapib in patients at a high cardiovascular risk. PI: Dr/a Pérez Jiménez, Francisco

0341/12: EA randomized, double-blind, placebo-controlled, parallel-group trial to assess the effect of SAR236553/RE0727 on the occurrence of cardiovascular events in patients who recently had acute coronary syndrome. PI: Dr/a Fuentes Jiménez, Francisco

0348/12: A multicenter, randomized, double-blind, double-simulation, parallel-group, active-control, 52-week study of the effect of QVA149 versus salmeterol/flunisolone. PI: Dr/a Delgado Lista, Javier

0032/13: A multicenter, open study to assess the safety, tolerability and long-term efficacy of AMG 145 in C-LDL cholesterol in subjects with severe heterozygous familial hypercholesterolemia. PI: Dr/a Fuentes Jiménez, Francisco

0033/13: A two-part, phase2/3 study to assess the safety, tolerability and long-term efficacy of AMG 145 in subjects with heterozygous familial hypercholesterolemia. PI: Dr/a Fuentes Jiménez, Francisco

0086/13: An open label extension (OLE), controlled, multicenter study to assess the safety and long-term efficacy of AMG 145. PI: Dr/a Lopez Miranda, Jose

0205/13: An open extension study of the trialsECF12492, R727-CL-11, EFC2732 and LT217/17 to assess the safety and long-term efficacy of Alirocumab in patients with heterozygous familial hypercholesterolemia. PI: Dr/a Fuentes Jiménez, Francisco

0216/13: A randomized, double-blind, parallel-group, active-control trial to assess the efficacy and safety of LCZ696 versus Valsartan on morbidity and mortality in patients with heart failure NYHA Class II-IV. PI: Dr/a Monró Perez-Barquero, Manuel

0223/13: A multicenter, double-blind, placebo-controlled, parallel-group study to assess the effectiveness and safety of Alirocumab in statin-naive patients with primary heterozygous familial hypercholesterolemia. PI: Dr/a Fuentes Jiménez, Francisco

0282/13: A randomized, double-blind, double-blind, placebo-controlled, parallel-group, 52-week study to assess the efficacy, safety and tolerability of PF-04950615 in patients with heterozygous familial hypercholesterolemia. PI: Dr/a Pérez Martinez, Pablo

0295/13: A randomized, multicenter, double-blind, double-blind, placebo-controlled, parallel-group study to assess the efficacy, safety and tolerability of PF-04950615 in reducing the number of severe cardiovascular events in high-risk patients. PI: Dr/a Pérez Martínez, Pablo

0314/13: A randomized, multicenter, double-blind, placebo-controlled, parallel-group study of the effects of Canagliflozin in renal events in adult subjects with Diabetes Mellitus Type 2. PI: Dr/a Fuentes Jiménez, Francisco

2053: Xalia-Xarelto ® for initial long-term anticoagulation in venous thromboembolism (VTE). PI: Dr/a Blanco Molina, Mª Ángeles

2239: Prevention of thromboembolism episodes/ European Registry of venous thromboembolism. ESTUDIO PREFER study of VTE. PI: Dr/a Lopez Jimenez, Luciano

2239/0: Prevention of thromboembolism episodes/ European Registry of venous thromboembolism. ESTUDIO PREFER study of VTE. PI: Dr/a Blanco Molina, Mª Ángeles

2566: Validating the ACTS questionnaire for patients with atrial fibrillation treated with oral anticoagulants in Internal Medicine and Neurology units in Spain. ALADI study. PI: Dr/a Montero Pérez-Barquero, Manuel

2615/2: General, long-term registry of atrial fibrillation EORP registry. PI: Dr/a Montero Pérez-Barquero, Manuel
Hormonal regulation of energy balance, puberty and reproduction

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Ana Belén Pedraza Casado
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Mª Jesús Sánchez Tapia
Scientific Activity

Our research group studies the neuroendocrine mechanisms responsible for the integrated control of food intake, body weight, puberty and reproductive function. By using various analytical methods and animal models, in recent years our group has identified new neuropeptides and hormones involved in the joint regulation of metabolic status and reproduction. Thus, we have made substantial contributions to the characterization of the physiological role, mechanisms of action, and pathophysiological and therapeutic implications of kisspeptins in the control of puberty, ovulation and the secretion of gonadotropins. In addition, we have characterized the actions of different gastrointestinal hormones (ghrelin, PYY) and adipose tissue (leptin, resistin, adiponectin), as well as the control of food intake and reproductive function. Additionally, we have defined the role in the reproductive axis of the different neuropeptides (GALP, neurenomedins, 2B/43RFa, VGF) primarily involved in the control of food intake. Moreover, we have undertaken research activities on the regulatory roles of microRNAs in the control of puberty, fertility and metabolism. Even when our research activity is basic in nature, it has allowed us to identify mechanisms of action and pharmacological effects of practical interest for a broad group of neuroendocrine factors with the potential translational results in the context of increasingly prevalent diseases such as obesity and other body weight disorders, changes of puberty and various forms of infertility. In addition, translational studies in the fields of gynaecology, urology and paediatrics have been recently initiated.

Keywords
Body weight; obesity; puberty; fertility; kisspeptins; GPR54; gonadotropins; GnRH; leptin; ghrelin; adipokines; neuropeptides; microRNAs; Polycystic ovary syndrome (PCOS).

Scientific Production

Publications

Original Papers


Dorfman, MD; Garcia-Rudaz, C; Alderman, Z; Kerr, B; Lomniczi, A; Dissen, GA; Castellano, JM; Garcia-Galiano, D; Gaytan, F; Xu, BJ; Tena-Sempere, M*; Ojeda, SR*. Loss of Ntrk2/Kiss1r Signaling in Oocytes Causes Premature Ovarian Failure Endocrinology. 2014;155(6):3098-3111 IF: 4.644(*: joint corresponding authors)

Gaytan, F; Garcia-Galiano, D; Dorfman, MD; Manfredi-Lozano, M; Castellano, JM; Dissen, GA; Ojeda, SR; Tena-Sempere, M. Kisspeptin Receptor Hapl-insufficiency Causes Premature Ovarian Failure Despite Preserved Gonadotropin Secretion Endocrinology. 2014; 155(8): 3088-3097 IF: 4.644

Sanchez-Garrido, MA; Ruiz-Pino, F; Manfredi-Lozano, M; Leon, S; Garcia-Galiano, D; Castano, JP; Luque, RM; Romero-Ruz, A; Castellano, JM; Dieguez, C; Pinilla, L; Tena-Sempere, M. Obesity-Induced Hypogonadism in the Male Premature Reproductive Neuroendocrine Seneescence and Contribution of Kiss1-Modulated Mechanisms Endocrinology. 2014; 155(9): 1067-1079 IF: 4.644

Leon, S; Garcia-Galiano, D; Ruiz-Pino, F; Barroso, A; Manfredi-Lozano, M; Romero-Ruz, A; Roa, J; Vazquez, M; Gaytan, F; Blommerhofer, M; Van Duren, M; Pinilla, L; Tena-Sempere, M. Physiological roles of gonadotropin-inhibitory hormone signaling in the control of mammalian reproductive axis: studies in the NPFF1 receptor null mouse. Endocrinology. 2014; 155(8): 2953-65 IF: 4.644

Garcia-Ortega, J; Pinto, F; M; Fernandez-Sanchez, M; Prades, N; Ojeda-Roman, A; Almeida, T A; Hernandez, M; Romero, M; Tena-Sempere, M*. Candenas, L*. Expression of neuropekin B/NK3 receptor and kisspeptin/KISS1 receptor in human granulosa cells. Human Reproduction. 2014;29(12):2793-46 IF: 4.585 (*: joint corresponding authors)


Reviews


In Collaboration

Papers


Novello, Marta G; Vazquez, Maria J; Marti nejo, Katia D, Sanchez-Garrido, Miguel A; Tena-Sempere, Manuel; Dieguez, Carlos. Neonatal events, such as androgenization and postnatal overfeeding, modify the response to ghrelin. Scientific Reports. 2014; 4: 4855 IF: 5.078

Overgaard, A; Ruiz-Pino, F, Castellano, JM; Tena-Sempere, M; Mikkelson, JD. Disparate Changes in Kisspeptin and Neurokinin B Expression in the Arcuate Nucleus After Sex Steroid Manipulation Reveal Differential Regulation of the Two KNDy Peptides in Rats. Endocrinology. 2014; 155(10):3945-3955 IF: 4.644


Luque, RM, Cordoba-Chacon, J; Ibanez-Costa, A; Gesmundo, I; Grande, D; Gracia-Navarro, F;


Editorial Material


Research Fundings

National


Contract with Companies

Tena-Sempere, M. Optimization of protocols for functional manipulation of Let-7 miRNA in rodent and in human cell lines. Funding agency: Let-7 EU Project. To Begin in 2015

International

Tena-Sempere, M. Epi-puberty-metabolic control of puberty: role of epigenetic regulatory mechanisms. Funding agency: European Commission. Reference: PI-OF-QA-2010-273034

Tena-Sempere, M. New Frontiers in Reproductive Medicine: Exploring novel mechanisms for the control of puberty and fertility, and their interplay with metabolic homeostasis and diseases associated with overweight. Contribution (Ext) to the MINECO Project (Finnish Distinguished Professorship Program 2015-2020, Academy of Finland

Regional


Tena-Sempere, M. Optimization of protocols for functional manipulation of Let-7 miRNA in rodent and in human cell lines. Funding agency: Let-7 EU Project. To Begin in 2015

Tena-Sempere, M. Proof-of-principle studies for the validation of Gpr54 agonists as therapeutic tool in preclinical (rodent) models of functional hypogonadotropic hypogonadism and ovulatory dysfunction. GPR54-PCOS. Funding agency: Ferring. Reference: CCB.U0000054


Tena-Sempere, M. MicroRNAs and Polycystic Ovary Syndrome: Search of novel biomarkers for the validation of Gpr54 agonists as therapeutenic tool in preclinical (rodent) models of functional hypogonadotropic hypogonadism and ovulatory dysfunction. GPR54-PCOS. Funding agency: Ferring. Reference: CCB.U0000061


Tena-Sempere, M. Physical, chemical and biological characterization of active compounds (BIONATURIS). Funding agency: Bioorganic Research and Services, S.A. Reference: PSS.0044
Metabolism and Adipocyte Differentiation. Metabolic Syndrome

Team Leaders

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Scientific Activity

This research group investigates the cellular and molecular mechanisms that control adipose tissue activity. Thus, this group is focused on the central role of adipose tissue in the regulation of lipid metabolism and in the response to insulin and other hormonal regulators of metabolic homeostasis, as well as on its role as an endocrine organ. Specifically, this group analyzes the different components of adipose tissue, mature adipocytes and the stromal vascular fraction, including the study of preadipocytes and adipogenesis. In particular, this group is interested in the identification and characterization of novel biomarkers related to fundamental processes in adipocytes, including the control of lipid transport, accumulation and mobilization, as well as the signalling/metabolic pathways underlying these processes. In addition, the relationship between cell stress processes (oxidative stress, endoplasmic reticulum stress, inflammation, mechanical stress, fibrosis, etc) is analyzed in in vitro models of insulin resistance. These studies are performed in the context of disorders associated with adipose tissue dysfunction, obesity and lipodystrophy, that result in the development of metabolic disease. Finally, this group also investigates the effects of interventions that improve the metabolic profile of morbidly obese subjects (bariatric surgery, lifestyle or pharmacological interventions). To address these goals, this group employs multiple experimental approaches, including the application of comparative proteomics and lipidomics (including MALDI imaging) to the adipose tissue under different experimental conditions and model organisms. In addition, gene expression studies, protein interaction analyses, confocal microscopy and real-time videomicroscopy, and functional studies (gene overexpression or silencing) using primary cells or cell lines are also carried out.

Keywords

Adipose tissue; adipocyte; lipid metabolism; adipogenesis; proteomics; lipidomics; intracellular trafficking; intracellular signalling; adipokines; receptors; obesity; lipodystrophy; insulin resistance; metabolic syndrome.

Scientific Production

Publications

Original Papers


Review


In Collaborations

Papers

Kulkarni, M; O’Loughlin, A; Vazquez, R; Ma-shayekhi, K; Rooney, P; Greiser, U; O’Toole, E; O’Brien, T; Malagon, Maria M; Pandit, A. Use of a fibrin-based system for enhancing angiogenesis and modulating inflammation in the treatment of hyperglycemic wounds. Biomaterials. 2014; 35(6):2001-2010. IF:8.312

Gutierrez-Mariscal, Francisco M; Yubero-Serrano, Elena M; Rangel-Zuniga, Oriol A; Mann, Carmen; Garcia-Rios, Antonio; Perez-Martinez, Pablo; Delgado-Lista, Javier; Malagon, Maria M; Tinahones, Francisco J; Perez-Jimenez, Francisco; Lopez-Miranda, Jose. Postprandial Activation of P53-Dependent DNA Repair Is Modified by Mediterranean Diet Supplement: Evidence for Coenzyme Q(10) in Elderly Subjects. Journals of Gerontology Series A-Biological Sciences and Medical Sciences. 2014; 69(7):886-893. IF:4.984

Gomez-Delgado, Francisco; Francisco; Alcalá-Díaz, Juan; García-Rios, Antonio; Delgado-Lista, Javier; Ortiz-Morales, Ana; Rangel-Zuniga, Oriol; Jose Tinahones, Francisco; Gonzalez-Guardia, Lorena; Malagon, Maria M; Bellido-Munoz, Enrique; Ordovas, Jose M; Perez-Jimenez, Francisco; Lopez-Miranda, Jose; Perez-Martinez, Pablo. Polymorphism at the TNF-alpha gene interacts with Mediterranean diet to influence triglyceride metabolism and inflammation status in metabolic syndrome patients: From the CORDIOPREV clinical trial. Molecular Nutrition & Food Research. 2014; 58(7):1519-1527. IF:4.909


Rangel-Zuniga, Oriol A, Haro, Carmen; Perez-Martinez, Pablo; Delgado-Lista, Javier; Marin, Carmen; Quintana-Navarro, Gracia M; Tinahones, Francisco J; Malagon, Maria M; Lopez-Segura, Fernando; Lopez-Miranda, Jose; Perez-Jimenez, Francisco; Camargo, Antonio. Effect of trying oils on the postprandial endoplasmic reticulum stress in obese people. Molecular Nutrition & Food Research. 2014; 58(12):2240-2242. IF:4.909


Gabate, Manuel D; Duran-Prado, Mario; Delgado-Niebla, Elena; Garrido, Juan; Rhodes, Simon J; Garcia-Navarro, Socorro; Gracia-Navarro, Francis; Malagon, Maria M; Luque, Raul M; Castaño, Justo P; Porcine sst can physically interact with other somatostatin receptors, and its expression is regulated by metabolic/inflammatory sensors. American Journal of Physiology-Endocrinology and Metabolism. 2014; 306(5):E483-E493. IF:4.088

Imbernon, Monica; Whyte, Lauren; Diaz-Arteaga, Adenis; Russell, Wendy R.; Moreno, Natalia R.; Vazquez, Maria J.; Gonzalez, Carmen R.; Diaz-Ruiz, Alberto; Lopez, Miguel Malagon, Maria M.; Ross, Ruth A.; Dieguez, Carlos; Nogueiras, Ruben. Regulation of GPR55 in rat white adipose tissue and serum LPI by nutritional status, gestation, gender and pituitary factors. Molecular and Cellular Endocrinology. 2014; 383(1-2):159-169 IF:4.241

Camargo, Antonio; Meneses, Maria E.; Perez-Martinez, Pablo; Delgado-Lista, Javier; Rangel-Zuniga, Oriol A.; Marin, Carmen; Almaden, Yolanda; Yubero-Serrano, Elena M.; Gonzalez-Guardia, Lorena; Fuentes, Francisco; Tinahones, Francisco J.; Roche, Helen M.; Malagon, Maria M.; Perez-Jimenez, Francisco; Lopez-Miranda, Jose. Dietary fat differentially influences the lipids storage on the adipose tissue in metabolic syndrome patients. Eur J Nutr. 2014;53(2):617-26. IF:3.84


Research Fundings

National


Regional


Epidemiological Research in Primary Care

Team Leaders

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Research Network on preventive actions and health promotion in primary care (RedIAPP)

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Javier Serrano Merino
Scientific Production

Publications

Original Papers


De Torres, LAP; Ortega, LP; de Torres, CP; Lama, JG; Caro, IO; Moral, RR GrpCorp Estudio ATEM-AP. Efficacy of motivational interviewing for reducing medication errors in chronic patients over 65 years with polypharmacy: Results of a cluster randomized trial. Medicina Clinica. 2014; 143(8):341-348.


In Collaborations

Papers


Keywords

Epidemiology; Preventive Medicine and Public Health; Primary Health Care.

Scientific Activity


Research Fundings

National

Pérala de Torres, LA. Preferences of physicians and patients concerning their participation in the decision-making process and coherence of their actions in real clinical scenarios. Funding Agency: Institute Carlos III Health (ISCIII).Reference:PI11-00771.

Regional

Pérala de Torres, LA. Effectiveness of opportunistic detection of atrial fibrillation in people aged 65 years or more in primary care. Dofa-AP. Project. Funding Agency: Andalusian Progress and Health Foundation (FPS). Reference:PI-0117-2011

Aguado C, Puentes C, Pérala LA. Acceptability and feasibility of opportunistic screening of HIV patients in in the primary care setting in the Spanish national health system. Funding agency: semFYC. Reference: Ref.118/14

Calcium metabolism.
Vascular calcification

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Scientific Activity

This group is focused on different aspects of calcium metabolism and vascular calcification. Our primary area of research is centred on the study of the pathogenetic mechanisms of secondary hyperparathyroidism associated with renal failure. In this sense, this group investigates the parathyroid function, both at cellular and molecular level (PTH synthesis and secretion and cell proliferation) of normal and hyperplastic parathyroid glands.

More recently, this group has incorporated into its research activity both in vivo (experimental models with rats) and in vitro studies (vascular smooth muscle cells) of the mechanisms underlying the development of vascular calcification in chronic kidney disease. Thus, in the context of vascular calcification this group is centred on analysing the role of different agents (with different contents of phosphorus, calcitriol, micronutrients such as magnesium or calcium, calorie diets...) in FGF23 regulation and in cardiovascular disease progression.

This group has opened a new line of research centred on the study of the involvement of bone marrow mesenchymal stem cells in vascular calcification. Basing on a stem cell-based approach, this group analyses the signalling pathways by which vascular calcifications progresses. Mesenchymal stem cells are also used to investigate how the chronic kidney disease or its treatments may affect bone regarding the formation of new osteoblasts. From this line also derives the study of the regulation of bone production of FGF23. The lines of research group listed above involve the study of gene expression of vitamin D, calcium or FGF23 receptors, and the analysis of different intracellular signaling pathways as Wnt/b-catenin, Nocth, Erk, epigenetic modifications, measuring of parameters indicative of osteogenic transdifferentiation, inflammation.

Research derived from each of these lines can lead to the proposal and use of new therapeutic targets for preventing and reversing vascular calcification and associated complications.

Keywords
Calcium; phosphorus; metabolism; parathyroid; calcification; uremia; Mineral metabolism; parathyroid hormone; HPTH2o; vascular calcification; renal failure VDR; CaR. Mesenchymal stem cells; Wnt / beta-catenin.

Scientific Production

Publications

Original

Papers
Montes de Oca, Addy; Guerrero, Fatima; Martinez-Moreno, Julio M; Maqueda, Juan A; Herencia, Carmen; Peralta, Alan; Almaden, Yolanda; Lopez, Ignacio; Aguilera-Tejero, Escolastico; Gundlach, Kristina; Carrascal-Deetjen, Jutta; Rodriguez, Mariano; Munoz-Castaneda, Juan R; Magagnini, Ignacio; Deetjen, Mirjam; Gundlach, Kristina; Steppan, Sonja; Herencia, Carmen; Martinez-Moreno, Julio M; Rodriguez-Ortiz, Maria E; Canalejo, Antonio; Pineda, C; Lopez, I; Guerrero, F; Diez, E; Munoz-Castaneda, J R; Martinez, J; Almaden, Y; Rodriguez, M; Aguilera-Tejero, E; Vitamin E protection of obesity-enhanced vascular calcification in uremic rats. American Journal of Physiology-Renal Physiology. 2014; 306(4):F422-F429

Letter

In Collaborations

Papers
Soriano, Sagrario; Carmona, Andres; Trivino, Francisco; Rodriguez, Mariano; Alvarez-Linelo, Marina; Martin-Malo, Alejandro; Alvarez-Lara, Maria-Antonia; Ramirez, Rafael; Alajzar, Pedro; Carracedo, Julio. Endothelial damage and vascular calcification in patients with chronic kidney disease.American Journal Of Physiology-Renal Physiology.2014;307-11;F1302-1311


Luisa Gonzalez-Casas, M.; Gonzalez-Parras, Emilio; Sanchez-Gonzalez, Carmen; Albalate, Marta; de La Piedra-Gordo, Concepcion; Fernandez, Elvira; Torregrosa, Vicente; Rodriguez, Mariano; Lorenzo; Victor. A lower proportion of circulating active parathyroid hormone in peritoneal dialysis does not allow the pth inter-method adjustment proposed for haemodialysis. Nefrologia. 2014; 34(3):330-341

Gorostidi, Manuel Santamaria, Rafael. Alcazar, Roberto; Fernandez-Fresnedo, Gema; Galceran, Josep M; Goicoechea, Mariana; Oliveras, Anna; Portoles, Jose, Rubio, Esther; Segura, Julian; Aranda, Pedro; de Francisco, Angel L; Dolores del Pino, M; Fernandez-Vega, Francisco; Gorostidi, Jon; Martinez, Isabel; Martinez-Castelao, Alberto; Orte, Luis M; Quereda, Carlos; Rodriguez-Perez, Jose C; Rodriguez, Mariano; Riopele, Luis M. Spanish Society of Nephrology documenton KDIGO guidelines for the assessment and treatment of chronic kidney disease. Nefrologia. 2014; 34(3):302-316

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Review

Evenepoel, Pieter; Rodriguez, Mariano; Ketelers, Markus. Laboratory Abnormalities in CKD-MBD: Markers, Predictors, or Mediators of Disease?. Seminars in Nephrology. 2014; 34(2):151-163
IF:2,942
Levine, BS; Rodriguez, M; Felsenfeld, AJ. Serum calcium and bone: effect of PTH, phosphate, vitamin D and uremia. Nefrologia. 2014; 34(5):658-669
IF:1,442

Research Fundings

National


Rodríguez Portillo, JM. Vascular calcification. Regulation of osteogenic gene expression in vascular smooth muscle cells and smooth muscle mesenchymal progenitor cells via Wnt / Beta-Catenin and SMAD. Funding agency: Institute Carlos III Health (ISCIII). Reference: PI14/00638

To begin in 2015

Regional


Muñoz Castañeda, JR. In vivo and in vitro studies of oxidative stress, inflammation and vascular calcification in chronic kidney disease: application of mesenchymal stem cells to the search for new therapeutic targets. Funding agency: Regional Ministry of Economy, Innovation, Science and Employment (CEICE). Reference: OVI-7925

Contracts with Companies

Rodríguez Portillo, JM. Research support services. Funding agency: University of Cordoba. Reference: PSS.0009

Rodríguez Portillo, JM. Effect of paricalcitol on vascular smooth muscle cells. Funding agency: AbbVieFarmaceutica S.L.U. Reference: PSS.0015

Rodríguez Portillo, JM. Research Program Agreement for measuring AMG 416 activity against isolated rat PTG. Funding agency: Amgen Inc. S.A. Reference: PSS.0020


Rodríguez Portillo, JM. Research Collaboration, License and Option Agreement with Amgen, para la ejecución de investigación para el consorcio SYSKID (Extend). Funding agency: Amgen Inc. S.A. Reference: CCB.UCO0008

Clinical Trials

0034/12: A multicenter, randomized, placebo-controlled double-blind phase III study to assess the efficacy and safety of AMG 416 in the treatment of secondary hyperparathyroidism in patients with chronic renal failure undergoing hemodialysis. PI: Dr/a Rodríguez Portillo, J. Mariano

0002/13: A multicenter, extension, one-arm study to assess the long-term efficacy and safety of AMG 416 in the treatment of secondary hyperparathyroidism in patients with chronic renal failure undergoing hemodialysis. PI: Dr/a Rodríguez Portillo, J. Mariano

0014/13: A multicenter, multiple-dose, two-arm, active-controlled, double-blind, double-masked study to assess the efficacy and safety of oral cinacalcet HCl doses vs. intravenous AMG 416 doses. PI: Dr/a Rodríguez Portillo, J. Mariano

0010/14: A multicenter, single-arm, extension study to assess long-term safety of AMG 416 (Velcalcetide) for secondary hyperparathyroidism in patients with chronic renal failure undergoing hemodialysis. PI: Dr/a Rodríguez Portillo, J. Mariano

International

Cell therapy

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Scientific Activity
The Cell Therapy Unit centres its main activity on clinical research in this area by carrying out different clinical trials. This Unit is currently conducting clinical trials with adult stem cells in autologous bone marrow in acute myocardial infarction, chronic ischemic heart disease, idiopathic dilated cardiomyopathy and chronic critical ischemia of the lower limbs. From 2011, we will be in a position to produce mesenchymal cells in GMP conditions for the initiation of new clinical trials with these cells. At the same time, we are carrying out several translational studies both in vitro and with animal models, particularly in therapeutic angiogenesis of mononuclear bone marrow cells.

Keywords
Stem cells; cell therapy; regenerative medicine; myocardial regeneration; chronic ischemia; therapeutic angiogenesis.

Research Fundings

National
Herrera Arroyo, Inmaculada C. Cell preservation system project. Sponsored by: University of Córdoba. Reference: CCB.031PM


Regional
Cañadillas López, MS. Combination therapy with mesenchymal stem cells and erythropoietin in the treatment of chronic renal failure in an experimental study in rats. Sponsored by: Andalusian Progress and Health Foundation(-SAS). Reference: PI-0141-2011


Participation in other researchs projects from IMIBIC Groups*


Contract with Companies

Herrera Arroyo, Inmaculada C. Agreement with Janssen. Funding agency: Janssen-Cilag, S.A. Reference: PSS.0040

Herrera Arroyo, Inmaculada C. Agreement with Roche (SESIÓN CLÍNIC). Funding agency: Roche. Reference: PSS.0066

Herrera Arroyo, Inmaculada C. Agreement with Eusa Pharma (Professional Training) Funding agency: Eusa Pharma Iberia S.L. Reference: PSS.0068

Herrera Arroyo, Inmaculada C. Conference sponsored by Pfizer. Funding agency: Pfizer. Reference: CCB.0078

Clinical Trials

Participation in other researchs projects from IMIBIC Groups*

*0063/13: An open, single-center, randomized, controlled, phase III clinical trial of intra-arterial infusion of autologous bone marrow mononuclear cells in patients with previously revascularized chronic coronary occlusion and ventricular dysfunction. PI: Dr/a Pan Álvarez-Ossorio, Manuel

*0150/13: A multicenter, randomized, double-blind, placebo-controlled, phase III trial to assess the efficacy of intra-arterial infusion of adult unexpanded autologous bone marrow mononuclear cells on the functional recovery of patients with dilated cardiomyopathy and heart failure. PI: Dr/a Suárez de Lezo Cruz-Conde, José M*
Invasive cardiology and cell therapy

PhD Researchers
Francisco Mazuelos Bellido
Soledad Ojeda Pineda
Manuel Pan Álvarez-Ossorio
Djordje Pavlovic Djurovic
Miguel Ángel Romero Moreno
José Mª Segura Saint-Gerons
Javier Suárez de Lezo Herreros De Tejada

Team Leader
Principal Investigator (PI)
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Publications
13

Impact Factor
45,461

Average Impact Factor
3,497
Scientific Activity
Our group studies the effect of cell therapy in myocardial regeneration. We mainly deal with patients with 2 types of heart pathologies: those with ventricular dysfunction secondary to myocardial infarction, both in acute and in chronic phases, and those with dilated cardiomyopathy of non-ischemic origin.
There are two well-defined lines of study: first, the recovery of ventricular function and its clinical impact; here, we study global and regional contractility, potentiation, diastolic function and coronary reserve. The other line looks at the influence of biological parameters (cell lines, migration, distribution, nesting capabilities, etc.) in functional improvement. All the patients enrolled in the various studies are followed up periodically from the clinical, ultrasonic, ergometric and angiographic viewpoints.

Keywords
Ventricular dysfunction; cell therapy; stem cells; acute myocardial infarction and dilated cardiomyopathy.

Scientific Production
Publications
Original Papers
Ojeda, S; Pan, M; Martin, P; Mazuekos, F; Suarez de Lezo, J; Romero, M; Segura, J; Pavlovic, Djordje; Medina, A; Suarez de Lezo, J. Immediate Results and Long-Term Clinical Outcome of Patients With Unprotected Distal Left Main Restenosis The CORPAL Registry (Cordoba and Las Palmas). Jacc-Cardiovascular Interventions. 2014; 7-2;222-231 IF:7.44

Pani, M; Medina, A; Romero, M; Ojeda, S; Martin, P; de Lezo, JS; Segura, J; Mazuekos, F; Novoa, J; de Lezo, JS. Assessment of side branch predilation before a provisional T-stent strategy for bifurcation lesions A randomized trial. American Heart Journal. 2014; 168-3;374-380 IF:4.555

Gamez-Lopez, Antonio L; Bonilla-Palomas, Juan L; Anguita-Sanchez, Manuel; Moreno-Conde, Mariant; Lopez-Ibanez, Cristina; Alhambra-Exposito, Rosa; Castillo-Dominguez, Juan C; Villar-Raez, Antonia; Suarez de Lezo, Jose. Rationale and Design of PICONIC Study: Nutritional Intervention Program in Hospitalized Patients With Heart Failure Who Are Malnourished. Revista Espanola de Cardiologia. 2014; 67-4;277-282 IF:3.342

Pan, Manuel; Burzotta, Francesco; Trani, Carlo; Medina, Alfonso; Suarez de Lezo, Jose; Niccoli, Giampaolo; Romero, M; Porto, Italo; Mazuekos, Francisco, Leon, Antonio Maria; Martin, Pedro; Coluccia, Valentina; Suarez de Lezo, Javier; Ojeda, Soledad. Three-year follow-up of patients with bifurcation lesions treated with sirolimus- or everolimus-eluting stents: SEA-side and CORpal cooperative study. Revista Española de Cardiología. 2014; 67-10;1007-1012 IF:3.342


Rodriguez-Esteban, Marcos; Anguita, Manuel; Miranda-Montero, Sara; Carlos Castillo, Juan; Alvarez-Acosta, Luis; Castillo, Francisco; Llorens-Leon, Rafael; Suarez-de Lezo, Jose. Invasive endocarditis in two Spanish university hospitals in different geographical locations with and without a cardiac surgery department. Enfermedades Infecciosas y Microbiologia Clinica. 2014; 32-5;297-301 IF:1.881

Lopez-Aguilar, Jose; Mesa-Rubio, Dolores; Ruiz-Oritz, Martin; Delgado-Ortega, Monica; Villanueva-Fernandez, Elena; Romo-Pena, Elia; Pan Alvarez-Ossorio, Manuel; Suarez de Lezo, Jose. Mitral regurgitation during transcatheter aortic valve implantation: the same complication with a different mechanism. Journal of Invasive Cardiology. 2014; 26-11;603-608 IF:0.824

Editorial Material
Alfonso, F; Pan, M. Do We Know How to Treat Bifurcation Coronary Lesions?. Revista Española de Cardiología. 2014; 67-10;790-793 IF:3.342

Pan, M; de Lezo, JS. Next-generation Transcatheter Aortic Valves An Opportunity to Expand Therapeutic Indications? Revista Española de Cardiología.2014; 67(11);878-880 IF:3.342

Letter
Martin, Monica; Mesa, Dolores; Carrasco, Francisco; Ruiz, Martin; Delgado, Monica; Suarez de Lezo, Jose. Mitral Regurgitation After MitraClip: Impact of Mitral Regurgitant Orifice Morphology Evaluated by Three-dimensional Echocardiography. Revista Española de Cardiología. 2014; 67-5;581-582 IF:3.342

In Collaborations
Papers
Lassen, JF; Holm, NR; Stankovic, G; Lefevre, T; Chiefto, A; Hildick-Smith, D; Pan, M; Darremont, O; Albiero, R; Ferenc, M; Louvard, Y. Percutaneous coronary intervention for coronary bifurcation disease consensus from the first 10 years of the European Bifurcation Club Meetings. Eurointervention. 2014; 10-5;545-560 IF:3.758

Research Fundings
National

Regional

Contract with Companies
Suarez de Lezo Cruz-Conde J. Agreement with Medtronic. Start up Study “MARE”.Reference: MARE.Funding agency: Medtronic CareLink Network.

Clinical Trials
0170/09: A clinical trial of the feasibility, safety and efficacy of cardiac resynchronization therapy and mononuclear bone marrow stem cell intracoronary transplantation in patients...
with acute myocardial infarction.
P.I. Dr/a Suárez de Lezo Cruz-Conde, José Ma

0287/09: A phase II clinical trial on the effect of intracoronary infusion of bone marrow mononuclear cells on functional recovery in patients with previous chronic myocardial and severely depressed left ventricular function.
P.I. Dr/a Romero Moreno, Miguel Angel

0063/13: An open, single-center, randomized, controlled, phase III clinical trial of intra-arterial infusion of autologous bone marrow mononuclear cells in patients with chronic coronary occlusion and ventricular dysfunction.
P.I. Dr/a Pan Álvarez-Ossorio, Manuel

0150/13: A multicenter, randomized, double-blind, placebo-controlled, phase III trial to assess the efficacy of intra-arterial infusion of adult unexpanded autologous bone marrow mononuclear cells on the functional recovery of patients with dilated cardiomyopathy and heart failure.
P.I. Dr/a Suárez de Lezo Cruz-Conde, José Ma

1309: Post-commercialization surveillance study of VPT Melody™.
P.I. Dr/a Suárez de Lezo Cruz-Conde, José Ma

1681: European study of coronary bifurcations: a randomized study to compare the provisional stenting strategy vs the systematic implantation of two stents in true bifurcation lesions located in large vessels.
P.I. Dr/a Pan Álvarez-Ossorio, Manuel
Cell biology in hematology. Hypercoagulability

Team Leader

Principal Investigator (PI)
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Spanish Myelodysplastic Syndrome Registry (Resmd) (Collaborator)

Co-Principal Investigator (CO-PI)
Francisco Velasco Gimena
Observational Immune Tolerance Induction research program (ObsITI) (Collaborator)
PAIDI CTS-620 Scientific Group

PhD Researchers
Carmen Martin Calvo
Jose R Molina Hurtado
Rafael Rojas Contreras
Josefina Serrano Lopez
Juana Serrano Lopez

Researchers
Miguel A Alvarez Rivas
Pedro Gomez Garcia
Victor Arqueros Martinez
(Jcollaborator)
Javier Casaño Sánchez (Collaborator)
Estefania Garcia Torres
(Collaborator)
Scientific Activity
Our cell biology group in Hematology works in two areas:
1. The immunological mechanisms of the phenomena of graft versus host disease and graft versus leukemia occurring after hematopoietic transplantation for hematologic malignancies. This study covers antigen presenting cells, lymphocyte effectors and regulatory populations in quantitative and functional studies.
2. In addition, the group studies the mechanisms of leukemogenesis through the study of normal and leukemic primitive quiescent precursors (GO, Side population). The main methods used are cell culture, multiparameter flow cytometry with cell sorting and complete Western blot proteomics for intracellular signalling proteins.

The group also studies the mechanisms of hypercoagulability associated with oncohematologic processes. Its members participate in groups of the region (GASMD, GALA, GNL) of the country (PETHEMA, SEHOP, GETH, RESMD) and in the international group focused on transplantation (EBMT) for the study and treatment of hemopathies in children and adults.

Keywords
Immunology of hematopoietic transplantation; Cell biology of acute leukemias.

Scientific Production
Publications
Original Papers
Sanchez-Garcia, Joaquín; del Canizo, Consuelo; Lorenzo, Ignacio; Nomdedeu, Marta; Benet, Lino; Elías, Raquel; Xicoy, Blanca; Valcarcel, Dési; Benet,Marco-Beltes, Victor; García-Pintos, Marta; Osorio, Santiago; Tormo, Marc; Baile, Alicia; Cervero, Carlos; Ramos, Fernández; Diez-Campello, María; Such, Esperanza; Arrizabalaga, Beatriz; Azaceta, Gemma; Bar- gay, Joan; Arià, Maria J.; Falantes, Jose; Serrano, Josefina; Saenz, Guillermo F. European Group on Immunology of Hematopoietic Transplantation. J. Immunol. 2014; 192(1):25-33.
IF:5.868

Sanchez-Garcia, Joaquín; del Canizo, Consuelo; Lorenzo, Ignacio; Nomdedeu, Marta; Benet, Lino; Elías, Raquel; Xicoy, Blanca; Valcarcel, Dési; Benet, Marco-Beltes, Victor; García-Pintos, Marta; Osorio, Santiago; Tormo, Mar; Baile, Alicia; Cervero, Carlos; Ramos, Fernández; Diez-Campello, María; Such, Esperanza; Arrizabalaga, Beatriz; Azaceta, Gemma; Bar- gay, Joan; Arià, Maria J.; Falantes, Jose; Serrano, Josefina; Saenz, Guillermo F. Myelodysplastic: Multivariate time-dependent comparison of the impact of lenalidomide in lower-risk myelodysplastic syndromes with chromosome 5q deletion. British Journal of Haematology. 2014; 166(2):189-201.
IF:4.959

In Collaborations
Papers
Luis Pinana, Jose; Sanz, Jaime; Picardi, Alessandra; Ferra, Christelle; Martino, Rodrigo; Barba, Pere; Gonzalez-Vicent, Marta; Jesus Pascual, Maria; Martin, Carmen; Verdegueur, Amparo; Diaz de Heredia, Cristina; Montesinos, Paul, Ribera, Jose-Maria; Sanz, Miguel; Arcese, William; Sanz, Guillermo G. European Group on Immunology of Hematopoietic Transplantation. J. Immunol. 2014; 192(1):25-33.
IF:5.868

Bennett, Teresa A.; Montesinos, Paul; Moscar- do, Federico; Martinez-Duarton; David; Marti- nez, Joaquín; Sierra, Jorge; Garcia, Raimundo; Perez De Oteyza, Jaime; Fernandez, Pascual; Serrano, Josefina; Fernandez, Angeles; Herre- ra, Pilar; Gonzalez, Atalaya; Bethencourt, Concepcion, Rodriguez-Macias, Gabriela; Alonso, Arancha Vera, Juan A.; Navas, Begona; Lavilla, Esperanza; Lopez, Juan A.; Jimenez, Santiago; Simiele, Adriana; Vidriales, Belen; Gonzalez, Bernardo; J. Buregale, Carmen, Rivas, Jose A. Hernandez Massacano, Raul Cordoba, Beutis- ta, Guimard; Perez Simon, Jose A.; de la Fuente.

IF:1.929

IF:2.692

IF:3.96

IF:3.477

Review
IF:1589

Letter
IF:3.466

Contracts with Companies


Clinical Trials
0290/09: A multicenter, randomized, double-blind, placebo-controlled phase III study of panobinostat in combination with bortezomib and dexamethasone in patients with relapsed multiple myeloma. PI: Dr/a Alvarez Rivas, Miguel Angel

0167/09: A multicenter, randomized, dou- ble-blind, phase III study of Revlimid (lenalido- mida) versus placebo in patients with low-risk myelodysplastic syndrome (low and interme- diate-1 IPSS) with impaired 5q-and anemia without transfusion requirements. PI: Dr/a Sánchez Garcia, Joaquín

0112/10: A multicenter, randomized, open-la- bel, phase II study of VidaZo (Asazicitidine) ver- sus supportive therapy in patients with low- risk MDS (low and intermediate-1IPSS) without
5q-deletion and anemia requiring transfusion. PI: Dr/a Sánchez García, Joaquín

0209/10: Maintenance treatment with 5-Azacitidine in patients with acute myelogenous leukemia ineligible for intensive treatment with partial or complete response to induction chemotherapy. PI: Dr/a Serrano López, Josefina

0070/11: A multicenter, prospective, open-label, single-arm phase I-II clinical trial to analyze the induction treatment with a combination of fludarabine, idarubicin, cytarabine, G-CSF and plerixafor for the treatment of young patients with recurrent or resistant LM. PI: Dr/a Serrano López, Josefina

0279/13: Intergroup trial for children or teens with LNH-B or LLA-B (LLA-L3): Evaluation of the efficacy and safety of Rituximab for high-risk patients. PI: Dr/a Gómez García Pedro

0020/12: Ofatumumab as part of the reduced intensity conditioning system (RIC) in patients at high risk of developing non-Hodgkin’s lymphoma B receiving allogeneic hematopoietic stem cell transplantation. PI: Dr/a Martin Calvo, Ma Carmen

0293/12: A randomized, double-blind, placebo-controlled phase III study of the efficacy and safety of oral azacitidine plus the best supportive treatment vs. the best supportive treatment and maintenance therapy in patients with acute myelogenous leukemia in complete remission. PI: Dr/a Serrano López, Josefina

0008/13: An open, randomized, prospective, two-arm, phase III study to assess the treatment-free remission rate in patients with Ph-positive chronic myeloid leukemia (CML) after two treatments of different durations. PI: Dr/a Molina Hurtado, José Ramón

0123/13: Phase 3 randomized, double-blind, placebo-controlled study to evaluate the protective efficacy and safety of a therapeutic vaccine, ASp013, recipients seropositive for cytomegalovirus (CMV) underwent allogeneic cells. PI: Dr/a Rojas Contreras, Rafael

0148/13: Multicenter phase II trial study, international, open-label, single treatment group to assess the safety of obinutuzumab as a single agent or in combination with chemotherapy in patients with lymphatic leukemia relapsed / refractory chronic. PI: Dr/a Molina Hurtado José Ramón

0185/13: An open, phase III trial to assess the safety of changing intravenous rituximab to subcutaneous rituximab in the course of first-line treatment of CD20+ Follicular and Diffuse Non-Hodgkin’s Large B-Cell Lymphoma. PI: Dr/a Sánchez García, Joaquín

0202/13: A randomized, double-blind, phase 3 study to assess the efficacy and safety of rituximab plus lenalidomide (G2-S013) vs. rituximab plus placebo in subjects with indolent relapsed / resistant lymphoma. PI: Dr/a Sánchez García, Joaquín

0041/14: Clinical trial, phase III, case series on the reversal of the anticoagulant effect of dabigatran, by intravenous administration of 5.0 g of idarucuzumab (BI 655 075) in patients treated with dabigatran etexilate. PI: Dr/a Velasco Gimena, Francisco

0121/14: A Phase III, randomized, placebo-controlled, double-blind maintenance treatment with oral citrate ixazomib (MLN9708) in patients with multiple myeloma after autologous stem cell transplantation. PI: Dr/a Alvarez Rivas, Miguel Ángel

0148/14: Phase III, randomized, open, randomized, placebo-controlled study of azacitidine with or without binnapant with an open run-in phase one group in patients with myelodysplastic syndrome or highest risk chronic myelomonocytic leukemia. PI: Dr/a Sánchez García, Joaquín

0171/14: A Phase II, randomized, double-blind, placebo-controlled study of azacitidine with or without binnapant with an open run-in phase one group in patients with myelodysplastic syndrome or highest risk chronic myelomonocytic leukemia. PI: Dr/a Serrano López, Josefina

1657: Effectiveness and safety of liposomal amphotericin B in combination with voriconazole in the treatment of invasive fungal infection caused by filamentous fungi in immunocompromised paediatric patients. PI: Dr/a Gómez García, Pedro

1709: Study of the correlation between ex vivo response to anticancer drugs and their effectiveness in treating acute myeloid leukemia. PI: Dr/a Serrano López, Josefina

1959: Hematopoietic stem cell transplantation from haploidentical donors with in vitro selective depletion of allo-reactive lymphocytes in patients with high-risk hematological malignancies. PI: Dr/a Martín Calvo, Ma Carmen

1949: An observational, multicenter study of the guidelines for recombinant factor IX treatment in patients with hemophilia B in Spain. Observation period 1 year. PI: Dr/a Velasco Gimena, Francisco

2109: An observational, post-authorization study to assess the evolution in regular clinical practice of patients newly diagnosed with myelodysplastic syndrome (MDS) or myelomonocytic leukemia (MML) according to the time of treatment initiation. PI: Dr/a Sánchez García, Joaquín

2204: A multicenter, retrospective study to describe the effectiveness and safety of clofarabine as compassionate use treatment in adult patients with relapsed/refractory acute leukemia prior to hematopoietic stem cell transplantation. PI: Dr/a Serrano López, Josefina

2277: Modelling treatment and disease burden of chronic lymphocytic leukemia to determine the treatment of choice in the United Kingdom, Italy and Spain. PI: Dr/a Molina Hurtado, José Ramón

2257: A study to validate an ex vivo individualized test for acute lymphoblastic leukemia. PI: Dr/a Serrano López, Josefina

2365: A retrospective study to evaluate the subcutaneous administration of bortezomib in the first-line treatment of patients with multiple myeloma (MM) who are not candidates for autologous hematopoietic stem cell transplantation (VERSA STUDY). PI: Dr/a Alvarez Rivas, Miguel Ángel

2512: Proyecto para actualizar el estudio de hemofilia congénita en España (PUCHS). Estudio multicéntrico, no intervencionista y retrospectivo de la prevalencia de la hemofilia en España. PI: Dr/a Velasco Gimena, Francisco

2570: Estudio observacional prospectivo para identificar los aspectos clínicos que conducen a la toma de decisiones terapéuticas en pacientes con mielofibrosis. PI: Dr/a Molina Hurtado, José Ramón

2634: Estudio de caracterización farmacológica ex vivo de tratamientos en hemopatías malignas, mediante uso de la plataforma automatizada de citometría de flujo ExviTch. PI: Dr/a Sánchez García, Joaquín

2641: Registro posautorización no intervencionista de pacientes con mieloma múltiple recibidantes y refractarios tratados con pomalidomida, que han recibido al menos dos tratamientos previos, incluyendo lenalidomida y bortezomib, y que hayan experimentado una pauta de tratamiento con hematopoiesis stem cell transplantation (VERSA STUDY). PI: Dr/a Álvarez Rivas, Miguel Ángel
Pathophysiology of the endocrine system of vitamin D. Biotechnology and aging

Team Leader

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Thematic Network of Research Partnerships on Aging-Frailty (RETICEF).
PAIDI CTS-413 Scientific Group

PhD Researchers
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Rafael Cuenca Acevedo
Jose María Mata Granados
Raquel Santiago Mora
Ignacio Serrano Alferez

Publications: 2
Impact Factor: 6.28
Average Impact Factor: 3.14
Scientific Activity
Our group studies:

1. Osteoporosis: related risk factors, genetics and epidemiology. Endocrine system of vitamin D, other liposoluble vitamins, carotenoids, fatty acids related to osteoporosis and aging.

2. Differentiation of mesenchymal stem cells into osteoblasts, adipocytes or vessels. Study of genes and related factors. Its application in human clinical medicine.
   a) Evaluation of compounds that may influence the differentiation of mesenchymal stem cells to osteoblasts and adipocytes. By following this line, we intend to evaluate the differentiation capacity of mesenchymal stem cells into adipocytes and osteoblasts in drugs and natural compounds in order to determine what may favour or hinder the formation of new bone. The results obtained in this area may open up new therapeutic strategies to prevent and counter osteoporosis.
   b) Studies of gene expression of genes related to osteogenesis and adipogenesis. The aim of this research is to identify human stem cells, which are genes involved in the differentiation into osteoblasts and adipocytes, and sociated with osteoporosis. To achieve this, we hope to carry out functional genomics studies to compare gene expression profiles between stem cells originating from both osteoporotic and non-osteoporotic women.

Keywords
Osteoporosis; vitamin D; carotenoids; fatty acids, human mesenchymal stem cells (MSCh) of adult adipocytes; osteoblasts; polyphenols; gene expression; proteomics; nutrigenetics; and nutrigenomics.

Scientific Production
Publications

Original Papers
Casado-Diaz, Antonio; Ferreiro-Vera, Carlos; Priego-Capote, Feliciano; Dorado, Gabriel; Dolores Luque-de-Castro, Maria; Manuel Quesada-Gomez, Jose. Effects of arachidonic acid on the concentration of hydroxyeicosatetraenoic acids in culture media of mesenchymal stromal cells differentiating into adipocytes or osteoblasts. Genes and Nutrition. 2014; 9(1):375 IF:3,419 Q:1 D:3

In Collaborations
Papers

Regional

Research Fundings
National

Quesada Gómez, JM. RETICEF. Funding agency: Carlos III Health Institute (ISCIII). Reference: RD12/0043/0028

Contract with Companies
Quesada Gómez JM. Collaboration agreements with Lilly SA (Formation). Funding Agency: LILLY, S.A. Reference: CCB.0079
Translational research in surgery of solid organ transplants

PhD Researchers
Rében Ciria Bru
Manuel LevaVallejo
Pedro López Cillero
Francisco Cristobal Muñoz Casares
Juan Carlos Pozo Laderas
Juan Carlos Regueiro Lopez
Juan Carlos Robles Ariza
Sebastián Rufián Peña
Juan Ruiz Rabelo

Team Leader
Principal Investigator (PI)
Francisco Javier Briceño Delgado
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Others Researchers
Alvaro Arjona Sanchez
Jesús Jimenez Gomez
César Díaz Lopez

Post-PhD Researchers
Maria Pleguezuelo Navarro
Scientific Activity

Our group studies aspects related to the increase in the donor pool and technical innovations in solid organ transplants. It also aims to establish guidelines to improve the use of expanded criteria donors, and to develop and implement improvements in surgical techniques and technological innovations in the transplant of solid organs.

Keywords
Liver transplant; pancreas transplant; kidney transplant; lung transplant; heart transplant; living donor transplantation; pediatric transplantation; split transplantation; expanded criteria donors.

Scientific Production

Publications

Original
Papers

Briceno, Javier; Cruz-Ramirez, Manuel; Prieto, Martin; Navasa, Miguel; Ortiz de Urbina, Jorge; Ortiz, Rafael; Gomez-Bravo, Miguel-Angel; Oterro, Alejandro; Varo, Evaristo; Tome, Santiago; Clemente, Gerardo; Barasnes, Rafael; Barcena, Rafael; Quereras-Mons, Va. Use of artificial intelligence as an innovative donor-recipient matching model for liver transplantation: Results from a multicenter Spanish study. Journal Of Hepatology 2014.61-5;1020-1028 IF:10,401 Q:1 D:1 IF:2,829 Q:2


Medina, F3. Cifuentes, J. A. Medina Fernandez, Francisco Javier; Espinosa Jimenez, Dionisio; Lucque Molina, Antonio; Lopez Giller, Pedro; Rufian Pena, Sebastian. Transdisaplymphomatous approach for hepatopulmonary metastatic cases that support its reliability and safety. Cirugia Española 92-4;160-82 IF:0.879 Q:0 D:3

Letter

Medina Fernandez, Francisco Javier; Munoz-Casares, Francisco Cristobal; Arjona-Sanchez, Alvaro; Casado-Adam, Angelia; Rufian Pena, Sebastian. Pentonial gastrosis: role of cytoreductive surgery and peripercutaneous intraperitoneal chemotherapy. Cirugia Española 2014.224-8;249 IF:0.209 Q:0 D:3

Ayllon-Teran, MD; Heaton, N.; Ciria, R.; Hervas-Martinez, C.. An organ allocation system for liver transplantation under normo or subnormo thermic machine perfusion. Transplantation 2014.61-5;1020-1028 IF:10,401 Q:1 D:1 IF:2,829 Q:2

Fernandez-Peralbo, M. A.; Pregno-Capote, F. Luque de Castro, MD; Casado-Adam, A. Arjona-Sanchez, A. Munoz-Casares, F. OLC-MS/MS quantitative analysis of paclitaxel and its major metabolites in serum, plasma and tissue from women with ovarian cancer after intraperitoneal chemotherapy. Journal Of Pharmaceutical And Biomedical Analysis 2014.91-3;131-137 IF:2,679 Q:2

Briceno, J. Ciria, R. Limits for Adult Liver Donation in Spain. Transplantation Proceedings 2014.46-9;3078-3081 IF:0.384 Q:3

Arjona-Sanchez, A; Sanchez-Hidalgo, JM; Ciria-Bru, R; Munoz-Casares, FO; Ruiz-Rabelo, FO; Gallardo, R; Oterro, R; Luque, A; Rufian-Pena, S; Lopez-Olerr, P; de la Mata, M. Briceno-Delgado, FJ. Prediction Model To Discard A Prior Liver Allografts. Transplantation Proceedings 2014.46-9;3078-3078 IF:0.384 Q:3

Alonso-Gomez, Jaime; Teresa Caro-Cuenca, Maria; Membries-Obrero, Antonio. Ortega-Sales, Rosa Maria Gallardo-Valverde, Jose; Ortiz-Rodriguez, Rafael; Rufian Pena, Sebastian. Perianal alveolar soft-part sarcoma: a rare case. Central European Journal Of Medicine 2014.224-8;249 IF:0.209 Q:0 D:3

Editorial Material

Medina Fernandez, Francisco Javier; Espinosa Jimenez, Dionisio; Lucque Molina, Antonio; Lopez Giller, Pedro; Rufian Pena, Sebastian. Trans dispositional approach for hepatopulmonary metastatic cases that support its reliability and safety. Cirugia Española 92-4;160-82 IF:0.879 Q:0 D:3

In Collaborations

Papers

Sapisochin, G.; Rodriguez de Lope, C; Gastaca, M; Ortiz de Urbina, J; Lopez-Andujar, R; Palacios, F; Ramos, E; Fabregat, J; Castronoguin, J; Varona, M; Otero, A; Perez, A; Pons, J; Gonzalez-Dieguez, M; Rodriguez, M; Otero, A; Vazquez, M; A; Zozaya, G; Herrera, J; Sanchez Anoton, G; Perez, B; Ciria, R; Rufian, S; Fundora, Y; Yorn, J; Quiberteau, A; Blanco, G; Varona, M; A; Barrera, M; A; Suarez, M; A; Santoyo, J; Brux, J; Charco, R. Intrahepatic Cholangiocarcinoma or Mixed Hepatocellular-Cholangiocarcinoma in Patients Undergoing Liver Transplantation. Annals Of Surgery 2014.239-6;934-952 IF:7.588 Q:0 D:1

Sapisochin, G.; Rodriguez de Lope, C; Gastaca, M; Ortiz de Urbina, J; Suarez, M; A; Santoyo, J; Castronoguin, J; Varona, E; Lopez-Andujar, R; Palacios, F; Sanchez Anoton, G; Perez, B; Quiberteau, A; Blanco, G; Gonzalez-Dieguez, M; Rodriguez, M; A; Varona, M; A; Barrera, M; A; Fundora, Y; Yorn, J; A; Ramos, E; Fabregat, J; Ciria, R; Rufian, S; Otero, A; Vazquez, M; A; Pons, J; A; Parilla, P; Zozaya, G; Herrera, J; J; Charco, Brux, J. Very Early’’ Intrahepatic Cholangiocarcinoma in Cirrhotic Patients: Should Liver Transplantation Be Reconsidered in These Patients? American Journal Of Transplantation 2014.14-3;660-667 IF:6.199 Q:0 D:1

Perez-Ortiz, M.; Cruz-Ramirez, M; Ayllon-Teran, M; A; Heaton, N; Ciria, R; Hervas-Martinez, C. An organ allocation system for liver transplantation based on ordinal regression. Applied Soft Computing 2014-4;88-98 IF:2.679 Q:0 D:1

Research Fundings

National

Ciria Bru, R.Condition mechanisms discarded teatologic liver grafts after cold storage by normothermic or subnormothermic perfusion. Fundacion Agency. Institute Carlos III Health (ISCIII). Reference PI14/01559


Regional

Ciria Bru, R. The biliary tract in liver transplantation: A global study measuring O2 tissue microvoltage, microflowmetry and histology of the


Contracts with Companies

Briceño Delgado, FJ. Stand in course on advanced liver surgery. Funding agency: Covidien-Spain, S.L. Reference: PSS.0041

Clinical Trials

0195/09: Ensayo clínico multicéntrico prospectivo controlado y aleatorizado de no inferioridad del tratamiento del cáncer de recto T2 - T3s (superficial) No, Mo mediante quimioterapia preoperatoria y microcirugía endoscópica transanal (TEM) versus excisión total del mesorrecto (ETM). PI: Dr/a Díaz López César

0286/09: An open, multicenter, randomized, phase III trial on the therapeutic use of intraportal infusion of autologous bone marrow mononuclear cells as liver regeneration enhancer prior to liver resection. PI: Dr/a Rufián Peña, Sebastián

0239/11: Role of intraoperative intraperitoneal paclitaxel chemotherapy in radical surgical treatment of ovarian-origin peritoneal carcinomatosis: hyperthermia versus normothermia. PI: Dr/a Rufián Peña, Sebastián

0218/14: Efficacy and safety of early postoperative intraperitoneal chemotherapy (EPIC) with paclitaxel in the radical surgical treatment of ovarian peritoneal carcinomatosis. PI: Dr/a Muñoz Casares, Francisco C.

1707: A study to assess the feasibility, validity and reliability of the three-day voiding diary in women attending functional urology and urodynamics units: DM 3D Study. PI: Dr/a Leva Vallejo, Manuel
Applications of Artificial Vision

Team Leader

Principal Investigator (PI)
Rafael Medina Carnicer
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PAIDI TIC-161 Scientific Group

PhD Researchers
Angel Carmona Poyato
Nicolás Luis Fernández García
Juan Luis Garrido Castro
Francisco José Madrid Cuevas
Manuel Jesús Marín Jiménez
Rafael Muñoz Salinas
Enrique Yeguas Bolívar

Publications: 10
Impact Factor: 17.98
Average Impact Factor: 1.798
Scientific Activity
The main line of research of this group is focused on fundamental problems in artificial vision, which supports all the technology developed in the lines applied.

The activity of this group is centred on some basic topics and results in the publication of papers in impact reviews. The topics are as follows: Unsupervised segmentation of scenes, Tracking, unsupervised recognition of objects in a scene, Volumetric Reconstruction, Augmented Reality, Virtual Reality.

This group develops practical lines of research related to 2D and 3D Vision Systems Design for specific applications in biomedical or industrial environments. The latest activities of the Group were centred on unsupervised evaluation of human mobility, automatic calculation of the geometry of irregular objects for an optimal waste storage, fall risk prediction in the elderly and the development of automated X-ray analysis systems supporting the diagnosis of any type disease.

Keywords
Unsupervised Segmentation; Edge detection; Tracking; Object Recognition 3D-Vision; Augmented Reality; Gesture Recognition.

Scientific Production
Publications
Original Papers

IF:2.679


IF:1.627


Research Fundings
National

Participation in other research projects from IMIBIC Groups
Medina Carnicer, R (Co-IP). Collaboration in the development of the “BROCA” project (development of a surgical robot with 3D vision). Requena Tapia, MJ (IP). BROCA Project. Funding agency: Collaboration Agreements between MINECO (FEDER) and the University of Cordoba for the implementation of a biomedical research project. Reference: CCB.029PM

Contracts with Companies
Medina Carnicer, R. Implementing a 3D vision system (SVCS) for determining irregular object geometries in CN. Jose Cabrera. Funding agency:Enresa
Genetics and behavioural diseases

Team Leader

Principal Investigator (PI)
Manuel Ruiz Rubio
getrurum@uco.es
PAIDI BIO-272 Scientific Group

PhD Researchers
Encarna Alejandre Duran
Francisco José Alós Cívico
Rafael Burgos Marín
Francisco García-Torres
Juan Antonio Moriana Elvira
Ma Araceli Sanchez Raya
Ma Salud Jiménez Romero

Post-PhD Researchers
M Del Mar Gamez Del Estal

Pre-PhD Researchers
Jaime Osuna Luque

Other members of the Group
(Others Researchers, Nursing, Technical, and Administrative Staff)
Teresa Guijarro Granados
Pilar Martin Borreguero
Ma Auxiliadora Romero Balsera
Sara Gomez Melero
**Scientific Activity**

Significant progress is being made nowadays in our understanding of the genetic basis of autism. Many of the genes involved encode proteins which are involved in synaptic function. Caenorhabditis elegans is an organism which constitutes an ideal model for studying synapse interactions because it only has about 300 neurons, and these are well characterized. In C. elegans there are genes which are orthologous to the human genes involved in autism, which encode proteins involved in the synapse. We have characterized mutants in some of these genes by observing changes in behaviour, as well as in response to chemical compounds that interfere with neurotransmitters, such as gamma-aminobutyric acid (GABA) or acetylcholine. The use of C. elegans as a model organism allows us to create an experimental setting that facilitates the genetic study of synaptic components. With the results obtained, our long term aim is to extrapolate them to humans and be able to explain the neurobiological mechanisms involved in the etiology of autism and other developmental diseases.

On the other hand, the members of the Unit for Child and Adolescent Mental Health (USMI-J) are conducting a detailed phenotypic analysis of a sample of patients diagnosed with autism in order to establish distinctive features and to determine whether autism can be associated in the future with specific genetic or environmental alterations.

**Keywords**
- Autism
- pervasive developmental disorders
- neuronal synapses
- postsynaptic density
- C. elegans as a model organism in synaptic function

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**Scientific Production**

**Publications**

**Original Papers**


Jiménez, M.S. Impact of cochlear implants on auditory integration: Results and predictive factors in a group of 116 deaf Spanish children. Revista de Logopedia, Foniatría y Audología 2014; 34: 4-16

**Research Fundings**


To Begin in 2015

**Contracts with Companies**

Ruiz-Rubio, M. Caenorhabditis elegans as models of neurological diseases. Funding agency: Canvax Biotech S.L. Reference: INTER.0002

Sánchez-Raya, A.; Luque, B. y Moriana, J.A. Agreement with the Consejería de Igualdad, Salud y Políticas Sociales for the creation of the Early Child Care Center (Centro de Atención Infantil Temprana) of the University of Cordoba.
Metabolomics. Identification of bioactive components

PhD Researchers
Carlos Ferreiro Vera
Maria Isabel Orozco Solano
Post-PhD Researchers
Monica Calderón Santiago
Veronica Sanchez De Medina Baena
Pre-PhD Researchers
Maria Pilar Delgado De La Torre
Mª del Mar Delgado Povedano
Maria Auxiliadora Fernández Peralbo
Antonio Mena Bravo
Maria Molina Calle
Asunción López Bascón
Carlos Augusto Ledesma Escobar
Angela Peralbo Molina

Team Leader
Principal Investigator (PI)
Mª Dolores Luque de Castro
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PAIDI FQM-227 Scientific Group

Emerging Researcher (ER)
Feliciano Priego Capote
Scientific Activity

Our scientific activity is focused on the study of the mechanisms involved in maintaining genome and epigenome stability. Our group has found genetic and biochemical evidence for the existence of a mechanism for active demethylation of DNA in plants. We have identified a family of proteins, whose prototype is ROS1 and DME, which exhibit mcmtoxy-5-DNA glycosylase activity, and initiate the deletion of 5-mec by a mechanism analogous to the Base Excision Repair (BER). Using genetic and molecular approaches, we have characterized in detail the biochemical activity of this new family of enzymes. In addition we have identified other proteins involved in this mechanism of epigenetic reprogramming. We are currently investigating the relevance of the base repair system in the maintenance and control of genetic and epigenetic information. In addition, we intend to analyze the relationship between this new route for demethylation of DNA and different modifications in the structure of chromatin. Finally, we are exploring the feasibility of using ROS1 and DME to initiate a controlled demethylation of DNA in human cells.

Keywords
Genetics; Epigenetics; Mutagenesis; DNA repair; DNA methylation; gene regulation.

Scientific Production

Publications

Original Article

Calderon-Santiago, Monica; Priego-Capote, Feliciano; Luque de Castro, Maria D. Enhanced Detection and Identification in Metabolomics by Use of LC-MS/MS Untargeted Analysis in Combination with Gas-Phase Fractionation. Analytical Chemistry. 86-15;7558-7565 IF:5.825

Priego-Capote, Feliciano; Ramirez-Boo, Maria; Finamore, Francesco; Gluck, Florent; Sanchez, Jean-Charles. Quantitative Analysis of Glycated Proteins. Journal of Proteome Research. 13-2;2396-347 IF:5.001


Fernandez-Peralbo, M. A.; Vera, C. Ferreiro; Priego-Capote, E. Luque de Castro, M. D. Stable isotopic internal standard correction for quantitative analysis of hydroxyecosatetraenoic acids (HETEs) in serum by on-line SPE-LC-MS/MS in selected reaction monitoring mode. Talanta. 126;170-176 IF:3.511

Delgado de la Torre, M. Pilar; Priego-Capote, Feliciano; Dolores Luque de Castro, M. Comparative profiling analysis of woody flavouring from vine-shoots and oak chips. Journal of the Science of Food and Agriculture. 94;3504-514 IF:1.879

Sanchez de Medina, Veronica; Calderon-Santiago, Monica; El Riachy, Milad; Priego-Capote, Feliciano; Luque de Castro, M. D. High-resolution mass spectrometry to evaluate the influence of cross-breeding segregating populations on the phenolic profile of virgin olive oils. Journal of the Science of Food and Agriculture. 94;15300-3109 IF:1.879

Fernandez-Peralbo, M. A.; Priego-Capote, F.; Luque de Castro, M. D.; Casado-Adam, A.; Arjona-Sanchez, A.; Munoz-Casares, F. C. LC-MS/MS quantitative analysis of paclitaxel and its major metabolites in serum, plasma and tissue from women with ovarian cancer after intraperitoneal chemotherapy. Journal of Pharmaceutical And Biomedical Analysis. 91;131-137 IF:2.259


Review

Ledesma-Escobar, CA; Luque de Castro, MD. Towards a comprehensive exploitation of citrus. Trends In Food Science & Technology. 39;163-73 IF:4.859


Mena-Bravo, A; Luque de Castro, MD. Sweat: A sample with limited present applications and promising future in metabolomics. Journal of Pharmaceutical and Biomedical Analysis. 90;139-147 IF:2.283

In Collaborations

Papers

Casado-Diaz, Antonio; Ferreiro-Vera, Carlos; Priego-Capote, Feliciano; Dorado, Gabriel; Dolores Luque-de-Castro, Maria;  Manuel Quésada-Gomez, José. Effects of arachidonic acid on the concentration of hydroxyecosatetraenoic acids in culture media of mesenchymal stromal cells differentiating into adipocytes or osteoblasts. Genes And Nutrition. 9;1 IF:3.419


Research Fundings

National


Regional

Priego Capote, F. Development of analytical platforms for the identification of biomarkers


Contract with Companies

Luque de Castro, MD. Completing the development of active plant compound extraction methods for their identification and quantification. Funding agency: Phytoplan Research, S.L.

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Luque de Castro, MD. Extraction of stevia plants: identifying the components of the extract and optimizing the extraction and purification of the compounds of interest. Funding agency: Consortium with “Campus de Excelencia Internacional en Agroalimentación (ceiA3)” (Agrifood Campus of International Excellence)

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Luque de Castro, MD. Identification by LC-QTIF, measurement by triple quadrupole LC-MS/MS and ionization by APCI of compounds in vegetable extracts. Funding agency: Phytoplan Research, S.L.

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Luque de Castro, MD. Measuring vitamin D and its metabolites in serum samples from women with osteoporosis. Funding agency: Institute of Health Carlos III (ISCIII)

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Luque de Castro, MD. A thorough analytical study of the composition and characteristics of plants of the stevia genus by mass spectrometry. Funding agency: Consorcio Campus de Excelencia Internacional en Agroalimentación (ceiA3)
Epigenetics

PhD Researchers
Rafael Rodríguez Ariza

Post-PhD Researcher
Mª Dolores Cordoba Cañero
Mª Teresa Morales Ruiz
Mª Victoria García Ortiz

Pre-PhD Researchers
Jara Teresa Parrilla Doblas
Iván Devesa Guerra
Casimiro Barbado García-Gil

Team Leader
Principal Investigator (PI)
Teresa Roldán Arjona
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Publications 1
Impact Factor 6,815
Average Impact Factor 6,815
Scientific Production

Publications

Original Papers

Cordoba-Canero, D.; Roldan-Arjona, T.; Ariza, RR. Arabidopsis ZDP DNA 3’-phosphatase and ARP endonuclease function in 8-oxoG repair initiated by FPG and OGG1 DNA glycosylases. Plant Journal. 79-5; 824-834
IF:6,815

Research Fundings

National

Roldán Arjona, Ma T. DNA demethylation: basic molecular mechanisms and their relevance to the reversal of epigenetic silencing. Funding agency: Spanish Ministry of Economy and Competitiveness (MINECO). Reference: BFU2013-43269-P

Roldán Arjona, Ma T. Actions to regenerate “Researcher Europe” Funding agency: Spanish Ministry of Economy and Competitiveness (MINECO). Reference: 201460000027068

International

Roldán Arjona, Ma T. Epigenetic Chemical Biology (EPICHEM). Funding agency: European Commission. Reference: CMST COST Action CM1406
http://www.cost.eu/COST_Actions/cmst/Ac-tions/CM1406?management

Regional


Contract with Companies

Roldán Arjona, Ma T. Services provided for Canvax. Funding agency: Canvax Biotech S.L. Reference: PSS.0032

Scientific Activity

Our scientific activity is focused on the study of the mechanisms involved in maintaining genome and epigenome stability. Our group has found genetic and biochemical evidence for the existence of a mechanism for active demethylation of DNA in plants. We have identified a family of proteins, whose prototype is ROS1 and DME, which exhibit meciotosina 5-DNA glycosylase activity, and initiate the deletion of 5-mec by a mechanism analogous to the Base Excision Repair (BER). Using genetic and molecular approaches, we have characterized in detail the biochemical activity of this new family of enzymes. In addition we have identified other proteins involved in this mechanism of epigenetic reprogramming. We are currently investigating the relevance of the base repair system in the maintenance and control of genetic and epigenetic information. In addition, we intend to analyze the relationship between this new route for demethylation of DNA and different modifications in the structure of chromatin. Finally, we are exploring the feasibility of using ROS1 and DME to initiate a controlled demethylation of DNA in human cells.

Keywords
Genetics; Epigenetics; Mutagenesis; DNA repair; DNA methylation; gene regulation.
GC23

Metabolism in Childhood

**Team Leader**

**Principal Investigator (PI)**
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*Research Network on Maternal and Child Health (RedSAMID) and associated Centre for Biomedical Network on Rare Diseases (CIBERER)*

**PAIDI CTS-639 Scientific Group**

**PhD Researchers**
Montserrat Anton Gamero
Mª Jose De La Torre Aguilari
Jose Fernando Fernández Gutierrez
Ignacio Ibarra De La Rosa
Eduardo López Laso
Maria Elena Mateos Gonzalez
Juan Luis Perez Navero
Maria Esther Ulloa Santamaria
Maria Jose Velasco Jabalquinto

**Post-PhD Researchers**
Catherine Ubina Flores Rojas

**Others Researchers**
Maria Jose Arroyo Marín
Susana Jaraba Caballero

**Publications**
13

**Impact Factor**
27,412

**Average Impact Factor**
2,108
Scientific Activity

Our group studies infectious diseases from two approaches:

Our group has initiated work in various sub-areas within Pediatrics to form a research group. Previously with other groups, and now with the group we have created, the research is based on understanding the role of metabolism in various pediatric diseases. Basically, this group works on nutritional aspects, as well as in the study of hormonal factors, inflammation and oxidative stress. In recent years we have focused on the study of childhood obesity and the metabolic syndrome currently associated with other pediatric illnesses too, such as prematurity or intra and extra-uterine growth retardation. In addition, the group also carries out research into the genetics of obesity. In future research, we expect to address neuropsychiatrics, and particular, the inborn errors of metabolism.

Keywords

Obesity, metabolic syndrome; arteriosclerosis; inflammation; oxidative stress; gene expression; proteomics; nutrigenetics, nutrigenomics.

Scientific Production

Publications

Original

Papers


Mendiola de la Osa, Agustín Garcia-Fernandez, Javier; Lorente-Cantareiro, Francisco J; Gil-Campos, Mercedes; Munoz-Villanueva, Maria C; De la Torre Aguilar, Manu J; Ibarra de la Rosa, Ignacio; Perez-Navero, Juan L. Lung recruitment manoeuvres do not cause haemodynamic instability or oxidative stress but improve oxygenation and lung mechanics in a newborn animal model. An observational study. European Journal of Anaesthesiology. 2014;19(3):457-465

Letter

Rodríguez-Benitez, V; Arranz, J A; Mata, C; Perez-Navero, J L; Gil-Campos, M. A new mutation in the GLDC gene in non-ketotic hyperglycinemia. Anales de Pediatria. 2014; 80(1):5-7

In Collaborations

Papers


Letters


Reviews


Research Fundings

National


Regional


Clinical Trials

0018/09: A randomized, open, multicenter, phase III trial to assess the efficacy of sodium thiosulfate in reducing ototoxicity in patients receiving chemotherapy with cisplatin for standard risk hepatoblastoma. PI Dr/a Mateos González, María Elena.
Efficacy and safety of levosimendan in critically ill children with severe acute heart failure
PI: Dr/a Ulloa Santamaria, María Esther

European Neuroblastoma Treatment Protocol for low or intermediate risk / European Low and Intermediate Risk Neuroblastoma
PI: Dr/a Mateos Gonzalez, Maria Elena

A prospective, multicenter, randomized, double-blind, placebo-controlled phase 3 study to assess the pharmacokinetics, safety and efficacy of paricalcitol capsules in reducing intact Parathyroid hormone levels in serum in children and adolescents aged 10 to 16 years with chronic moderate-to-severe nephropathy.
PI: Dr/a Anton Gamero, Montserrat

Multicenter, double-blind, randomized, placebo-controlled, parallel-group in which the efficacy and safety of repeated treatment with Larnazym in patients with alpha - mannosidosis is studied.
PI: Dr/a Gil Campos, Maria Mercedes

Register of patients with type C Niemann-Pick
PI: Dr/a López Laso, Eduardo

LIFE study of prebiotic oligosaccharides and fermented formula. A randomized, controlled, double-blind to investigate the effect of a new infant formula on the incidence of gastrointestinal symptoms in healthy term infants.
PI: Dr/a Pérez Navero, Juan Luis

An international registry which collects data on disease manifestations, interventions and outcomes in patients with tuberous sclerosis complex
PI: Dr/a Lopez Laso, Eduardo

Nutritional intervention study, randomized, double-blind, parallel group to evaluate the effect of Lactobacillus fermentum CECT5716 consumption on the incidence of mastitis.
PI: Dr/a Gil Campos, Maria Mercedes

Nutritional intervention study, multicenter, randomized, blinded, parallel group to evaluate the effect of the consumption of Lactobacillus fermentum CECT5716 on the duration of acute diarrhea in children.
PI: Dr/a Gil Campos, Maria Mercedes
Oxidative Stress and Nutrition

PhD Researchers
Félix Gascón Luna
Eduardo Agüera Morales
Evelio Luque Carabot
Jose Peña Amaro
Ma Concepción Ruiz Villén

Post-PhD Researchers
Fernando Sánchez López

Pre-PhD Researchers
Ma Carmen Bahamonde Román
Cristina Conde Gavilán
Antonio Cruz Guerrero
Ignacio Jimena Medina

Other members of the Group
(Nursing, Technical, and Administrative Staff)
Ana Isabel Giraldo Polo

Team Leader
Principal Investigator (PI)
Isaac Túnez Fiñana
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PAIDI CTS-624 Scientific Group
Scientific Activity
Our group studies the effect of different antioxidant agents, as well as transcranial magnetic stimulation on neuroplasticity (neurogenesis and synaptogenesis), cell death, oxidative stress and behavioural phenotype in models of neurodegeneration induced by neurotoxins and neuropsychiatric models induced by olfactory bulbectomy. Through these models, we analyze the role played by reactive oxygen and nitrogen species in the abovementioned phenomena, as well as the possibility of using the properties of the different agents used as new therapeutic strategies. Recently, the scope of the study has covered the analysis of transcription factors and vitagenes involved in the antioxidant response.

Additionally, the group is currently studying the role of nitrate and oxidative status, as well as inflammation in vitagene activation in patients with different neurodegenerative diseases. Finally, the group is involved in intense horizontal research in partnership with other groups in the assessment, analysis and interpretation of oxidative status in different study models and processes.

Keywords
Oxidative stress; inflammation; mitochondria; cell death; neuroplasticity; antioxidant systems; vitagenes; Nrf2.

Scientific Production
Publications
Original Papers
Escribano BM, Moreno A, Tasset I, Tünez I. Impact of Light/Dark Cycle Patterns on Oxidative Stress in an Adriamycin-Induced Nephropathy Model in Rats. Plos One. 2014; 9(5)e97713 IF:3.534

Bahamonde, Carmen; Conde, Cristina; Agüera, Eduardo; Lillo, Rafael, Luque, Evelio; Gascon, Felix Feijoo, Montserrat; Cruz, Antonio; H.; Sánchez-Lopez, Fernando; Tünez, Isaac. Elevated melatonin levels in natalizumab-treated female patients with relapsing-remitting multiple sclerosis: Relationship to oxidative stress. European Journal of Pharmacology. 2014; 730:26-30 IF:2.684

Escribano, BM; Colin-Gonzalez, AL; Santamaria, A.; Tünez, I. The Role of Melatonin in Multiple Sclerosis. Huntington’s Disease and Cerebral Ischemia. CNS & Neurological Disorders-Drug Targets. 2014; 13(6):1096-1119 IF:2.702


In Collaborations
Papers
Romina Meza-Miranda, Eliana; Carmargo, Antonio; Albertino Rangel-Zuniga, Oriol; Delgado-Lis-ta, Javier; Garcia-Ros, Antonio; Perez-Martinez, Pablo; Tasset-Cuevas, Inma; Tünez, Isaac; Tinahones, Francisco J.; Perez-Jimenez, Fran-cisco; Lopez-Miranda, Jose. Postprandial oxidative stress is modulated by dietary fat in adipose tissue from elderly people. Age. 2014; 38(2);507-517 IF:3.445

Contract with Companies
Tünez Fiñana, I. Development of in vitro CNS disease models and trial of the activity of active compounds identified using FRIDA. Funding agency Canvax Biotech S.L. Reference: INTER.0001

Sánchez López, F. Collaboration agreement with the Sociedad Española de Neurología. Funding agency Sociedad Andaluza de Neu-rología (Spanish Association of Neurology). Reference: CCB.0005

Clinical Trials
0312/09: A multicenter, randomized, double-blind, parallel-group, placebo-controlled study to evaluate the efficacy and safety of pegylated interferon beta-1a (BIB017) in subjects with relapsing multiple sclerosis. PI: Dr/a Sánchez López, Fernando

0313/09A multicenter, extension, blind-dose study to determine the safety and efficacy of long-term monotherapy dose of BG00002 in patients with relapsing-remitting multiple sclerosis. PI: Dr/a Sánchez López, Fernando

0056/10: A multicenter, double-blind, parallel-group, active-controlled study to determine the effectiveness of an intravenous therapy with three doses of autologous mesenchymal cells in patients with moderate to severe Amyotrophic Lateral Sclerosis. PI: Dr/a Agüera Morales, Eduardo

0221/12: A multicenter, double-blind, parallel-group, placebo-controlled study to assess the efficacy, safety, tolerability and pharmacokinetics of BIB033 in patients with a first episode of acute optic neuritis. PI: Dr/a Sánchez López, Fernando

0362/12: A randomized, double-blind, parallel-group, placebo-controlled, 12-week trial of leuco methylthioninium bis (hydromethane-sulfonate) in patients with mild-to-moderate Alzheimer’s disease. PI: Dr/a Agüera Morales, Eduardo

0031/13: An open, multicenter, extension study to assess the long-term efficacy and safety of BIB019. Dacizumab obtained using a high-yield process (DAC HYP) in monoclonal antibodies in patients with multiple sclerosis who have completed the 205MS301 study. PI: Dr/a Sánchez López, Fernando

0243/13: A multicenter, randomized, parallel-group, observer-blind, phase II study to assess the efficacy, safety and tolerability of placebo acetate 0.5, 3, 10 and 20 mg vs
Copaxone in patients with relapsing-remitting multiple sclerosis.
Pt: Dr/a Sánchez López, Fernando

0227/13: A prospective, single-arm study in a clinical setting to assess the efficacy, tolerability and convenience of teriflunomide according to patient reported outcomes (PRO) in patients with multiple sclerosis.
Pt: Dr/a Sánchez López, Fernando

0301/13: A prospective, multicenter, randomized, double-blind, parallel-group, placebo-controlled, phase III 96-week duration study to assess the efficacy and safety of masitinib 45mg/kg/day vs placebo.
Pt: Dr/a Agüera Morales, Eduardo

0011/14: A multicenter, randomized, double-blind, placebo-controlled study to assess the safety and efficacy of eculizumab in patients with recurrent optic neuromyelitis (NMO).
Pt: Dr/a Sánchez López, Fernando

0012/14: An open, phase III extension study of ECU-NMO-301 to assess the efficacy and safety of eculizumab in patients with recurrent optic neuromyelitis (NMO).
Pt: Dr/a Sánchez López, Fernando

0082/14: An open, multicenter study to assess the efficacy of oral Tecfidera™ (dimethyl fumarate) in EM activity and in patient reported outcomes in patients with remitting-relapsing multiple sclerosis in real practice (PROTEC).
Pt: Dr/a Agüera Morales, Eduardo

1011: A global, observational study to assess adherence to disease-modifying drugs in patients with relapsing-remitting multiple sclerosis.
Pt: Dr/a Sánchez López, Fernando

1634: An epidemiological study to assess the diagnosis and follow-up of patients with a first demyelinating episode suggestive of multiple sclerosis.
Pt: Dr/a Agüera Morales, Eduardo

1738: A validation study of questionnaires used to predict and assess adherence to treatments for neurological syndrome and multiple sclerosis in Spain (SAVE).
Pt: Dr/a Agüera Morales, Eduardo

1816: Evaluation of functionality of patients with multiple sclerosis in Spain and its impact on their quality of life.
Pt: Dr/a Sánchez López, Fernando

1873: Validating the Spanish version of the Relevant Outcome Scale for Alzheimer’s disease (ROSA).
Pt: Dr/a Agüera Morales, Eduardo

Pt: Dr/a Agüera Morales, Eduardo

Pt: Dr/a Agüera Morales, Eduardo

2085: A prospective, observational study to assess the influence of anti-JCV antibodies test on risk perception in treatments with natalizumab (Tysabri®) in patients with multiple sclerosis and their attending neurologists.
Pt: Dr/a Sánchez López, Fernando

2238: An observational, retrospective, cross-over study to assess suboptimal treatment adherence in patients with relapsing-remitting multiple sclerosis with a bout after treatment.
Pt: Dr/a Sánchez López, Fernando

2487: An observational, multicenter, national study to gather information on secu rity and document the pharmaceutical use of Fampyra When are US in Medical Practice.
Pt: Dr/a Agüera Morales, Eduardo

2660: A retrospective, observational, multicenter, national study to assess the use of fingolimod Gilenya in patients with remitting-relapsing multiple sclerosis in clinical practice. Estudio NEXT.
Pt: Dr/a Agüera Morales, Eduardo
Knowledge Discovery and Intelligent Systems

Team Leader
Principal Investigator (PI)
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PhD Researchers
Carlos García Martínez
Eva Lucrecia Gibaja Galindo
María Luque Rodríguez
José Raúl Romero Salguero
Amelia Zafra Gómez

Post-Phd Researchers
Alberto Cano Rojas
José María Luna Ariza

Pre-Phd Researchers
Marco Antonio Barrón Ortiz
Oscar Gabriel Reyes Pupo
Alain Guerrero Enamorado
Aurora Ramírez Quesada
Hermes Robles Berumen

Publications: 11
Impact Factor: 27,118
Average Impact Factor: 2,121
Scientific Activity
In the KDIS research group, our interests mainly focus on the development of knowledge discovery methods, and its application to different real problems.
We are devoted to the development of algorithms for solving classification problems in different types of problems:
• Conventional data problems.
• Multi-label data problems.
• Multi-instance problems.
From the applications perspective, we are interested in applying our algorithms to several real problems, focusing on aspects such as scalability or interpretability of the obtained results. Our wider expertise has been in the field of educational data, although in the last years we have also work in several health problems, like predicting diabetes from clinical data and the analysis of clinical histories to develop automatic diagnosis methods.

Keywords

Scientific Production
Publications
Original Papers
Reyes, O; Morell, C; Ventura, S. Evolutionary feature weighting to improve the performance of multi-label lazy algorithms. Integrated Computer-Aided Engineering. 2014. 21(4); 339-354. IF: 4.667
Cano, A; Zafra A., Ventura S. Parallel evaluation of Pittsburgh rule-based classifiers on GPUs. Neurocomputing. 2014. 126; 45-57. IF: 2.005
Luna, JM; Romero, JR; Ventura, S. On the adaptability of G3PARM to the extraction of rare association rules. Knowledge and Information Systems. 2014. 35(2); 391-418. IF: 2.639
Luna, JM; Romero, JR; Ventura, S. On the Use of Genetic Programming for Mining Comprehensible Rules in Subgroup Discovery. IEEE Trans. on Cybernetics. 2014. 44(12); 2329-2341. IF: 3.781

Review
Gibaja, E; Ventura, S. Multi-label learning: a review of the state of the art and ongoing research. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery. 2014. 4(6); 411-444. IF: 1.358
Olmo, JL; Romero, JR; Ventura, S. Swarm-based metaheuristics in automatic programming: a survey. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery. 2014. 4(6); 445-469. IF: 1.358

Editorial Material
Corchado, E; Abraham, A; Gutierrez, PA; Benitez, JM; Ventura, S. Special issue: Advances in learning schemes for function approximation. Neurocomputing. 2014. 135; 1-2. IF: 2.005
Ventura, S; Romero, C; Abraham, A. Foreword: Intelligent Data Analysis. Journal of Computer and System Sciences. 2014. 80(1); 1-2. IF: 1.091

In Collaborations
Papers
Cano, A; Ventura, S; Cios, K. J. Scalable CAIM discretization on multiple GPUs using concurrent kernels. Journal Of Supercomputing. 2014. 69(1); 273-292. IF: 0.841

Research Fundings
National

Contract with Companies

Inflammatory immune-mediated cutaneous diseases

Team Leader

Principal Investigator (PI)
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PhD Researchers
Antonio Vélez García-Nieto

Researchers
Rafael Jiménez Puya

Post-PhD Researchers
Marcelino González Padilla
Pedro Jesús Carmona Fernández
Francisco Gómez García
Ana Ma Rodríguez Martín
Scientific Activity

Our research group is focused on prevalent or severe inflammatory skin diseases such as psoriasis. Psoriasis is a chronic inflammatory disease that is genetically complex and primarily affects skin and other organs such as joints. It is estimated that psoriasis affects 2-3% of the population and it is one of the most prevalent types of immunological diseases worldwide. Our research group has developed a strategic plan including several lines of action.

1. Several research projects have been developed to identify the clinical, sociodemographic and molecular factors that influence variability in response to biological drugs in patients with psoriasis. To such purpose, we have created the largest collection of biological samples donated by patients with moderate to severe psoriasis that are currently stored at the reina Sofia University Hospital of Cordoba, Spain, which belongs to the Spanish National Biobank Network (Red Nacional de Biobancos). In the coming years, we are determining the role of some genetic polymorphisms, as well as of some patterns of CpG methylation of CpG sites in different genes, plasma concentrations of certain interleukins, or the profile of circulating miRNA.

2. We are interested in the development of new drugs for psoriasis. In 2015, we established a collaboration agreement with Canvax Biotech S.L within the framework of a project funded by public entities to carry out pre-clinical and clinical phase I trials to assess the efficacy and safety of the new compound CVX-785 for the treatment of psoriasis.

3. Being aware that translational medicine involves a multidimensional, multidisciplinary approach, we have integrated experts from different areas such as Immunology, Pharmacy, Genetics or Health Economics in diverse research groups through collaboration with the Department of Applied Economics of the University of Granada, the Laboratory of Investigative Dermatology, The Rockefeller University, New York (EEUU) or el Pharmacogenomics Laboratory, College of Pharmacy, Pharmacotherapy Education and Research Center (PERC), and the University of Texas Health Science Center at San Antonio (UTHSCSA), TX, EEUU.

4. Finally, it is worth mentioning our commitment to innovation materialized in the form of collaboration agreements with the IT industry, namely, Canvax Biotech S.L and Lynhce Diagnostics S.L. A spin-off company called info4CURE S.L has been set up to exploit patent licenses or the potential utility models resulting from such patents.

Keywords
Psoriasis; biobanking; genetic polymorphisms; predictors of therapeutic response; cost-efficiency; monoclonal antibodies; immune response.

Scientific Production

Publications

Original Papers
Letter


IF:3.105 Q1 D2

In Collaboration


IF:3.105 Q1 D2

Letter


IF:1.953

Research Fundings

National


Contract with Companies


Jimenez Puya, R. Collaboration Agreement with PFIZER. Funding Agency: Pfizer. SLU Reference: PSS.0060

Ruano Ruiz, J. Sponsored Conference of Research. PSORIASIS. Funding Agency: Jans- Cilag SA. Reference: PSS.0072
Ruano Ruiz, J. Agreement with Pfizer. Funding Agency: Pfizer, SLU Reference: CCB0048

Clinical Trials

0140/12: A phase III study to assess the efficacy and safety of induction and maintenance treatment with brodalumab versus placebo and ustekinumab in patients with moderate to severe plaque psoriasis. AMAGINE-2
PI: Dr/a Ruano Ruiz, Juan Alberto

0273/13: A multicenter, randomized, double-blind, 52-week follow-up study of subcutaneous secukinumab to prove its efficacy by assessing the index of severity and area affected by psoriasis at 16 weeks of treatment versus ustekinumab and
PI: Dr/a Jimenez Puya, Rafael

2016: An epidemiological, observational study to assess retention in treatment of patients with moderate to severe psoriasis in clinical practice.
PI: Dr/a Jimenez Puya, Rafael

PI: Dr/a Jimenez Puya, Rafael

2095: Cardiovascular risk factors in a population of Spanish patients with moderate to severe plaque psoriasis vulgaris with or without associated arthritis treated with anti-TNF drugs in real clinical practice conditions. Analysing the influence of the syndrome.
PI: Dr/a Ruano Ruiz, Juan Alberto

PI: Dr/a Ruano Ruiz, Juan Alberto

2650: An observational study to assess relapse in patients with moderate to severe psoriasis treated with biological drugs according to clinical practice in Spain.
PI: Dr/a Velez Garcia-Nieto, Antonio

2635: Survival of Etanercept among the elderly.
PI: Dr/a Jimenez Puya, Rafael
Lung transplantation. Thoracic malignancies

Team Leader

Associated Researcher
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**Scientific Activity**

Our research activity is focused on the effect of different molecules on lung preservation for transplantation. Additionally, we study the mechanism of chronic lung rejection and its effect on the regulation of different molecules. In our studies on lung preservation and chronic lung rejection we investigate the biological effects of different molecules especially serine protease inhibitors on oxidative stress, inflammation, the endothelial function and cell signalling mechanisms.

**Keywords**

Lung preservation; chronic rejection; bronchiolitis obliterans; endothelium; inflammation; oxidative stress; proteomics; genomics.

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**Scientific Production**

**Publications**

**Original Papers**

Moreno, Paula; Vaquero, JM; Baamonde, O; Redel, J; Cerezo, F; Algar, FJ; Salvatierra, A. Extended recipients but not extended donors are associated with poor outcomes following lung transplantation. *European Journal of Cardio-Thoracic Surgery*. 2014; 45(6):1040-1047. IF:2.814

Arango Tomas, Elisabet; Cerezo Madueno, Francisco; Algar Algar, Francisco Javier; Salvatierra Velazquez, Angel. Is lung surgery a good option for octogenarians?. 2014; 92(9):615-618. IF:0.89

**Editorial Material**


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**In Collaborations**

**Papers**

Cañizares, M. A.; Matilla, J. M.; Cuetl, A; Algar, J; Muguruza, I; Moreno-Mata, N; Moreno-Balsalobre, R; Guijarro, R; Arrabal, R; Garcia-Fontan, E; Gonzalez-Pineiro, A; Garcia-Yuste, M. EMETNE-SEPAR. Atypical carcinoid tumours of the lung: prognostic factors and patterns of recurrence. *Thorax*. 2014; 69(7):648-653. IF:8.562

Villena Garrido, V; Cases Viedma, E; Fernandez Villar, A; de Pablo Gafas, A; Perez Rodriguez, E; Porcel Perez, JM; Rodriguez Panadero, F; Ruiz Martinez, C; Salvatierra Velazquez, A; Valdes Cuadrado, L. Recommendations of diagnosis and treatment of pleural effusion. *Archivos de Bronconeumologia*. 2014; 50(6):235-249. IF:1.816

**Editorial Material**

Medina Fernandez, FJ; Espinosa Jimenez, D; Luque Molina, A; Lopez Giller, P; Rufian Peña, S. Transdiaphragmatic approach for hepato-pulmonary metastasis cases that support its reliability and safety. *CirugiaEspanola*. 2014; 92(1):60-62. IF:0.89

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**Research Fundings**

**Regional**


**Contracts with Companies**

Salvatierra Velazquez, A. 20 años de funcionamiento del programa de trasplante pulmonar de Andalucía. Funding agency: Novartis farmaceutica, S.A. Reference: PSS.003
Comprehensive nursing care. Multidisciplinary perspective

Team Leader

Associated Researcher
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PAIDI CTS-666 Scientific Group

PhD Researchers
Rosane Gonçalves Nitschke
Africa Ruiz Gándara

Post-PhD Researchers
Dolores Guerra Martín
Pedro Hidalgo Lópezosa
Clara Inés Flórez Almonacid

Pre-PhD Researchers
Juan Manuel Carmona Torres
Caridad Dios Guerra
Rosa Miñarro Del Moral
Pablo Jesús López Soto

Publications 3
Impact Factor 1,13
Average Impact Factor 0,376
Scientific Activity
The scientific activity of this research group is based on four basic principles that allow flexibility in the composition of and topics addressed by this group. The four basic principles are:

1. To promote research activity among nursing professionals to foster evidence-based nursing care practice. This Group is a vehicle for nursing professionals interested in research.
2. To promote the professional development of nursing professionals by generating knowledge that serves as a guideline for nursing care practice.
3. To make a commitment to provide scientific training for future nursing professionals.
4. To adopt a comprehensive and integral approach to how the human being experiences health and disease.

Keywords
Integral nursing care; nursing care philosophy; professional development of nursing professionals; assessment of training methods in Higher Education; nursing service management; evidence-based nursing care; health and disease; disease experience; health communication; integral human being; female nurses; healthcare in old age; aging-life quality; fragility.

Scientific Production
Publications
Original Papers

IF:0,497

Rodriguez-Borrego, Maria-Aurora; Goncalves Nitschke, Rosane; Lenise do Prado, Marta; Gue Martini, Jussara; Guerra-Martin, Maria-Dolores; Gonzalez-Galan, Carmen. Theoretical assumptions of Maffesoli's sensitivity and Problem-Based Learning in Nursing Education. Revista Latino-Americana de Enfermagem. 2014; 22(3):504-510.

IF:0,633

Rich-Ruíz Manuel; Martins María-Manuela; Rodríguez-Borrego, Maria-Aurora. Technology and Communication in Hospital Care for Chronically Ill Patients from the HabermasianPerspective. Text Context Nursing. 2014; 23(3):704-11.

IF:0

Research Fundings
National
Rodríguez Borrego, Mª A. Violence in couples formed by health professionals working at the Spanish National Health System. Funding agency: Institute Carlos III Health (ISCIII). Reference: PI13/01253

Local
Rodríguez Borrego, Mª A. Multiculturalism and multilingualism: Two challenges for Nursing Care Education: English in the Classroom. University of Cordoba (Proyectos de Mejora Docente. 2nd Call Plan de Innovación y Mejora Educativa).

International
Rodríguez Borrego, Mª A. The chronobiological pattern as a causative factor of falls in the population older than 65 years. MAPFRE FOUNDATION – 2014 Ignacio Hernando de Larramendi research funds.
PhD Researchers
Marisol Arenas de Larriva
Antonio Pablo Arenas Vacas
Laura Caballeros Ballesteros
Luis M Entrenas Costa
Luis Muñoz Cabrera
Francisco Santos Luna

Pre-PhD Researchers
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Montserrat Castillo Jurado

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Associated Researcher

Pneumology

Impact Factor
26,854

Average Impact Factor
3,356

Publications
8
Scientific Activity
Our line of research is focused on three key points, the effect of hypoxemia on metabolism and lung cancer, early diagnosis of lung cancer and the effect of new drugs and respiratory therapies basing on new technologies (TICs).

Objectives:
1. The effect of hypoxemia, chronic or intermittent on metabolism and vascular impact.
2. Search for markers basing on new technologies (metabolomics, proteomics, epigenetics) for early diagnosis of lung cancer.
3. Application of metabolomics in the development of new drugs in chronic respiratory diseases (COPD, asthma, HPP, FQ).
4. Application of TICs in the diagnosis and control of respiratory disease.

In addition, our research team collaborates in the investigation on the effect of intermittent hypoxemia with the research group of Dr. José López Miranda (Internal Medicine) in patients with vascular risk factors to determine the impact of hypoxemia on the effect of Mediterranean diet and vascular risk.

With the research group of Dr. Teresa Roldán Arjona (epigenetics), Dr. Antonio Rodríguez Ariza (oncology, Coordinator of the Oncover group) and Dr. Ma Dolores Luque de Castro (metabolomics and proteomics) in the identification and quantification of compounds useful in the diagnosis of lung cancer in exhaled breath condensate. In this line, this group also collaborates with the research group of Dr. M. Dolores Luque de Castro in the performance of metabolomic studies for the identification of clinical phenotypes in exhaled breath condensate, and in the search for new lung cancer markers in different biological fluids.

Keywords
Cancer; hypoxemia; cell damage; chronic respiratory disease; epigenetics; metabolomics; proteomics; telecare; telemedicine; respiratory therapies.

Scientific Production

Publications

Original Papers

Letter
del Sol Arenas-de Lariva, Maria; Casano-Povedano, Javier; Casano-Povedano, Andres. Inflammatory tracheal pseudomembrane. Archivos de Bronconeumologia. 2014; 50(3):307-308. IF:1.816


In Collaborations

Papers
de Torres, Juan P.; Marin, Jose M.; Martinez-Sanchez, Cristina; de Lucas-Ramos; Pilar; Mir-Viladrich, Isabel; Cosío, Borja; Peces-Barba, German; Calle-Rubio, Miryam; Solanes-Garcia, Ingrid; Balbin, RamonAgüero; de Diego-Damia, Alfredo; Feu-Collado, Nuria; Michavila, Inmaculada; Affageme, Iriaray, Rosa; Balcells, Eva; Casanovas, AntiaLunell, Rurii; Juan Bautista Galdez, Royo, Margarita; Marin, Soler-Cataluna, Juan J.; Lopez-Campos, Jose Luis; Soriano, Joan B.; Casanovas, Ciro; COPD HistAssessment/Spain Cohort. Clinical Application of the COPD Assessment Test Longitudinal Data From the COPD History Assessment in Spain (CHAIN) Cohort. Chest. 2014; 146(1):111-122. IF:7.132


Casanovas, Ciro; Marin, Jose M.; Martinez-Gonzalez, Cristina; de Lucas-Ramos, Pilar; Mir-Viladrich, Isabel; Cosio, Borja; Peces-Barba, German; Calle-Rubio, Miryam; Solanes-Garcia, Ingrid; Agüero, Ramin; de Diego-Damia, Alfredo; Feu-Collado, Nuria; Affageme, Inmaculada; Iriaray, Rosa; Balcells, Eva; Lunell, Antonia; Bautista Galdez, Juan, Marin, Margarita; Jose Soler-Cataluna, Juan; Luis Lopez-Campos, Jose; Soriano, Joan B.; de Torres, Juan P. COPD HistAssessment/Spain CHAIN. C. New GOLD classification: longitudinal data ongroupassignment. Respiratory Research. 2014; 15:3. doi: 10.1186/1465-9921-15-3. IF:3.822

Research Fundings

Regional

 Arenas de Lariva, M.S. 03/2011 Neumosur Grant. Funding agency: Asociación de Neumología y cirugía torácica del sur (Spanish Pneumology Association). Reference: Project Neumosur 5


Endocrinology and Nutrition. Insulin resistance, diabetes and metabolism

PhD Researchers
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- Remedios Vigara Madueño

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- Zahira Noemi Fernandez Bedmar

Researchers
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- M. Sierra Corpas Jiménez
- Carmen Gutiérrez Alcántara
- M. Jose Molina Puertas
- Rafael Palomares Ortega

Other members of the Group (Nursing, Technical, and Administrative Staff)
- Ma Rosario Torres Roldán

Team Leader
- Associated Researcher
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  PAIDI CTS-651 Scientific Group
Scientific Activity

This research group investigates the effect of different nutrients on insulin resistance and body fat distribution in patients with metabolic syndrome from two points of view:

1.- Line of research of Endocrinology and Nutrition, on which several groups work:
   - Along with Dr. Justo Casariego Fuentes' group, we investigate the expression of different hormone receptors and intracellular mediators in the onset and development of pituitary tumors. In line with transactional research principles, this group applies the findings of its research to real clinical practice using inhibitors or stimulators in order to inhibit hormone production and / or reduce their size when surgery is not fully successful.
   - This group collaborates with Dr. Quesada Gómez's group in the investigation of osteoporosis, particularly, vitamin D and bone stem cells.
   - This group also collaborates with Dr. Soriguer in the performance of epidemiological studies of diabetes mellitus type 2 and in the prevention of diabetes through a behavior modification programme which is being implemented in a village in southern Cordoba. This group also collaborates with Dr. Caballero in the study of bone metabolism in pregnant women with diabetes.

2.- Line of research: insulin resistance, diabetes and metabolism. This group studies the effect of diet components and pharmacologic interventions on the insulin resistance syndrome and the risk of developing diabetes in patients with "prediabetes". For such purpose, this group characterizes the specific effect of macronutrients on the release of digestive tract incretins and the subsequent signaling. In addition, this group also investigates the effect of diets with different macronutrient contents on body composition and body fat redistribution, and its relationship with insulin sensitivity and secretion. This group studies the role of adipose tissue expansion as a pathogenic factor of insulin resistance, beta-cell failure and diabetes. Finally, this group examines the transcription of metabolic, inflammatory and adipokine pathways in peripheral adipose tissue into diet models, macronutrients and different pharmacologic agents.

Keywords

Insulin resistance; β-pancreatic dysfunction; prediabetes; metabolic syndrome; and adipotoxicidad adipose tissue; inflammation, oxidative stress; gene expression; metabolomics; Pituitary Adenoma; Somatostatin receptors; Vitamin D; Metabolic Sindrome Prevalence of Diabetes Mellitus Type 2; Diabetes Mellitus and Pregnancy.

Scientific Production

Publications

Original

Papers

Paniagua, J. A; Escandell-Morales, J. M; Gil-Contreras, D; Berral de la Rosa, F. J; Romero-Jiménez, M; Gomez-Urbano, A; Sanchez-Lopez, A; Bellido, E; Poyato, A; Calatayud, B; Vidal-Piag, A. J. Central obesity and altered peripheral adipose tissue gene expression characterize the NAFLD patient with insulin resistance: Role of nutrition and insulin challenge. Nutrition.2014;30(2):177-185 IF:3.046


Alhambra Exposito Maria Rosa, Tenorio Jimenez, Carmen, Molina Puerta, Maria Jose; Manzano Garcia, Gregorio; Prior Sanchez, Inmaculada; Munoz Jimenez, Concepcion; Galvez Moreno, Maria Angeles. Screening for Cushing’s Syndrome in Obese Patients: Is it really necessary?.Nutricion Hospitalaria. 2014; 29(6):1020-1023 IF:125

Letter

Corpas Jimenez, Maria Sierra; Ortega Salas, Rosa; Tenorio Jimenez, Carmen, Molina Puerta, Maria Jose; Jimenez-Reina, L; Beranbeu, I; Dieguez, O; Luque, RM; Castano, JP; Alvarez, CV. Somatotropinomas, But Not Nonfunctioning Pituitary Adenomas, Maintain a Functional Apoptotic RET/Pit1/ARF/p53 Pathway That Is Blocked by Excess GDNF. Endocrinology.2014;155(11):4329-4340 IF:4.644

In Collaborations

Papers

Diaz-Rodriguez, E; Garcia-Rendueles, AR; Urbanez-Costa, A; Gutierrez-Pascual, E; Garcia-Lavandera, M; Leal, A; Japon, MA; Soto, A; Venegas, E; Tinahones, FJ; Garcia-Arnes, JA; Benito, P; Galvez, MA; Jimenez-Reina, L; Beranbeu, I; Dieguez, O; Luque, RM; Castano, JP; Alvarez, CV. Somatotropinomas, But Not Nonfunctioning Pituitary Adenomas, Maintain a Functional Apoptotic RET/Pit1/ARF/p53 Pathway That Is Blocked by Excess GDNF. Endocrinology.2014;155(11):4329-4340 IF:4.644

Clinical Trials

O115/11: An open, multicenter, expanded access study of pasireotide s.c. in patients with Cushing disease (Seascape) PI: Dr/a Galvez Moreno, Mª Angeles

0235/11: A comparative study of LY2605541 versus insulin glargine as basal treatment in combination with insulin oral agents in insulin-naive patients with type 2 diabetes mellitus: A double-blind, randomized study. PI: Dr/a Paniagua Gonzalez, Juan Antonio

2170: A retrospective, observational study to determine the time elapsed until normal hormone levels are reached by dosis and administration intervals of Somatuline Autogel administered in regular clinical practice to treat acromegaly patients. PI: Dr/a Galvez Moreno, Mª Angeles

2138: A retrospective study to assess changes in metabolic control and weight in obese patients with diabetes mellitus type 2 after receiving treatment with GLP-1 receptor antagonists(e-DM-14) PI: Dr/a Galvez Moreno, Mª Angeles

2520: Assessing the effectiveness of telemedicine in achieving metabolic control in patients with type 1 diabetes taking multiple insulin doses in Andalusia. PI: Dr/a Palomares Ortega, Rafael
Study of growth. Endocrinology and Child Nutrition

Team Leader
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Associated Researcher

PhD Researchers
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Juana Mª Guzman Cabañas
Luis Jiménez Reina
Rosario Martos Estepa
Cristina Mata Rodríguez
Mª José Párraga Quiles
Mª Dolores Ruiz González
Inés Tofe Valera
Javier Torres Borrego
Miguel Valle Jiménez
Fernando Vázquez Rueda
**Scientific Activity**
Among other lines of research, this group studies obesity in prepubertal children, focusing on children with metabolic syndrome, inflammatory factors, vascular risk biomarkers and adipose tissue gene expression, diet effects on these factors, study of steatohepatitis and physical activity.
Another line of research is centered on aspects related to nutrition in children with extrauterine growth retardation, especially in those that might later develop metabolic syndrome. This group also carries out comparative cord blood proteomic analyses of healthy term neonates and neonates with IUGR to identify potential differences that might with associated with IUGR and the likelihood of adverse nutritional effects. This group also investigates growth-hormone producing cells and morphological, structural and production modifications in animals.
Finally, this group are developing one line of research centered on food allergies, and second line based on the possible health impact on workers in solar thermal plants daily exposed to polycyclic aromatic hydrocarbons.

**Keywords**
Child obesity; metabolic syndrome in children; diet, endothelium; inflammation; cardiovascular biomarkers; gene expression; proteomics; neonates with intrauterine growth retardation (IUGR); metabolic syndrome in IUGR; basic research on growth producing cells with different external stimuli; food allergy.

**Scientific Production**

**Publications**

**Original**

IF: 1.58

**Editorial Material**

IF: 3.534

IF: 2.534

Ruperez, AI; Olza, J; Gil-Campos, M; Leis, R; Mesa, MD; Tojo, R; Canete, R; Gil, A; Aguiler, CM Association of Genetic Polymorphisms for Glutathione Peroxidase Genes with Obesity in Spanish Children.J Nutrigenet Nutrigenomics. 2014;7(3):130-42. IF: 2.581

Arnao, MDR; Sanchez, AR; Garcia-Rey, C; Diez, FJA; Estrada, RC; Quartero, BG; Merillas, MA; Lopez-Sigueo, JP. The DATAC study: a new growth database Description of the epidemiology, diagnosis and therapeutic attitude in a group of Spanish children with short stature. Journal of Pediatric Endocrinology & Metabolism. 2014; 27(11-12):1201-1208 IF: 0.711

**In Collaborations**

**Papers**


Ruperez, AI; Olza, J; Gil-Campos, M; Leis, R; Mesa, MD; Tojo, R; Canete, R; Gil, A; Aguiler, CM Association of Genetic Polymorphisms for Glutathione Peroxidase Genes with Obesity in Spanish Children.J Nutrigenet Nutrigenomics. 2014;7(3):130-42. IF: 2.581

Arnao, MDR; Sanchez, AR; Garcia-Rey, C; Diez, FJA; Estrada, RC; Quartero, BG; Merillas, MA; Lopez-Sigueo, JP. The DATAC study: a new growth database Description of the epidemiology, diagnosis and therapeutic attitude in a group of Spanish children with short stature. Journal of Pediatric Endocrinology & Metabolism. 2014; 27(11-12):1201-1208 IF: 0.711

**Research Fundings**


**Contracts with Companies**


Cañete Estrada, R. Protein expression of pre-pubertal children with GH deficit. Funding agency: Pfizer, S.A. Reference: CCB.U000051

**Clinical Trials**

0090/11: A randomized, phase III, double-blind, prospective, comparative study of rhBSSL vs. placebo added to the infant formula or to breast milk for four weeks of treatment administered to preterm infants born before a gestational age of 32 weeks. PI: Dr/a Guzman Cabañas, Juana Maria

0291/11: A randomized, multicenter, blind trial with topiramato vs. placebo for the treatment of newborns with perinatal asphyxia treated with moderate whole-body hypothermia. PI: Dr/a Guzman Cabañas, Juana Maria

0180/12: A multicenter, randomized, observer-blind, active-controlled study to evaluate the safety, tolerability, pharmacokinetics and efficacy of ceftaroline versus ceftriaxone in pediatric patients with bacterial pneumonia requiring hospitalization. PI: Dr/a Torres Borrego, Javier

2343: Tolerance to two highly hidrolysed formulas based on rice protein and casein in infants allergic to cow’s milk proteins. PI: Dr/a Torres Borrego, Javier
Clinical Analysis

**Team Leader**
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**Associated Researcher**
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Antonio Martínez Peinado
Rafael Molero Payan

**PhD Researchers**
- Javier Caballero Villarraso
- Antonio Martínez Peinado
- Rafael Molero Payan

**HIGHLIGHTS**
- Publications: 3
- Impact Factor: 9,902
- Average Impact Factor: 3,300
Scientific Activity
Our group is currently developing two lines of research related to the assessment of the diagnostic accuracy of new technologies. On the one hand, we are assessing the diagnostic efficacy of the methodologies used for prenatal diagnosis of aneuploidy such as chorionic villus sampling in screening for aneuploidy in the first trimester and the karyotype study in the first and second trimester of pregnancy. On the other hand, we are assessing new point-of-care testing (POCT) methodologies as gas, blood metabolite and ion determination; diagnosis and evolution of celiac disease, and use of POCT methods in coagulometry for the follow-up of anticoagulated patients.

Keywords
New methodologies; chorionic villus sampling; prenatal screening; karyotype; POCT.

Scientific Production
Publications
In Collaborations
Papers
Alcalá-Diaz, JF; Delgado-Lista, J; Perez-Martinez, Pablo; Garcia-Ríos, A; Marin, O; Quintana-Navarro, GM; Gomez-Luna, P; Camargo, A; Almaden, Y; Caballero, J; Tinahones, FJ; Ordovas, JM; Perez-Jimenez, F; Lopez-Miranda, J. Hypertriglyceridemia Influences the Degree of Postprandial Lipemic Response in Patients with Metabolic Syndrome and Coronary Artery Disease. From the Cordioprev Study. PlosOne. 2014; 9(5):e96297
IF:3,534

Perez-Martinez, P; Alcala-Diaz, JF; Delgado-Listaa, J; Garcia-Ríos, A; Gomez-Delgado, Francisco; Marin-Hinojosa, D; Rodriguez-Gantalejo, F; Delgado-Casado, N; Perez-Caballero, Al; Fuentes-Jimenez, Francisco J; Camargo, A; Tinahones, FJ; Ordovas, JM; Perez-Jimenez, F; Lopez-Miranda, J. Metabolicphenotypes of obesityinfluencetriglyceride and inflammationhomoeostasis. European Journal of Clinical Investigation. 2014; 44(11):1053-1064
IF:2,834

Research Fundings
National

Participation in other research projects from IMIBIC Groups
GA7 Urology and sexual medicine

Researcher
Francisco Angiada Jurado

Post-PhD Researchers
Ana Mª Blanca Pedregosa
Julia Carrasco Valiente

Pre-PhD Researchers
Juan P Campos Hernández
Daniel Gil Contreras
Enrique Gómez Gómez
Javier Márquez López
Jesús Ruiz García

Team Leader

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Other Associated Researcher
Rafael Prieto Castro

Publications 9
Impact Factor 17,158
Average Impact Factor 1,906
Scientific Activity

This Group is centered on the study of urologic tumors from a new epidemiological approach and the search for diagnostic/prognostic markers. Additionally, this Group is involved in research on renal transplantation and developing new strategies to improve prognosis after organ transplantation.

In the field of sexual medicine, our group has focused its efforts on the study of erectile dysfunction (ED), especially on secondary ED, which is associated with radical prostatectomy. At present, we are looking for new invasive pharmacological therapeutic lines.

Keywords
Bladder cancer; prostate cancer; lower urinary tract symptomatology; renal cancer; renal transplant; erectile dysfunction; kidney stone.

Scientific Production

Publications

Original Papers

Carrasco, Julia, Anglada, Francisco J; Campos, Juan P; Muntane, Jordi; Requena, Maria J; Padilla, Javier. The protective role of coenzyme Q10 in renal injuries associated with hypercholesterolemia: a randomised, placebo-controlled clinical trial. BJU International. 2014; 113(6):942-950 IF:3.3

Carrasco-Valiente, J; Campos-Hernandez, JP; Ruiz-Garcia, J; Marquez-Lopez, FJ; Requena-Tapia, Mj; Prieto-Castro, R. Importance of early rehabilitation of the corpus cavernosum after radical prostatectomy. Revista Internacional de Andrologia. 2014; 12(1):4-9 IF:0.22


Gomez-Gomez, Enrique. Pablo Campos-Hernandez, Juan; Luis Carazo-Carazo, Jose; Prie Ledo-Cepero, M. J; Beardo-Villar, P; Reymundo, Carlos; Luque, Rafael J; Comperat, Eva. Clinicopathological characteristics and outcome of nested carcinoma of the urinary bladder. VirchowsArchiv. 2014; 465(2):199-205 IF:2.56

Review

Sánchez-Borrorego, R; Molero, F; Cañestro, R; Castelo-Branco, C; Honrado, M; Jurado, AR; Laforet, E; Prieto, R; Cabello, F; Larrazabal, M; Sánchez, F; Florido, J; Mendoza, N. Spanish Consensus on Sexual Health in Men and Women over 50. Medicina Sexual. 2014 June; 78(2): 146-150 IF:2.861


Research Fundings

National

Requena Tapia, Mj. BROCA Project. Funding agency: Collaboration Agreements between MINECO (FEDER) and the University of Cordoba for the implementation of a biomedical research project. Reference: CCB.0050PM

Requena Tapia, Mj. Estudio de los niveles de expresión de las proteínas de la ruta de señalización PI3Ca/AKT y su papel diagnóstico y pronóstico/predictivo en cáncer de vejiga urinaria. Funding agency: Asociación Española De Urología. Reference: FIU14/002

Participation in other researchs projects from IMIBIC Groups

*Rodríguez Ariza, A. ONCOVER: Detection system of volatile compounds for early diagnosis of lung and colon cancer. Funding agency: Collaboration Agreements between el MINECO (FEDER) and the University of Cordoba for the implementation of a biomedical research project. Reference: CCB.030PM

Contracts with Companies

Requena Tapia, Mj: Collaboration with Gsk. Introduction to the Bayesian inference. Funding agency: GlaxosMithKline, S.A. Reference: CCB.0040

Requena Tapia, Mj: Collaboration with GSK. Bayesian Inference. Funding agency: GlaxosMithKline, S.A. Reference: CCB.0062

Clinical Trials

0216/10: Comparative efficacy of DUODART and lifestyle patterns versus watchful waiting and lifestyle patterns with or without escalation to tamoxifen in the management of treatment of naive patients with moderate symptoms of prostatic hyperplasia and prostatic growth. PI: Dr/a Requena Tapia, Maria José

0280/12: A randomized, double-blind, comparative study of ZYTIGA (abiraterone acetate) plus prednisone at low dose plus androgen deprivation therapy (ADT) against TPA alone in subjects with a new diagnosis of high-risk metastatic hormone-naive prostate cancer (mHNC). PI: Dr/a Requena Tapia, Maria José

1658: Epidemiological study estimating the incidence of prostate cancer in Spain 2010. PI: Dr/a Requena Tapia, Maria José

1735: A study to assess the impact of androgen deprivation therapy in the incidence of metabolic abnormalities in patients with prostate cancer. PI: Dr/a Anglada Curado, Francisco José

1809: A study to assess overactive bladder and detrusor overactivity in men with lower urinary tract filling symptoms (LUTS) attending functional urology and urodynamics units. PI: Dr/a Ruiz Garcia, Jesus Manuel

In Collaborations

Papers

Miriána B; Coozar JM; Palou J; Urdzaaíza M; Medina-Lopez RA; Subirá Ross J; de la Rosa-Kehmann F; Chantada-Abal V; Lozano F; Ribal MJ; Rodríguez Fernández E; Castaño-Bajo J; Marquez-Lopez J; Requena-Tapia Mj; Concepción M; Masip T; Requena-Tapia Mj; Prieto-Castro R; Romero-Jimenez M; Gomez-Urbano A; Sanchez-Lopez A; Bellido E; Poyato A; Calafayud B; Vidal-Pug C A. 3rd obesity and altered peripheral adipose tissue gene expression characterize the NAFLD patient with insulin resistance: Role of nutrition and insulin challenge: Nutrition. 2014; 30(2):177-185

Lopez Beltrán, Antonio; Cheng, Liang; Montironi, Rodolfo; Bianca, Ana; Leva, Manuel. Roupert, Morgan; Fonseca, Jorge; Vidal, Alfre-do; Menendez, Carmen L; Pallas, Judit; Bol-lito, Enrico; Reyymundo, Carlos; Luque, Rafael J; Comperat, Eva. Clinicopathological characteris-tics and outcome of nested carcinoma of the urinary bladder. VirchowsArchiv. 2014; 485(2):199-205 IF:2.56
1856: An epidemiological, observational study of disease progression and therapeutic approach in patients with prostate cancer.
PI: Dr/a Requena Tapia, María José

2363: A study on regular practice in patients with Bladder Pain Syndrome (BPS) in Functional Urology and Urodynamics units.
PI: Dr/a Ruiz García, Jesús Manuel

2446: Elaboration of a predictive model of Cystoscopy, based on BTA-stat test for monitoring patients with low grade non-muscle invasive bladder carcinoma. (Estudio PreCis BTA)
PI: Dr/a Requena Tapia, María José
Radiology

PhD Researchers
Alberto Benito Ysamat
Antonio Cano Sánchez
Miguel Canis López
María Cara García
Fernando Delgado Acosta
María José García Ortega
José García-Revillo García
Lucía Nuria Izquierdo Palomares
Rafaela Muñoz Carrasco
Elisa Roldán Romero
Ana Luz Santos Romero
Roser Ysamat Marfa

Team Leader
Marina Álvarez Benito
marinaalvarezbenito@telefonica.net

Associated Researcher
Daniel López Ruiz

Other Associated Researcher

Impact Factor
10,28

Average Impact Factor
2,056

Publications
5
Scientific Activity

Continuous advances in diagnostic imaging techniques have allowed physicians to make highly accurate diagnoses, perform a close follow-up of the evolution of the disease, and assess TJE response of a large number of nosologic entities to a range of drugs and therapies. The collaboration of the Diagnostic Radiology Unit has allowed to assess the effect of new drugs on the evolution of a large number of neoplasms, rheumatologic diseases, demyelinating diseases of the central nervous system or inflammatory diseases of the digestive tract. In other cases, this Unit has helped our researchers to quantify the prevalence of certain complications associated to different therapies such as corticosteroids-based therapies.

Apart from strictly diagnostic scans, the Diagnostic Radiology Unit also performs innovative interventional procedures. Among them, it is worth mentioning the intraarterial infusion of autologous bone marrow mononuclear cells in diabetic and non-diabetic patients with chronic critical ischemia of the lower limbs.

Keywords

Stem cells; arterial ischemia of the lower limbs; therapeutic angiogenesis; neoplasms; demyelinating diseases; rheumatic diseases; pathochrony; radiological assessment of response to drugs; diagnostic radiological scans; therapeutic radiological scans.

Scientific Production

Publications

Original

Review

Scientific Activity

Continuous advances in diagnostic imaging techniques have allowed physician to make highly accurate diagnoses, perform a close follow-up of the evolution of the disease, and assess TJE response of a large number of nosologic entities to a range of drugs and therapies. The collaboration of the Diagnostic Radiology Unit has allowed to assess the effect of new drugs on the evolution of a large number of neoplasms, rheumatologic diseases, demyelinating diseases of the central nervous system or inflammatory diseases of the digestive tract. In other cases, this Unit has helped our researchers to quantify the prevalence of certain complications associated to different therapies such as corticosteroids-based therapies.

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Keywords

Stem cells; arterial ischemia of the lower limbs; therapeutic angiogenesis; neoplasms; demyelinating diseases; rheumatic diseases; pathochrony; radiological assessment of response to drugs; diagnostic radiological scans; therapeutic radiological scans.
PhD Researcher
Pedro José Alados Arboledas
Maria Del Valle Blázquez Ruiz
Antonio Chacón Quevedo
José García-Revillo García
Federico Zunta Martínez

Researchers
Jaime Guillermo Casares Mediavilla
Maria Teresa Conejero Jurado
Agustina Jiménez Castilla
Pasquale Maiorano Iuliano
Carlos Manuel Merino Cejas
Javier Moya González

Other members of the Group
(Nursing, Technical, and Administrative Staff)
Rafael Canales Ruiz
Manuel Recio Rufián
Raquel Riballo Cortes
Noelia Romero Mata
MaDel Carmen Romero Morales

Team Leader
Ignacio Muñoz Carvajal
ignacio.munoz.carvajal.sspa@juntadeandalucia.es
PAIDI TEP-226 PRINIA Scientific Group
(Project Engineering and Automation) (Collaborator)

Cardiovascular Pathology

Scientific Production

Publications

Original Papers

Escribano, BM, Colin-Gonzalez, AL; Santamaría, A; Tunez, I. The Role of Melatonin in Multiple Sclerosis, Huntington’s Disease and Cerebral Ischemia. CNS & Neurological Disorders-Drug Targets. 2014; 13(6):1096-1119 IF:2.702

Escribano, B; Quero, I; Feijoo, M; Tasset, I; Montilla, P; Tunez, I. Role of noise and music as anxiety modulators: Relationship with ovarian hormones in the rat. Applied Animal Behaviour Science. 2014.152; 73-82 IF:1.626

In Collaborations

Papers

Romina Meza-Miranda, Eliana, Carmargo, Antonio; Rangel-Zuniga, Oriol; Delgado-Lis-ta, Javier; Garcia-Rios, Antonio; Perez-Martinez, Pablo; Tasset-Cuevas, Inma; Tunez, Isaac; Tinhaciones, Francisco J; Perez-Jimenez, Francisco; Lopez-Miranda, Jose. Postprandial oxidative stress is modulated by dietary fat in adipose tissue from elderly people. Age. 2014; 36(2):507-517 IF:3.445

Contract with Companies

Tunez Fiñana, I. Development of in vitro CNS disease models and trial of the activity of active compounds identified using FRIDA. Funding agency Canvax Biotech S.L. Reference: INTER.0001

Sánchez López, F. Collaboration agreement with the Sociedad Española de Neurología. Funding agency Sociedad Andaluza de Neurología (Spanish Association of Neurology). Reference: CCB.0005

Clinical Trials

0132/09. A multicenter, randomized, double-blind, parallel-group, placebo-controlled study to evaluate the efficacy and safety of
0056/10: A multicenter, double-blind, randomized, parallel-group, active-controlled, monotherapy study to determine the effectiveness and safety of cladribine in patients with relapsing multiple sclerosis.

PI: Dr/a Sánchez López, Fernando


PI: Dr/a Agüera Morales, Eduardo

0031/13: An open, multicenter, extension study to assess the long-term efficacy and safety of BIIB091. Daclizumab obtained using a high-yield process (DAC HYP) in monotherapy in patients with multiple sclerosis who have completed the 205MS301 study.

PI: Dr/a Sánchez López, Fernando

92/13: A randomized, double-blind, placebo-controlled, parallel group, dose-finding study to assess the efficacy, safety, tolerability and pharmacokinetics of biib033 in patients with relapsing multiple sclerosis when used in combination with avonex.

PI: Dr/a Sánchez López, Fernando

0243/13: A multicenter, randomized, parallel-group, observer-blind, phase II study to assess the efficacy, safety and tolerability of plavix, acetaminophen 0.5, 3, 10 and 20 mg vs Copaxone in patients with relapsing-remitting multiple sclerosis.

PI: Dr/a Sánchez López, Fernando

0227/13: A prospective, single-arm study in a clinical setting to assess the efficacy, tolerability and convenience of teriflunomide according to patient reported outcomes (PRO) in patients with multiple sclerosis.

PI: Dr/a Agüera Morales, Eduardo

0301/13: A prospective, multicenter, randomized, double-blind, parallel-group, placebo-controlled, phase III 96-week duration study to assess the efficacy and safety of mitoxantrone 4.5mg/kg/day vs placebo.

PI: Dr/a Agüera Morales, Eduardo

001/14: A multicenter, randomized, double-blind, placebo-controlled study to assess the efficacy and safety of eculizumab in patients with recurrent optic neuritis.

PI: Dr/a Sánchez López, Fernando

0021/12: A multicenter, double-blind, parallel-group, placebo-controlled study to assess the efficacy, safety, tolerability and pharmacokinetics of BIIB033 in patients with a first episode of acute optic neuritis.

PI: Dr/a Sánchez López, Fernando


PI: Dr/a Agüera Morales, Eduardo

1011: A global, observational study to assess adherence to disease-modifying drugs in patients with relapsing-remitting multiple sclerosis.

PI: Dr/a Sánchez López, Fernando

1634: An epidemiological study to assess the diagnosis and follow-up of patients with a first demyelinating episode suggestive of multiple sclerosis.

PI: Dr/a Agüera Morales, Eduardo

1738: A validation study of questionnaires used to predict and assess adherence to treatments for neurological syndrome and multiple sclerosis in Spain (SAVE).

PI: Dr/a Agüera Morales, Eduardo

1816: Evaluation of functionality of patients with multiple sclerosis in Spain and its impact on their quality of life.

PI: Dr/a Sánchez López, Fernando

1727: Validating the Spanish version of the Relevant Outcome Scale for Alzheimer’s disease (ROSA).

PI: Dr/a Agüera Morales, Eduardo


PI: Dr/a Agüera Morales, Eduardo


PI: Dr/a Agüera Morales, Eduardo

2085: A prospective, observational study to assess the influence of anti-3G antibodies test on risk perception in treatments with natalizumab (Tysabri®) in patients with multiple sclerosis and their attending neurologists.

PI: Dr/a Sánchez López, Fernando

2238: An observational, retrospective, cross-over study to assess suboptimal treatment adherence in patients with relapsing-remitting multiple sclerosis with a bout after treatment.

PI: Dr/a Sánchez López, Fernando

2487: An observational multicenter, multinational paragraph gather information on security and document the pharmaceutical use of Fampryra when are US in Medical Practice.

PI: Dr/a Agüera Morales, Eduardo

2660: A retrospective, observational, multicenter national study to assess the use of fingolimod Gilenya in patients with relapsing-remitting multiple sclerosis in clinical practice. Estudio NEXT.

PI: Dr/a Agüera Morales, Eduardo
Nuclear Medicine

Team Leader

Associated Researcher
Juan Antonio Vallejo Casas
jantoni.vallejo.sspa@juntadeandalucia.es

PhD Researchers
Elvira Carmona
Ferardo Roberto Maza Muret
Luisa Mena Bares
Estefanía Moreno Ortega
Ma Victoria Guiote Moreno

Other members of the Group (Nursing, Technical, and Administrative Staff)
Antonio Martín Ruiz
Anahi Rojas Arroyo
Consuelo Albarrán Martín
Concepción Martínez Pérez
Natividad Illescas Jurado
Scientific Activity
The Group works now in the development of new treatment lines for Differentiated Thyroid carcinoma, as active part of SEMNIM Group, and also, participating in International meetings.
Also, we continue with the Clinical Trials activity, and specifically in the use of new radioisotopic treatment for Prostate Cancer and Lymphoma.
We were initiated this year the collaboration with others groups for the implementation of PET/CT in clinical situations, specially in the evaluation of therapeutic response.

Scientific Production
Publications
In Collaborations
Papers
Bartenstein, Peter; Caballero Calabuig, Elisa; Maini, Carlo Ludovico; Mazzarotto, Renzo; Angustias Muros de Fuentes, M; Petrich, Thorsten; Cravo Rodrigues, Fernando Jose; Vallejo Casas, Juan Antonio; Vianello, Federica; Basso, Michela; Gomez, Balaguer, Marcelino; Haug, Alexander; Monari, Fabio; Sanchez Vano, Raquel; Sciuto, Rosa; Magner, James. High-Risk Patients with Differentiated Thyroid Cancer T4 Primary Tumors Achieve Remnant Ablation Equally Well Using rhTSH or Thyroid Hormone Withdrawal. Thyroid. 2014; 24(3):480-487 IF:3,843

Editorial Material
Castrejon, AMS; Rivera, EP; Farto, JCA; Casas, JAV; Gasen, AR; Perego, JS; Lostao, JA Nuclear medicine in Spain: High technology 2013. Revista Española de Medicina Nuclear e Imagen Molecular. 2014; 33(6):378-381 IF:0.938

Clinical Trials
1930: A retrospective, non-interventional comparative study involving patients with T4 comparing the outcomes of ablation of thyroid remnants after the administration of Thyrogen and 131 vs. withdrawal of thyroid hormone therapy followed by the administration of 131.
P: Dr. Vallejo Casas, Juan Antonio
Learning and Artificial Neural Networks-AYRNA

PhD Researchers
David Becerra Alonso
Mariano Carbonero Ruiz
Adiel Castaño Méndez (Collaborator)
Juan Carlos Fernández Caballero
Carlos García Alonso
Pedro Antonio Gutiérrez
Alfonso Carlos Martínez Estudillo
Francisco José Martínez Estudillo
Sancho Salcedo Sanz (Collaborator)
Mercedes Torres Jiménez
Manuel Cruz Ramírez
Francisco Fernández Navarro
María Pérez Ortiz
Mónica de la Paz Marin
Javier Sánchez Monedero

Pre-PhD Researchers
Manuel Dorado Moren
Antonio M Durán Rosal
Natalia Gómez

Team Leader
César Hervás Martínez
chervas@uco.es
PAIDI TIC-148 Scientific Group

Publications: 16
Impact Factor: 39,176
Average Impact Factor: 2,448
Scientific Activity

The Learning and Artificial Neural Networks AYRNA research group (code TIC-148 - Junta de Andalucía) was founded mainly focused in the field of Artificial Neural Networks (ANNs). In the last years, the group has diversified its interest areas working on the resolution of different problems through soft computing techniques (artificial neural networks, evolutionary algorithms and other pattern recognition algorithms). Regarding the biomedical field, we work on artificial neural networks in donor-recipient matching in liver and lung transplants.

Keywords

Data science; multiobjective evolutionary algorithms; machine learning; ordinal classification; teaching innovation; time series segmentation; time series prediction; new basis functions for artificial neural networks; evolutionary artificial neural networks; distributed systems;

Scientific Production

Publications

Papers


In collaborations

Papers

Briceno J.; Cruz-Ramirez M.; Prieto M.; Navasa M.; Ortiz de Urbina J.; Orti R.; Gomez-Bravo MA.; Otero A.; Varo E.; Tomé S.; Clemente G.; Bahares R.; Barea R.O.; Cuervas-Mons V.I.; Solorzano G.2; Vinaixa C.; Rubín A.; Colmenero J.; Valdivieso A.; Hervás-Martínez C.; de la Mata M. Use of artificial intelligence as an innovative donor-recipient matching model for liver transplantation. Results from a multicenter Spanish study. NETHERLANDS.2014; 6(5):1020-1028 IF:10.401


Research Fundings

National


Regional


International

Hervás-Martínez C., Gutiérrez Peña, P.A. Climate tipping points: Detection and analysis of patterns using an ordinal regression approach. Proyecto Anidra.Funding Agency: European Space Agency (ESA) Empresa de Innovación Europea.Dirección European Space Research and Technology Centre (ESTEC)
10
Scientific Production at a glance
10. Scientific Production at a glance

10.1 Summary of Publications

The scientific activities carried out by researchers in their respective groups have led to the following global production:

The following graphic shows the evolution of IF over the past five years:

In turn, these publications mainly appear in journals in the first two quartiles, which speaks volumes for the scientific quality of the published papers.

Regarding the authorship of the works, 58.72% of the published articles have an IMIBIC researcher a the first/last author and corresponding author. The remaining 41.28% were published as co-authors.

Distribution of Publications per Quartiles and first Deciles

<table>
<thead>
<tr>
<th>Year</th>
<th>Total IF</th>
<th>Publications/Percentile</th>
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<tbody>
<tr>
<td>2012</td>
<td>1084,185</td>
<td>327</td>
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</table>

<table>
<thead>
<tr>
<th>Total IF</th>
<th>Publications/Percentile</th>
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<tr>
<td>391,783</td>
<td>111/Q1</td>
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<td>402,28</td>
<td>62/D1</td>
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<td>195,143</td>
<td>71/Q2</td>
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<td>94,979</td>
<td>83/Q3+Q4</td>
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<tr>
<td>1084,185</td>
<td>327</td>
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### Distribution of International and National Journals

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<th></th>
<th>Total IF</th>
<th>No. of publications</th>
<th>%</th>
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<tbody>
<tr>
<td>International journals</td>
<td>999,364</td>
<td>269</td>
<td>88</td>
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<tr>
<td>National journals</td>
<td>84,821</td>
<td>58</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1084,185</strong></td>
<td><strong>327</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Regarding the affiliation of the authors, the papers published in collaboration with groups from other research centers are shown in the pie chart below:

### Distribution of the affiliation of the Authors

<table>
<thead>
<tr>
<th></th>
<th>Total IF</th>
<th>No. of publications</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborations with Internacional Groups</td>
<td>374,445</td>
<td>91</td>
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<tr>
<td>Intramural</td>
<td>218,725</td>
<td>86</td>
<td>26</td>
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<tr>
<td>Collaborations with National Groups</td>
<td>491,015</td>
<td>150</td>
<td>46</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1084,185</strong></td>
<td><strong>327</strong></td>
<td><strong>100</strong></td>
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</table>

### 10.2 List of Journals

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<th>Decil 1</th>
<th>International/National</th>
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<td>1</td>
<td>D1</td>
<td>International</td>
</tr>
<tr>
<td>American Journal of Transplantation</td>
<td>1</td>
<td>D1</td>
<td>International</td>
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<tr>
<td>Analytica Chimica Acta</td>
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<td>D1</td>
<td>International</td>
</tr>
<tr>
<td>Analytical Chemistry</td>
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<td>D1</td>
<td>International</td>
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<tr>
<td>Annals of Surgery</td>
<td>1</td>
<td>D1</td>
<td>International</td>
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<td>International</td>
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<td>Biomaterials</td>
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<td>Cell Metabolism</td>
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<td>Clinical Infectious Diseases</td>
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<tr>
<td>Clinical Journal Of The American Society Of Nephrology</td>
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<tr>
<td>Clinical Microbiology And Infection</td>
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<tr>
<td>Current Opinion In Immunology</td>
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<tr>
<td>Embo Journal</td>
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<td>D1</td>
<td>International</td>
</tr>
<tr>
<td>European Journal Of Heart Failure</td>
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<td>Fertility and Sterility</td>
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<tr>
<td>Food Chemistry</td>
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<tr>
<td>Frontiers in Neuroendocrinology</td>
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<td>Haematologica</td>
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<tr>
<td>Human Molecular Genetics</td>
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<tr>
<td>Human Reproduction</td>
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<tr>
<td>Integrated Computer-Aided Engineering</td>
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<td>Title</td>
<td>Impact Factor</td>
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<tr>
<td>International Journal Of Cardiology</td>
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<td>International</td>
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<td>International Journal Of Computer Vision</td>
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<td>International Journal Of Obesity</td>
<td>1 D1</td>
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<td>Jacc-Cardiovascular Interventions</td>
<td>1 D1</td>
<td>International</td>
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<tr>
<td>Journal of Hepatology</td>
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<td>Journal Of Antimicrobial Chemotherapy</td>
<td>1 D1</td>
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<td>Journal Of Chromatography A</td>
<td>1 D1</td>
<td>International</td>
<td></td>
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<td>Journal of Clinical Endocrinology &amp; Metabolism</td>
<td>1 D1</td>
<td>International</td>
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<td>Journal Of Hazardous Materials</td>
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<td>Journal of Invertebrate Pathology</td>
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<td>Journal Of Medicinal Chemistry</td>
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<td>Journals Of Gerontology Series A-Biological Sciences And Medical Sciences</td>
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<td>Kidney International</td>
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179
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<td>Nutrition Metabolism And Cardiovascular Diseases</td>
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11 Knowledge Transfer
11. Knowledge Transfer

One of the main issues which science and technology still has to address in our country is innovation. For instance, the data presented in the 2013 COTEC Report show that while Spain ranks tenth in the generation of knowledge, it lags behind in 30th position in terms of innovation ranking.

IMIBIC has been aware of this situation for some time and has worked hard on innovating through its Innovation Department, setting challenging targets for 2014 and accomplishing them. Innovation Department has grown and it is being able to reach to a greater number of healthcare professionals and so, fostering innovation within the organization.

The key for success in innovation in healthcare, from IMIBIC perspective, is to develop the right processes so that our know-how is translated efficiently into new resources (new products, services, procedures...).

In this context, the Innovation Department has carried out the following activities during 2014:

1. IMIBIC became part of ITEMAS platform (Innovation in Medical and Health Technologies), that seeks to promote innovation in health technology as a key tool to provide sustainability to the National Health System during 2013. As part of ITEMAS platform during 2014, the Innovation Management Area has become part of two of the Work Groups stablished on this platform: Entrepreneurship and Innovative Public Procurement and it is collaborating actively on their activities.

2. In the scope of the Innovation Department activities, more than 90 meetings with healthcare professionals and researchers took place. During these meetings, basics of innovation and technology transfer process were explained to them. Innovation culture was disseminated through those meetings, and easier the process to detect ideas, innovations and research results that could potentially be protected through Intellectual property.

3. With the purpose of creation an innovation culture, several presentations took place in different Medical Services, to different healthcare professionals (medical doctors, nurses...) in the scope of the hospital, allowing us to reach a huge number of professionals

4. Annual trade fairs, meetings and conferences were attended, with the purpose of networking with company representatives and with other research centers allowing to stablish links with them and enabling future collaborations between entities:

   a. Asamblea ITEMAS 2014, 7th February (Madrid).

   b. Foro Transfiere, 13th-14th February (Málaga), where several meetings took place in order to identify potential licensees for our technologies.

   c. Robotic Surgery Day, 26th March (Córdoba), In the framework of the Public Innovative Procurement project developed by the University of Córdoba in collaboration with IMIBIC, stakeholders involved in the field of robotic surgery were invited to join to the Robotic Surgery Day.

   d. Mission for Growth 2 de Abril (Sevilla): Meetings were held with companies from different areas (ICT, Biotech...).

   e. Biospain 2014, 24th – 26th September, Santiago de Compostela, where more than meetings with companies took place in order to identify potential licensees for our technologies and to enable potential research projects collaborations.

   f. ‘Innovation and Technology Transfer. From University to Society’ (Innovación y transferencia. De la Universidad a la Sociedad), where companies interested in technology transfer were present and that allowed the Innovation Management area to get in contact with some companies.

   g. Coordination meeting of regional partners from ITEMAS platform, 23rd October (Sevilla).

5. Participation in two European projects, in the modality of Coordination Support Actions (CSA), for the preparation of Pre Commercial Procurement tenders on the fields of e-health solutions and emergency services.

6. Creation of a Technology Innovation area. From the Innovation Management area the need of a more technological area was detected, as several of our innovations are related to IGTs. Since its creation, the Technology Innovation area has taken part in several research projects where application of technologies was needed.

7. Participation in new FIPSE call, aimed to fund viability studies on healthcare innovation projects. Two projects were presented to this call and one of them got funding to valorize the following technology: Polymorphisms of the angiotensin converting enzyme (ACE) to predict or prognose the response to antiangiogenics treatment for cancer.
As a result of all the activities described, the results shown in the table below were obtained:

<table>
<thead>
<tr>
<th>Evolution of Results</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>13</td>
<td>11</td>
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<tr>
<td>PCTs</td>
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<td>4</td>
<td>4</td>
<td>3</td>
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<td>Licenses</td>
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<td>0</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Spin-offs</td>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
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**Industrial and intellectual property patents**

During 2014, a total of 15 industrial/intellectual property patents were applied for:

<table>
<thead>
<tr>
<th>Title</th>
<th>Registry type</th>
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<tbody>
<tr>
<td>High-speed actioning tourniquete for emergencies</td>
<td>Utility Model</td>
</tr>
<tr>
<td>Method to obtain useful data for diagnosis of hepatocarcinoma on alcoholic patients suffering from hepatitis C.</td>
<td>National Patent</td>
</tr>
<tr>
<td>Composition for prevention, improvement and/or treatment of metastatic and resilient cancers</td>
<td>National Patent</td>
</tr>
<tr>
<td>Mesenchymal cells composition for musculoskeletal injuries</td>
<td>National Patent</td>
</tr>
<tr>
<td>Method for useful data acquisition for lung cancer patients screening.</td>
<td>National Patent</td>
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<tr>
<td>Circulating miRNAs as biomarkers of therapy effectiveness in Rheumatoid Arthritis patients treated with anti-TNFalpha</td>
<td>European Patent</td>
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<tr>
<td>Procedure to obtain useful data for angiogenesis detection on inferior limbs.</td>
<td>National Patent</td>
</tr>
<tr>
<td>Quality Control device for ionising radiations emitter equipment</td>
<td>National Patent</td>
</tr>
<tr>
<td>Endotraqueal tuve fixation</td>
<td>Utility Model</td>
</tr>
<tr>
<td>Consumable blade laringoscope</td>
<td>Utility Model</td>
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<tr>
<td>Polymorphisms of the angiotensin converting enzyme (ACE) to predict or prognose the response to antiangiogenics treatment for cancer</td>
<td>Patent Cooperation Treaty</td>
</tr>
<tr>
<td>Compositions for liver damage treatment.</td>
<td>Patent Cooperation Treaty</td>
</tr>
<tr>
<td>Device to cause ischemia on limbs</td>
<td>Patent Cooperation Treaty</td>
</tr>
<tr>
<td>Laparoscopic port</td>
<td>National Phase</td>
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12

Goals for 2015
12. Goals for 2015

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>To evaluate our Strategic Plan for 2010-2014, develop our strategic plan for 2015-2018 and submit it for approval by the Governing Council.</td>
</tr>
<tr>
<td>2</td>
<td>To move our research groups to the new experimental research building.</td>
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<tr>
<td>3</td>
<td>To develop our Biomedical Research Support Units, especially the isotopes, animal testing, microscopy, cytometry and proteomics units.</td>
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<tr>
<td>4</td>
<td>To start up and promote the area of clinical research by increasing the development of independent research activities.</td>
</tr>
<tr>
<td>5</td>
<td>To develop new strategies to promote IMIBIC’s image, affiliations and acknowledgement, and disseminate the scientific results obtained by its research groups.</td>
</tr>
<tr>
<td>6</td>
<td>To promote new strategies to increase fundraising through EU and national calls - including project and HR calls.</td>
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<tr>
<td>7</td>
<td>To promote new strategies to seek funds through sponsorship and fundraising from the private sector.</td>
</tr>
<tr>
<td>8</td>
<td>To enhance the involvement of Clinical Management Units in IMIBIC activities.</td>
</tr>
<tr>
<td>9</td>
<td>To continue the development of new strategies for the integration of new clinical and university research groups into the IMIBIC.</td>
</tr>
<tr>
<td>10</td>
<td>To develop new strategies for UCAIB units to improve the quality of their research projects.</td>
</tr>
<tr>
<td>11</td>
<td>To develop strategies to promote projects aimed at the acquisition of innovative products by public entities and foster involvement in new projects.</td>
</tr>
<tr>
<td>12</td>
<td>To increase IMIBIC’s autonomous management of resources.</td>
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