



# SCIENTIFIC REPORT

# 2023

INSTITUTO  
RAMÓN Y CAJAL DE  
INVESTIGACIÓN SANITARIA

**IR** y **CIS**



**Published by:**

IRYCIS

Ctra. de Colmenar Viejo, Km. 9,100

28034 Madrid

Tel. (+34) 91 336 81 47

[www.irykis.org](http://www.irykis.org)

[irykis@irykis.org](mailto:irykis@irykis.org)

**Editor-in-chief:**

Laura Barreales Tolosa

**Content Editors:**

Ana Moreno Bofarull

Esther Torrecilla García

**Technical Team:**

Eduardo Barrio Ferrero

Emma González Seiz

Clara López Montero

Ana Moreno Bofarull

Esther Torrecilla García

**Graphic design and Layout:**

Virginia Gutiérrez Pachés

---

**SCIENTIFIC  
REPORT**

**2023**

---

# INDEX

01	Message from the Scientific Director	6
02	Mission, Vision and Values	8
03	Structure and Organisation	9
04	FIBioHRC in Numbers	16
05	MREC-HURYC	20
06	ECAE-HURYC	22
07	IRYCIS Quality Committee	24
08	IRYCIS Human Resources	26
09	Equality in IRYCIS	28
10	IRYCIS Activity in Numbers	30
11	Communication	33
12	Top Ten Publications and Clinical Guidelines	36
13	Clinical Guidelines and Consensus Documents	37
14	Featured Milestones of IRYCIS	42
15	Impact on Society	48
16	Innovation Unit	58
17	Internationalisation	62
18	Main Networks, Platforms, Alliances and Consortia	69
19	Training	73
20	Scientific-Technical Departments of the IRYCIS Hospital	62
	Animal Facility and Experimental Surgery	77
	Biobank and Biomodels	78
	Clinical Biostatistics	80
	Lipidomic and Proteomic Characterisation	81
	Translational Genomics and Bioinformatics	82
	Clinical Research and Clinical Trials Unit	84
	Biomarkers and Therapeutic Targets	85
	Aptamers	86
	Data Science	88
	Microscopy, Histology and Comparative Pathology	89
	Support for Clinical Studies and Phase 2-4 Trials	90
	Other Scientific-Technical Departments	91

<b>21</b>	Priority Areas of IRYCIS	93
	AREA 1: Neurosciences, Sensory Organs and Mental Health	95
	Multiple Sclerosis Group	97
	Neurodegenerative Disease Group: Pathogenic Mechanisms	100
	Genetics and Sensorineural Pathophysiology Group	102
	Neurodegenerative Disease Group: Development of Therapies	105
	Psychiatric Disease Group	108
	Neuroproteins-Stroke Group	110
	Ophthalmology Group	113
	Experimental Dermatology and Cutaneous Biology Group	115
	Visual Neurophysiology Group	118
	AREA 2: Microbiology, Immunology and Infection	120
	Infectious Disease Group	122
	Biology and Evolution of Microorganisms Group	125
	Reprogramming of Prokaryotic and Eukaryotic Microbial Processes and Systems Group	129
	Health Results Research Group	131
	Individualised Translational Medicine in Inflammation and Cancer Group	134
	AREA 3: Cancer	136
	Molecular Pathology of Cancer Group	138
	Biomarkers and Personalised Approach for Cancer Group (BIOPAC)	140
	Intestinal Morphogenesis and Homeostasis Group	143
	Translational Haematology Group	145
	AREA 4: Tools for Advanced Medicine	147
	Nanomaterials for Bioimaging Group	149
	Aptamers Group	151
	Biomarkers and Therapeutic Targets Group	154
	Tissue Engineering and Regenerative Medicine Group	157
	Biomedical Research Group in Biomaterials and Healing (GIBBYC)	159
	Biological Chemistry Group	162
	Dendrimers for Biomedical Applications Group	164
	AREA 5: Chronic Diseases and Research in Surgery	166
	Lipid Metabolism Group	168
	Diabetes, Obesity and Human Reproduction Group	170
	Respiratory Diseases Group	172
	Cardiovascular Diseases Group	174
	Paediatrics Group	176
	Endocrine, Metabolic and Gastrointestinal Surgery and Nutrition Group	178
	Multisystem Diseases Group	181
	Liver and Gastrointestinal Diseases Group	184
	Geriatrics Group	186
	Surgical Research in Urology and Kidney Transplantation Group	188
	Renal and Vascular Physiology and Pathophysiology Group	191
	Diagnosis and Treatment of Allergic Diseases Group	193
	AREA 6: Epidemiology, Public Health and Health Care	196
	Epidemiology and Clinical Biostatistics Group	198
	Pharmacoepidemiology Group	201
	Physiotherapy in Women's Health Processes Group	203
	Incorporation of New Research Groups	205
<b>22</b>	Clinical Research Personnel Associated with IRYCIS	207

# Message from the Scientific Director

Dear IRYCIS members,

With enormous satisfaction, I present our Institute's 2023 Activity Report, **entirely prepared as always by our Foundation with our own means**. This year, the report is presented with a **new graphical design**, which will surprise you.

In 2023, IRYCIS continued to grow in its R&D work in the framework of the ATENEA 2021-2025 strategic plan, having already executed 50% of its plans and actions. Our advisory bodies, the Research Commission and the External Scientific Committee, and all the Institute's committees and workgroups (Committees for Training, Quality, Innovation, Equality and Communication Groups and for Research Staff Support) have been the key for strategic decision making and in the implementation of ATENEA.

My acknowledgements and most sincere thanks to their contribution to our MISSION: to have a positive impact on patients and society.

Regarding the fulfilling of the ATENEA 2021-2025 strategic plan, allow me to highlight four relevant milestones of 2023 that demonstrate our commitment to the future: i) **the establishment of the R1 Research Staff Group**, after the kick-off that took place with the First Doctoral Student Research Conference (JOINED), held at the end of 2022, as well as the consolidation of the R2 Group. Both groups of young researchers ensure the scientific future of the translational research institutions and are the exemplary evidence of the unit's direction and lack of distinction between the various profiles that coexist in IRYCIS: clinical research staff, who work in the Hospital, and basic and translational staff, who work both in the Hospital and in the Universities. The presence of these R1 and R2 profiles and their excellent efforts has made them the main beneficiaries of the second milestone of 2023: ii) **the visit by a Nobel Prize winner!** Thanks to the Nobel Prize Foundation of AstraZeneca and after more than a year of tireless work from the Scientific Management of IRYCIS and from the Management of our FI-BioHRC, Professor Michael Rosbash, Nobel Prize winner in Medicine and Physiology for his discovery and decoding of circadian rhythms, shared an entire day with IRYCIS members and with those who accompanied us. Our Hospital's auditorium was filled to capacity! He enlightened us with a magnificent display of his studies. In a round table and a subsequent meeting with our young researchers, we shared with him the challenges facing the new generations and how institutions such as IRYCIS must help address them. This day was itself the start of the "**IRYCIS Mentoring Plan**", which covers these and other aspects regarding the support and guidance of research careers. Beyond the honour that this has been for IRYCIS, Professor Rosbash's visit was the grand finale for the third milestone: iii) **In 2023, our FI-BioHRC completed 20 years of life**, a life that has filled with pride all of us who witnessed its birth, experienced its growth and now enjoy its maturity. One cannot conceive of IRYCIS and its R&D without the presence of FIBioHRC. Congratulations, and here's to many more years! iv) The fourth milestone that I would like to note, which is closely aligned to our future strategic approach, our expectations as an institute and following the path started in 2022 with the 2030 IRYCIS MISSION programme, is the tremendous joint work with which IRYCIS has responded to the "**Fortalece**" [Strengthen] **call of ISCIII and everyone's commitment**, an opportunity to present as an Institute new proposals for strengthening. With the help of advisory committees (external and internal), with shortened holidays and in the insufferable heat of August, a large workgroup went to work while also working on the **renewal of 3 ISCIII platforms: Biobanks and Biomodels, Clinical Trials and Revitalisation of Innovation**. In addition, we achieved all of this with a plenary session on the 15th Anniversary of our Research Foundation (FIBioHRC).



The commitment to science and to our ATENEA 2021-2025 strategic plan, aimed at **positively impacting society and improving the life of patients and citizens**, still stands thanks to **more than 1,200 individuals, 338 associated clinical research staff (ACRS) and 44 research groups** that make up IRYCIS. The almost **1,500 active projects** and all the indicators reflected in this report are evidence of our great work, highlighted this year by the **72 awards**. We are also an **international reference** institute in the approach to major health challenges such as antibiotic-resistance, cardiovascular disease and new anticancer therapies. In the framework of the European infrastructure for translational research EATRIS, we have led **27 national Health Research Institutes (HRI)** in a **pilot experience** to reach a consensus on a European strategy for patient engagement: **We will be the reference in Europe for the inclusion of patients and society in the daily life of an HRI.**

In 2023, a new **Director Manager and President of IRYCIS** was incorporated, **Dr Carlos Mingo**, which has given us the opportunity to integrate new visions and implement improvements. Dr Carlos Mingo, welcome to this great family!

This report is a reflection of the vast quality work conducted over 365 days.... but beware! 2024 has one extra day. Enjoy these pages and consider yourselves participants in the results. Let us boast about IRYCIS and its report because **we are all called to be IRYCIS. CONGRATULATIONS!**

**M<sup>a</sup> Laura García Bermejo**  
Scientific Director



# Mission, vision and values

02

## Mission

To be a space dedicated to biomedical research of excellence, aimed at generating useful knowledge in identifying and treating current and potential diseases and thus with a notable translational character and with the aim of becoming a national and international reference, applying a philosophy of quality and continuous improvement to all of its activities.

## Vision

To lead basic, clinical and translational scientific research, being a trusted reference for society, for the scientific community and for public and private institutions at the national and international levels.

To contribute significantly to the generation of new knowledge, to its application in healthcare practice and in the business environment, and to the training of new biomedical researchers.

To identify, by searching for its singularities, a scientific hallmark that helps provide added value to the national and international panorama of scientific and biomedical research institutions of excellence.

To work in collaboration with society in the continuous search for the social impact of the Institute's R&D.

## Values

Search for excellence

Leadership

Innovation and orientation to the transfer of results

Internationalisation

Orientation towards the problems and interests of populational health

Basic clinical and multidisciplinary collaboration

Technical training

Effective Management

Comprehensive quality

Professional recognition

Dissemination of research activities





# Structure and Organisation

## IRYCIS Members

Instituto Ramón y Cajal consists of Servicio Madrileño de Salud, Universidad de Alcalá, Universidad Complutense de Madrid, Universidad Autónoma de Madrid, Fundación para la Investigación Biomédica del Hospital Universitario Ramón y Cajal and Dirección General de Investigación y Docencia de la Comunidad de Madrid, by a partnership signed on December 15, 2009, an institutional partnership extended to December 14, 2017, and renewed for the last time in February 2022, which reinforces this alliance indefinitely.

### Madrid Department of Health

Through Hospital Universitario Ramón y Cajal, which constitutes the basic core of the Institute

### Universidad de Alcalá

The university that confers a university character to the Hospital and provides eight groups to IRYCIS

### Universidad Complutense

Through the participation of three research groups

### Universidad Autónoma de Madrid

Through the participation of three research groups

### Fundación para la Investigación Biomédica del Hospital Universitario Ramón y Cajal

As the only management structure of the Institute

### Directorate General of Research and Academic Affairs

As an organism of the Community of Madrid in the setting of regional scientific policy



# Structure and Organisation

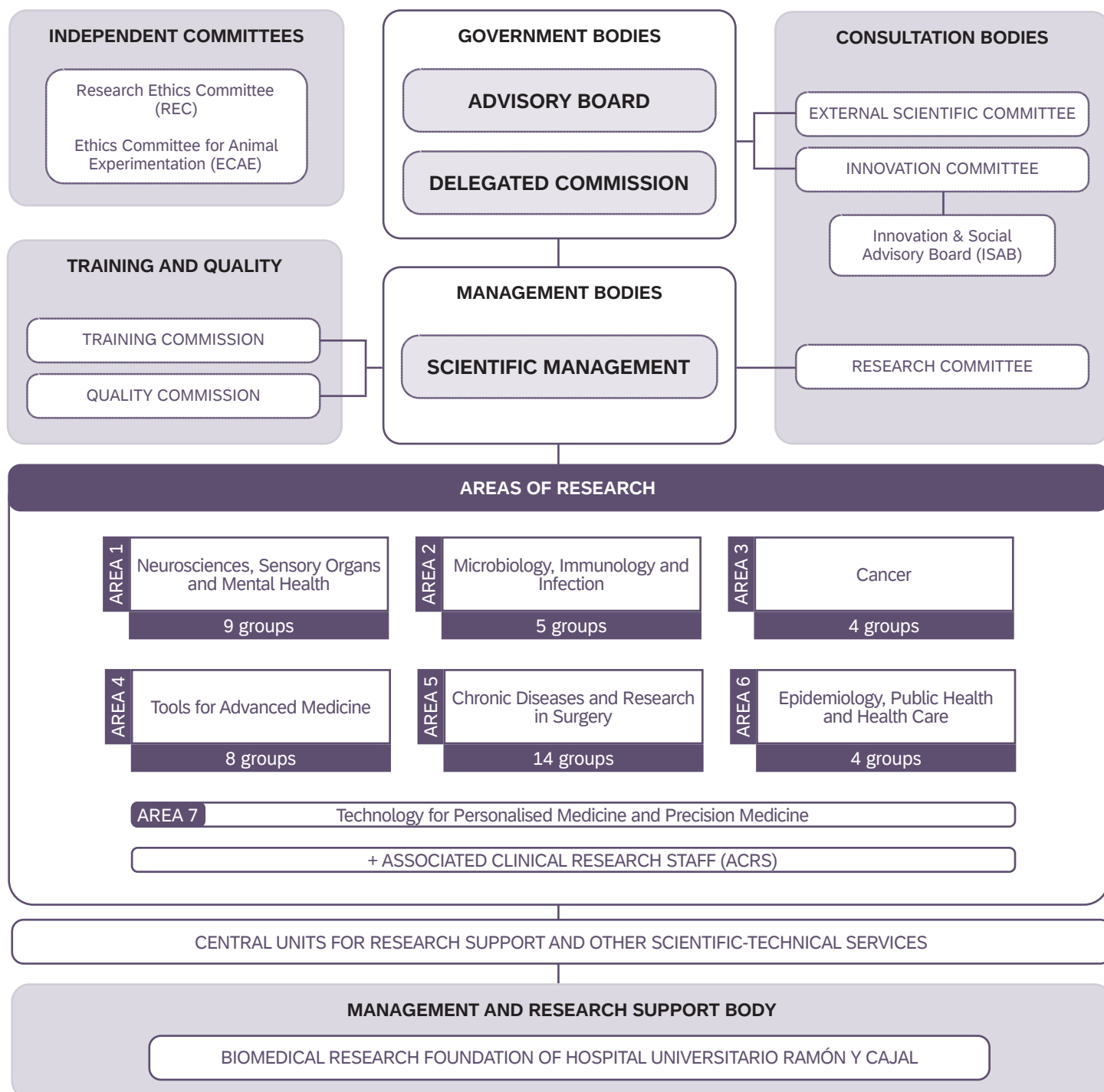
## Organisational structure

IRYCIS organises its research into 6 priority subject areas with 44 research groups: 35 consolidated, 6 established and 3 emerging.

The **consolidated and established groups** have at least one Principal Investigator (PI), i.e., a PI of an active national or international competitive public project in the past 2 years, and must certify having a public competitive funding overlap during at least the past 6 years, for consolidated groups, or 3 years for established groups. Furthermore, they must certify having a scientific output over the past 5 years, with more than 70% of publications led positioned in Q1 and Q2 if consolidated (or in D1 if collaborative); this percentage is 50% if they are established. The **“Accessing” groups** must certify having at least one application as PI of a competitive public project (national or international) in the past 2 years and a scientific output with 40% of publications led in the past 5 years.

**Associated Clinical Research Staff (ACRS)** also contribute to IRYCIS research. ACRS are healthcare staff of Hospital Universitario Ramón y Cajal who, not being ascribed to any IRYCIS group, over the past 3 years implement research and/or competitive innovation projects (public or private, national or international) and clinical studies in their capacity as PI or contribute to signing indexed research publications.

In all the groups, the innovation and transference activity are also assessed, as well as the conferences by invitation, dissemination activities and societal impact.



# Structure and Organisation

03

## Composition of the government entities and consultants of IRYCIS

### Advisory Board

#### CHAIR

**CARLOS MINGO RODRÍGUEZ**  
Managing Director of Hospital Universitario Ramón y Cajal  
Chair of FIBioHRC.

#### VICE-CHAIR

**JORGE PÉREZ SERRANO**  
Vice-rector of Studies of Grade and Access  
Rector's Delegate for Health Affairs. Universidad de Alcalá.

#### MEMBERS

**AGUSTÍN ALBILLOS MARTÍNEZ**  
Professor. Subdirector of the Department of Medicine and Specialties. Universidad de Alcalá.

**MELCHOR ÁLVAREZ DE MON SOTO**  
Professor. Department Head of Medicine and Specialties.  
Universidad de Alcalá.

**PEDRO DE LA VILLA POLO**  
Professor. Systems Biology. Universidad de Alcalá.

**ISMAEL GALVE ROPERH**  
Associate Professor. Department of Biochemistry and Molecular Biology. Faculty of Biomedical Sciences. Universidad Complutense de Madrid.

**DANIEL JAQUE GARCÍA**  
Vice-rector of Scientific Policy. Universidad Autónoma de Madrid.

**M<sup>a</sup> LAURA GARCÍA BERMEJO**  
Director of IRYCIS. Tenured Investigator. Chair of the Research Committee



# Structure and Organisation

03

## Scientific Management

**M<sup>a</sup> LAURA GARCÍA BERMEJO**

Tenured Investigator. FIBioHRC.

Chair of the Scientific Commission of FIBioHRC

## External Scientific Committee

**JAVIER DEFELIPE OROQUIETA**

Head of the Normal Microorganisation of the Cerebral Cortex and Circuit Disorders Group. Dept. of Functional Neurobiology and of Systems of Instituto Cajal (CSIC).

**FRANCISCO GARCÍA DEL PORTILLO**

Research Professor. National Biotechnology Centre- CSIC. Madrid.

**JOSÉ ANTONIO GUTIÉRREZ FUENTES**

Director of Fundación GADEA por la Ciencia.

**MANUEL ROMERO GÓMEZ**

Managing Director Hospital Universitario Virgen del Rocío, Seville. Professor of Medicine, Universidad de Sevilla.

**LLUÍS BLANCH TORRA**

Director of Innovation of Hospital Parc Taulí. Chair of Sociedad Española de Medicina Intensiva. Corporació Sanitària Parc Taulí.

**FERNANDO MARTÍN SÁNCHEZ**

Research Professor. Coordinator of the Digital Health Programme. Escuela Nacional de Sanidad. ISCIII.

**GEMA FRÜHBECK MARTÍNEZ**

Director of the Metabolic Research Laboratory of Clínica Universidad de Navarra.

**JOSÉ GERARDO GARCÍA-LERMA**

Head of the Antiretroviral Prophylaxis Group. Laboratory Branch. Division of HIV/AIDS Prevention. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. CDC. USA.

**M<sup>a</sup> ISABEL FABREGAT ROMERO**

Head of the TGF-Beta and Cancer Group. Institut d'Investigació Biomèdica de Bellvitge. Professor at Universidad de Barcelona.

**LAURA LECHUGA GÓMEZ**

CSIC Professor Head of the Nanobiosensors and Bioanalytical Applications group of ICN2. Instituto Catalán de Nanociencia y Nanotecnología. Barcelona.

**LAURA SÁNCHEZ PIÑÓN**

Professor of Genetics and Head of the ZebraBioRes group. Faculty of Veterinary Medicine. Department of Zoology, Genetic and Physical Anthropology. Universidad de Santiago de Compostela.

**M<sup>a</sup> TERESA MORENO CASBAS**

Head of the Healthcare Research Unit of ISCIII (INVESTEN). Director of the Centro Colaborador Español Joanna Briggs para los Cuidados Basados en la Evidencia (CECBE).

## Board of Trustees

(the trustees are, in turn, members of the Advisory Board)

### CHAIR

**CARLOS MINGO RODRÍGUEZ**

Managing Director of Hospital Universitario Ramón y Cajal. Chair of FIBioHRC.

### VICE-CHAIR

**AGUSTÍN UTRILLA LÓPEZ**

Medical Director of Hospital Universitario Ramón y Cajal

### MEMBERS

**ANA MARÍA ÁLVAREZ DÍAZ**

Head of the Pharmacy Department. Hospital Universitario Ramón y Cajal.

**FERNANDO BAQUERO MOCHALES**

Chair of the FIBioHRC Advisory Council.

**RAFAEL CANTÓN MORENO**

Department Head of Microbiology. Hospital Universitario Ramón y Cajal.

**M<sup>a</sup> LAURA GARCÍA BERMEJO**

Chair of the FIBioHRC Scientific Committee.

**ÁNGELA IBÁÑEZ CUADRADO**

Department Head of Psychiatry. Hospital Universitario Ramón y Cajal.

**FERNANDO LIAÑO GARCÍA**

Investigator Emeritus of IRYCIS and of SERMAS.

**FRANCISCO JAVIER DE LA MATA DE LA MATA**

Vice-rector of Research and Transference. Universidad de Alcalá.

**M<sup>a</sup> LUZ DE LOS MÁRTIRES ALMINGOL**

Director General of Research, Academic Affairs and Documentation. Ministry of Health of the Community of Madrid.

**SONSOLES SANCHO GARCÍA**

Chair of the Research Ethics Committee. Hospital Universitario Ramón y Cajal.

### SECRETARY

**LAURA BARREALES TOLOSA**

Director of FIBioHRC.

# Structure and Organisation

03

## Research Committee

### PRESIDENTA

M<sup>a</sup> LAURA GARCÍA BERMEJO.  
IRYCIS Scientific Director.

### EXECUTIVE CHAIR

VÍCTOR MANUEL GONZÁLEZ MUÑOZ  
Head of the Aptamers Group.

### SECRETARY

ROSA M<sup>a</sup> DEL CAMPO MORENO  
Principal Investigator. Biology and Evolution of Microorganisms Group.

### MEMBERS

FEDERICO LONGO MUÑOZ  
Contributing Investigator Biomarkers and Personalised Approach for Cancer Group (BIOPAC).

M<sup>a</sup> LUISA SALIDO TAHOSES  
Contributing Researcher. Cardiovascular Diseases Group.

SERGIO SERRANO VILLAR  
Director of Area 2 of IRYCIS. Principal Investigator Infectious Diseases Group.

JAVIER ZAMORA ROMERO  
Director of Area 6 of IRYCIS. Head of the Epidemiology and Clinical Biostatistics Group.

M<sup>a</sup> ELENA MARTÍN PALMA  
Director of Area 4 of IRYCIS. Principal Investigator of the Aptamers Group.

ROCÍO HINOJAR BAYDES  
Director of Area 5 of IRYCIS. Principal Investigator of the Cardiovascular Diseases Group.

DIEGO VELASCO ESCRIBANO  
Head of R&D Office of FIBioHRC and Director of the Innovation Unit.

M<sup>a</sup> ÁNGELES GÁLVEZ MÚGICA  
Head of the Clinical Research and Early-phase Clinical Trials Unit.

M<sup>a</sup> ROSA INSENSER NIETO  
Postdoctoral representative/ R2. Researcher of the Diabetes, Obesity and Human Reproduction Group.

ALEJANDRO ESCOBAR PESO  
Predoctoral representative/ R1. Researcher of the Neuroproteins-Stroke Group.

ALICIA MANSILLA APARICIO  
(UAH Representative)  
Director of Area 1 of IRYCIS. Principal Investigator of the Visual Neurophysiology Group.

MANUEL GUZMÁN PASTOR  
(UCM Representative)  
Director of Area 1 support of IRYCIS. Head of the Neurodegenerative Diseases Group: Pathogenic Mechanisms.

BRUNO SÁINZ ANDING  
(UAM Representative)  
Director of Area 3 of IRYCIS. Head of Biomarkers and Personalised Approach for Cancer Group (BIOPAC)

LAURA CARRASCO MARÍN  
(Representation of society)  
Director of Asociación Parkinson Madrid.

SONIA CAMAÑO PAEZ  
Head of the Quality Committee. Coordinator of the Central Support Unit (CSU) for Biobank and Biomodels.



# Structure and Organisation

# 03

## Innovation Commission

M<sup>a</sup> LAURA GARCÍA BERMEJO  
Director of IRYCIS.

LAURA BARREALES TOLOSA  
Director of FIBioHRC.

DIEGO VELASCO ESCRIBANO  
Head of R&D Office of FIBioHRC and Director of the Innovation Unit.

## Quality Committee

### CHAIR

SONIA CAMAÑO PÁEZ  
Quality Manager. CSU Biobank and Biomodels.

### SECRETARY

EMMA GONZÁLEZ SEIZ  
Quality Manager. Innovation Unit.

### MEMBERS

ITZIAR DE PABLO LÓPEZ DE ABECHUCO  
Quality Manager. Clinical Research and Early-phase Clinical Trials Unit.

ANA PÉREZ SANCHO  
FIBioHRC Quality Manager.

PURIFICACIÓN PASTOR FRUCTUOSO  
Head of the Quality Management System of Hospital Universitario Ramón y Cajal.

## Training Commission

### CHAIR

CAROLINA DE LA PINTA ALONSO  
Area Medical Specialist of the Department of Radiation Oncology. University Hospital.

### SECRETARY

JUAN CARLOS MURCIANO FERNÁNDEZ  
Associated Researcher of FIBioHRC.

### MEMBERS

REBECA BUSTO DURÁN  
Contributing Researcher Lipid Metabolism Group.

VIRGINIA GUTIÉRREZ PACHÉS  
Manager Office of FIBioHRC Projects.

ALFONSO MURIEL GARCÍA  
Senior Researcher Epidemiology and Clinical Biostatistics Group.

M<sup>a</sup> ELENA MARTÍN PALMA  
Director Area 4 of IRYCIS. Principal Investigator Aptamers Group.

VAL FERNÁNDEZ LANZA  
Head of Bioinformatics. CSU Translational Genomics and Bioinformatics.

PEDRO DE LA VILLA POLO  
Professor at Universidad de Alcalá. Head of the Visual Neurophysiology Group.

NATALIA RODRÍGUEZ  
Head of Residents Hospital Universitario Ramón y Cajal.

JERÓNIMO RODRÍGUEZ BELTRÁN  
Miguel Servet Investigator. Biology and Evolution of Microorganisms Group.

MARÍA BELÉN DE LA HOZ CABALLER  
Department Head of Allergology. Head of the Research Group in Allergic Diseases.

VICTORIA GÓMEZ DOS SANTOS  
Area Medical Specialist Department of Urology. Principal Investigator of the Surgical Research in Urology and Kidney Transplantation Group.

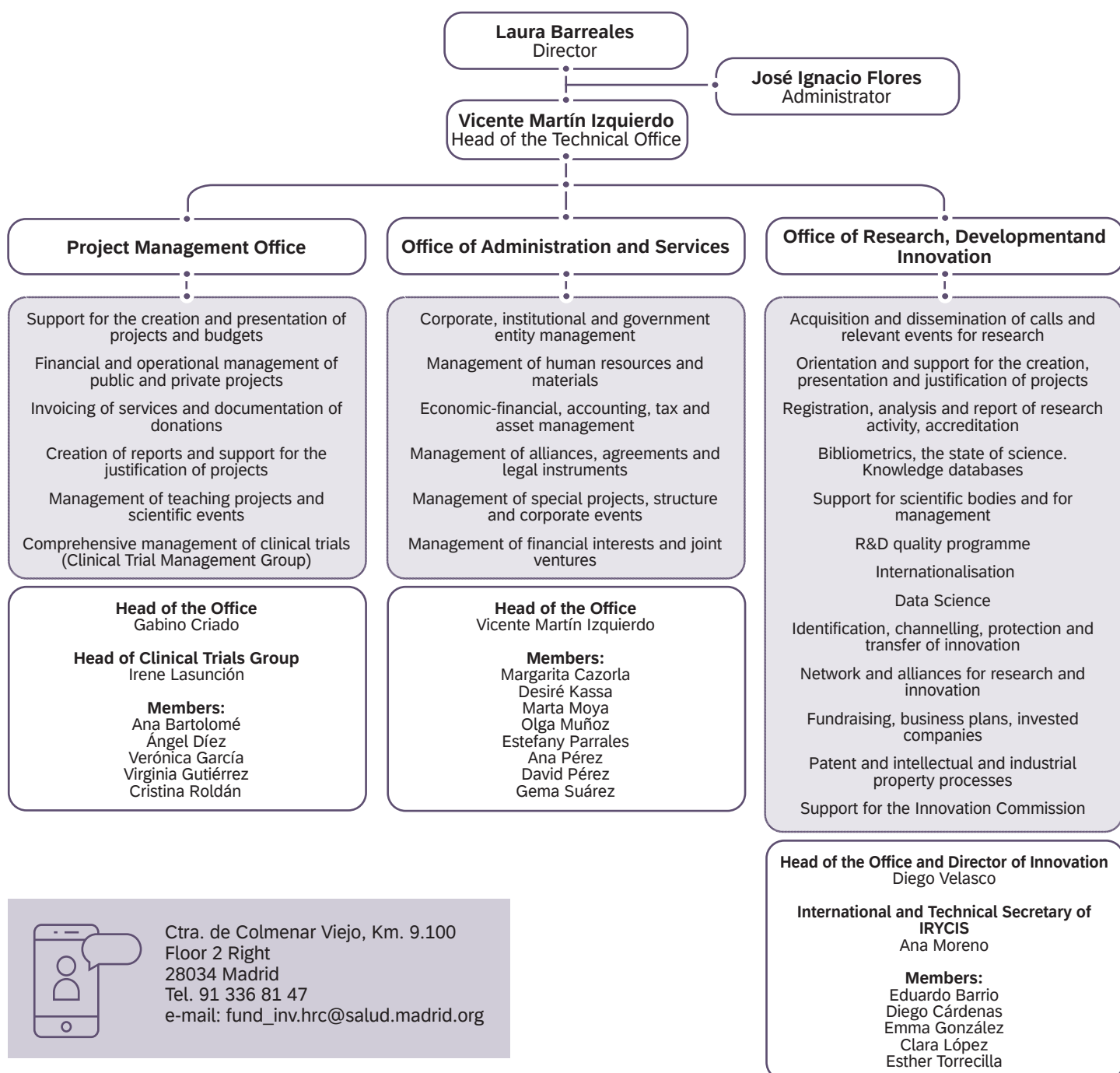
JOSÉ AVENDAÑO ORTIZ  
Postdoctoral Investigator Sara Borrell. Biology and Evolution of Microorganisms Group.



# Structure and Organisation

## Fundación para la Investigación Biomédica del Hospital Universitario Ramón y Cajal (FIBioHRC) - Management Organ of IRYCIS

La FIBioHRC es el órgano encargado de la gestión y administración de los recursos y del patrimonio de la entidad, así como del apoyo para el desarrollo y fomento de la investigación y la innovación y de otros planes de actuación. Constituye el soporte técnico-administrativo del Instituto y la estructura encargada de la gestión integral de la investigación e innovación del IRYCIS.



Ctra. de Colmenar Viejo, Km. 9.100  
Floor 2 Right  
28034 Madrid  
Tel. 91 336 81 47  
e-mail: fund\_inv.hrc@salud.madrid.org

# FIBioHRC in numbers

## Human Resources

Average number of full-time equivalent employees



Individuals dedicated to R&D management



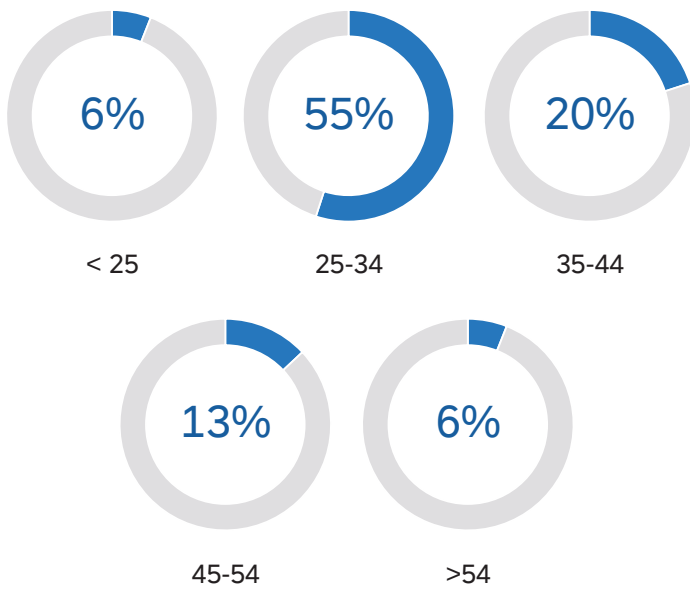
Non-Spanish nationality



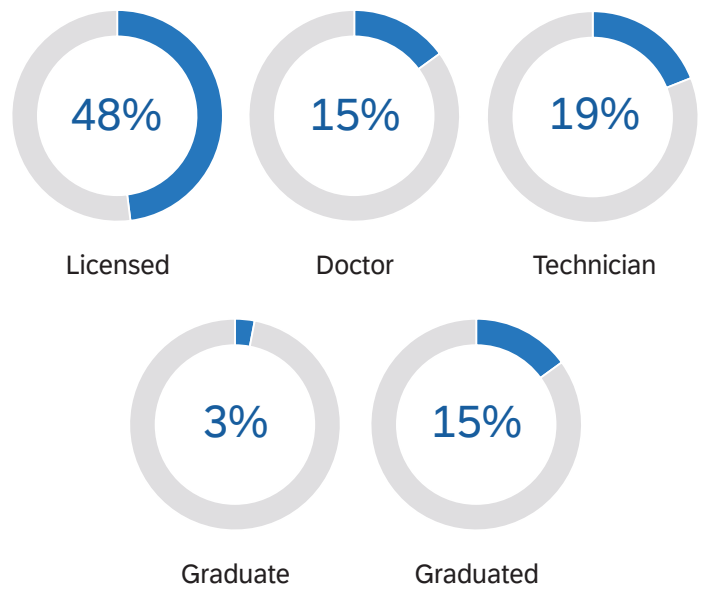
Mean age, years



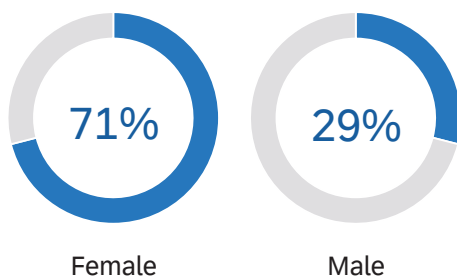
Age distribution of the contracted staff



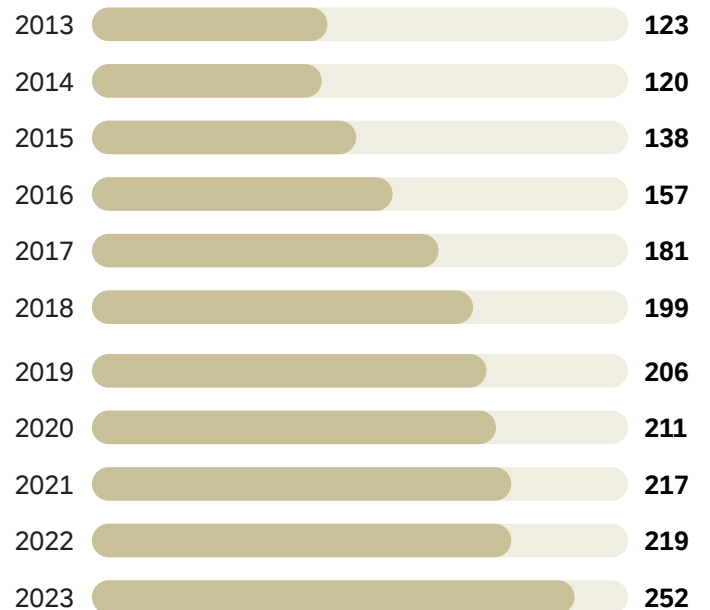
Academic degree distribution of the contracted staff



Distribution by sex of the contracted personnel



Evolution of the average full-time equivalent workforce of FIBioHRC in recent years

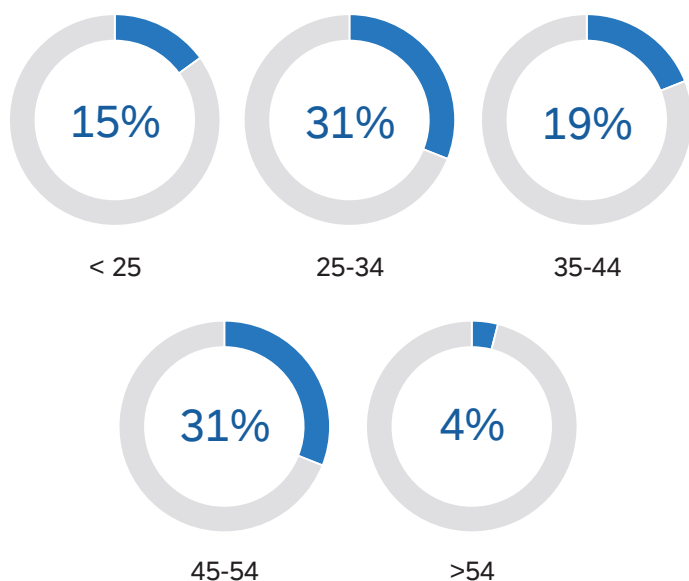




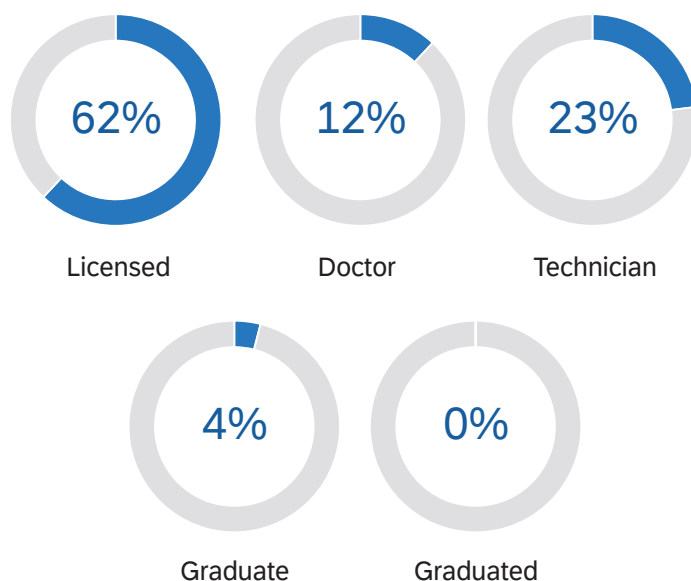
# FIBioHRC in numbers

## HR Technical Office of R&D Management

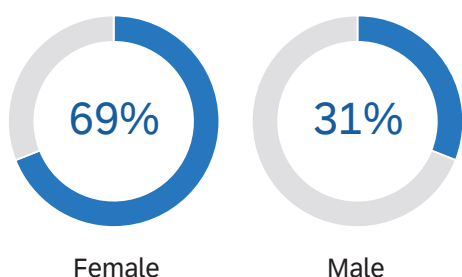
### Age distribution of the staff of the Technical Office of FIBioHRC



### Academic degree distribution of the staff of the Technical Office of FIBioHRC



### GENDER DISTRIBUTION of the staff of the Technical Office of FIBioHRC



# FIBioHRC in numbers

04

## Indicators of Activity in 2023

New staff contracts

116 

Employment calls

91 

Active research projects

1.489 

Active innovation projects

129 

Patent families

28 

Validated publications

1.242 

Competitive applications

200 

Contracts and research agreements signed

232 

Active framework agreements

30 

Signed agreements for the transfer of material or data

5 

Signed confidentiality agreements

16 

New donations

59 

Procuring procedures

16 

New teams

82 

Processed invoices

9.538 

Courses and events

81 

Stays/rotations processed

52 



# FIBioHRC in numbers

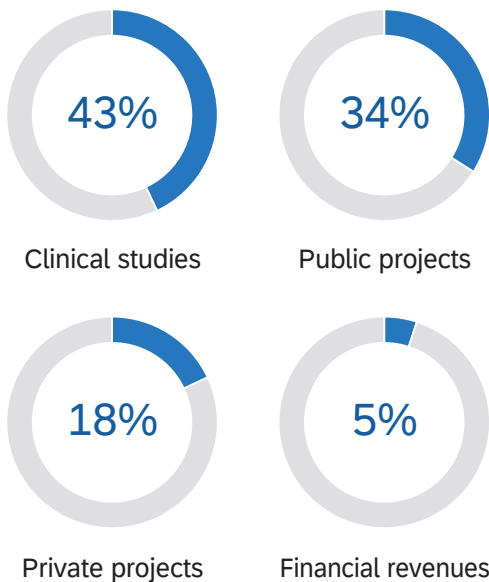
## Financial information

In accordance with Law 19/2013 of 9th December on transparency, access to public information and good government, Fundación para la Investigación Biomédica del Hospital Universitario Ramón y Cajal (FIBioHRC) publishes its information to ensure institutional transparency

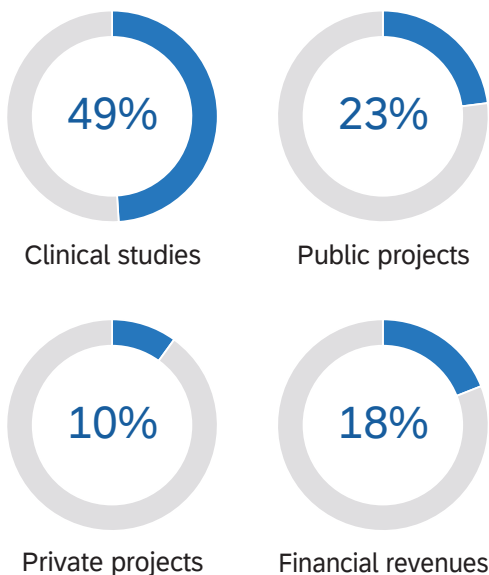
Summarised balance of FIBioHRC 2023

ACTIVE		NET AND PASSIVE ASSETS	
Non-current assets	19,690.27€	Net assets	25,486,160.24€
Current assets	56,429,852.17€	Non-current liabilities	0.00€
		Current liabilities	30,963,382.20€
<b>Total active</b>	<b>56,449,542.44€</b>	<b>Total Assets, net and passive</b>	<b>56,449,542.44€</b>

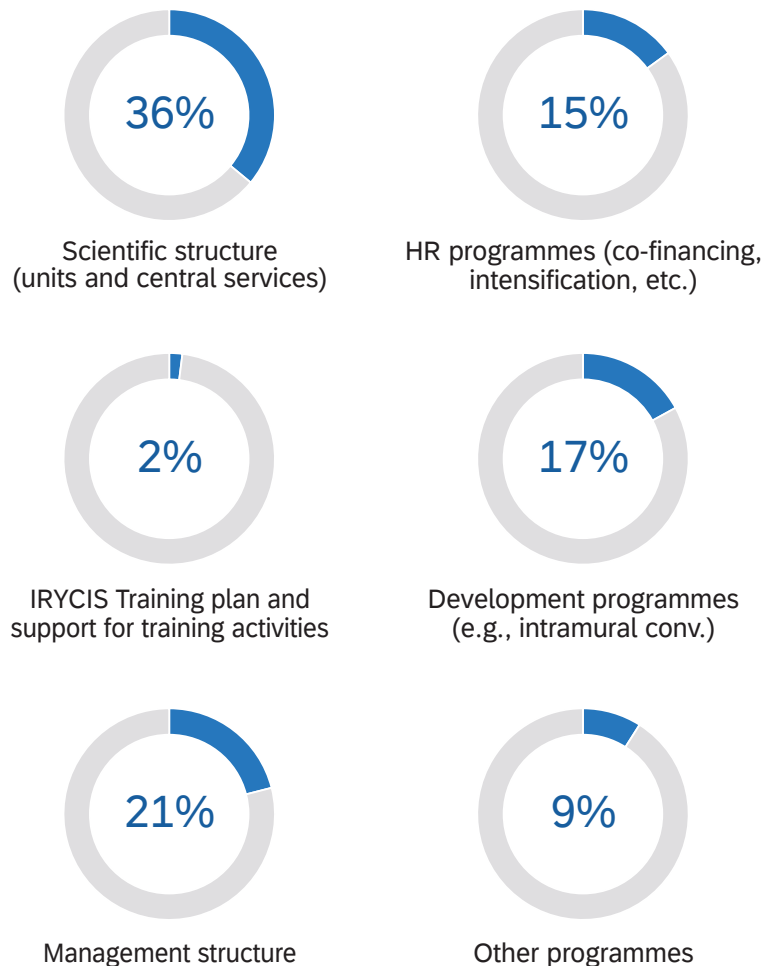
**Total revenue by origin 2023**  
(€23,172,526.39)



**Total indirect costs by origin 2023**  
(€6,494,005.04)



**2023 Action Plan (€3,575,430.20)**



## Medical Research Ethics Committee of Hospital Universitario Ramón y Cajal (MREC-HURYC)

Affairs of the Ministry of Health of the Community of Madrid (Pharmaceutical Control and Healthcare Products area). The committee's scope of action is national for all types of clinical research studies and has exercised the function of External Ethics Committee of the Hospital's Biobank since its creation.

MREC-HURYC prepares an annual report that includes the clinical research sent for its review and approval by this committee. Since its accreditation as MREC, the committee has been able to evaluate any clinical research project performed at the national level that is submitted to it.



**CHAIR**  
Sonsoles Sancho García

**VICE-CHAIR**  
M<sup>a</sup> Ángeles Gálvez Múgica

**SECRETARY**  
Itziar de Pablo López de Abechuco

**MEMBERS:** 15



Responsible Technical Secretary: Itziar de Pablo  
Tel. 91 336 88 25  
itziar.pablo@salud.madrid.org

Administrative personnel:  
Mariano Sánchez y Ana Castro  
Tel. 91 336 83 22  
ceic.hrc@salud.madrid.org

## Indicators of activity of MREC-HURYC in 2023

Plenary meetings, face-to-face or online

**17** 

MREC evaluator in 10 clinical studies with healthcare product

**10** 

Favourable decision

**93%** 

Evaluated studies

**330** 

### EVALUATION OF

**330**  
new studies (98% of the Hospital)

**178**  
relevant amendments

**12**  
requests for sample transfer, 3 amendments of previous requests and 2 incorporations of Biobank collections

### REVIEW OF

**133**  
studies (no clinical trials) performed in the centre and evaluated by another REC/MREC

**65**  
observational studies with drugs (OSDs)

**78**  
research projects

**172**  
other types of studie

**15**  
clinical studies with healthcare product

# MREC-HURYC

Evolution of MREC-HURYC activity over the last 5 years

Global activity of MREC-HURYC

	2019	2020	2021	2022	2023
No. of MREC meetings	22	26	20	21	17
No. of technical reports	22	24	20	21	17
Total No. of registered studies	339	460	374	372	330
Clinical Trials WITH DRUGS	17	34	31	24	0
Observational studies - EPAS	49	47	23	6	65
Observational studies - OTHER	189	292	285	288	172
Research projects	84	87	35	43	78
Clinical research with healthcare product				11	15
Total No. of amendments evaluated	189	138	185	167	178

The MREC shows no assessment indicators of clinical trials (CT) with medications. Starting in 2023, all sponsors are required to submit CTs with medication for their evaluation to an MREC that adheres to the Collaboration Memorandum with AEMPs, sending the CT requests through the Clinical Trial Information System (CTIS). The MREC of Hospital Universitario Ramón y Cajal is not bound to the AEMPs Collaboration Memorandum to include CT in CTIS.



## Ethics Committee for Animal Experimentation of Hospital Universitario Ramón y Cajal (ECAE-HURYC)

The Ethics Committee for Animal Experimentation (ECAE) of Hospital Universitario Ramón y Cajal is established as a requirement of the community regulations (Directive 2010/63/UE) and its subsequent incorporation to the Spanish legal system (Royal Decree 53/2013, of February 1), which establishes the basic applicable regulations for protecting animals used in experimentation and other scientific purposes, such as teaching.

On January 21, 2014, this ECAE was recognised by the Ministry of the Environment and Land Management of the Community of Madrid as an Authorized Body for evaluating research projects and teaching that involve the use of animals.

### Structure

Renewal of the ECAE composition on July 13, 2022 due to the appointing of the Management of the Hospital Universitario Ramón y Cajal. ECAE members:



#### CHAIR

Dr. Federico Soria Gálvez

#### SECRETARY

Dr. Oscar Pastor Rojo

#### MEMBERS: 11 members

- D<sup>a</sup> Mónica Castro Camarero
- D<sup>a</sup> Covadonga Maese del Valle
- Dra. Antonia Martín Hidalgo
- Dr. Juan Carlos Murciano Fernández
- Dr. Carlos Zaragoza Sánchez
- Dr. Fernando Almeida Parra
- Dra. Victoria Gómez Dos Santos
- Dr. Jesús Lázaro Carrasco de la Fuente
- Dr. Eduardo Lobo Martínez
- Dr. Nicolás Moreno Mata
- D<sup>a</sup> Beatriz Berrocal López

Incorporation of Dr Federico Soria Gálvez as Chair of ECAE on January 24th, 2023 (ECAE Minutes 01/2023).

Incorporation of Beatriz Berrocal López as Member of ECAE on December 13th, 2023.



#### Administrative personnel:

Ricardo Pantoja Crespo  
Rosa Castro Damián  
Secretary Knowledge Management  
Tel. 91 336 84 47  
ceea.hrc@salud.madrid.org



## Indicators of activity of ECAE-HURYC in 2023

### Projects assessed by ECAE

**7** 

**4**

Mouse projects: basic research

**2**

Rat projects: basic and/or translational research

**1**

Project with pigs and/or sheep: teaching

### Studies evaluated as Authorized Body (AB)

**7** 

**4**

Mouse projects: basic research

**2**

Rat projects: basic and/or translational research

**1**

Project with pigs and/or sheep: teaching

### Favourable report

**100%** 

## Progress of activity of ECAE-HURYC over the past 5 years

ECAE ACTIVITY	2019	2020	2021	2022	2023
Entry of files	6	9	10	7	6
Provisional reports issued	3	4	3	2	7
Projects assessed	3	7	7	6	7
Projects not completed by the PI	0	0	1	2	0
FAVOURABLE Reports	3	7	6	4	7
UNFAVOURABLE Reports	0	0	0	0	0
Percentage of FAVOURABLE/ASSESSED reports	100%	100%	86%	67%	100%

ECAE ACTIVITY as AB	2019	2020	2021	2022	2023
Application of evaluation received	2	7	5	5	7
Applications for evaluation accepted	2	7	5	5	7
Processing not completed by the PI	0	0	0	0	0
FAVOURABLE evaluation reports	2(100%)	7(100%)	5(100%)	5 (100%)	7 (100%)
UNFAVOURABLE evaluation reports	0	0	0	0	0
HURYC Projects animal experimentation AUTHORIZED by the Competent Authority (Community of Madrid)	2	7	5	5	6*

\* 1 pending authorisation, in term.

# IRYCIS Quality Committee

The IRYCIS Quality Committee's mission is the development and management of the Institute's competencies regarding quality, through the implementation and compliance with its policy of quality, integrated quality in its strategic planning and structure, enhancing the channels of participation, reinforcing alliances with the Hospital, increasing the satisfaction of its interest groups and promoting the identification and implementation of improvement activities.

IRYCIS has a Quality Plan, designed to express the activities to be implemented to ensure that quality is a part of all activities conducted in the Institute, that the Institute's dynamics are monitored under quality criteria and that the policy of quality is disseminated and complied with.



## Structure



### CHAIR

**D<sup>a</sup> Sonia Camaño**

Coordinator and Head of Quality of the Hospital Biobank - IRYCIS

### SECRETARY

**D<sup>a</sup> Emma González**

Coordinator and Head of Quality of the Innovation Unit - IRYCIS

### MEMBERS

Itziar de Pablo. Head of Quality of the Early-Phase Clinical Trials Unit – IRYCIS.

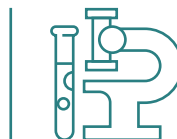
Purificación Pastor. Head of the ISO 9001:2015 Quality Management System of Hospital Ramón y Cajal.

Ana Pérez. Coordinator and Head of Quality of FIBioHRC.

The Quality Committee participates in general strategic activities promoted by the Management of IRYCIS and of FIBioHRC regarding quality management, including the following:



**Preparation of a new procedure**, along with the Research Committee, aimed at researchers who wish to apply for new spaces and facilities



**Preparation of a procedure** aimed at researchers who wish to request that FIBioHRC assume the role of sponsor in independent clinical studies



**Review of the set of activity indicators** that various organisms and entities periodically request from IRYCIS. Analysis of their relationship with the indicators included in the ATENEA strategic plan and the specific plans that make up the plan.



## Activities Conducted in 2023

### Participation of the Chair

as member of the Research Committee of IRYCIS.

---

### Meetings

with the individuals responsible for the specific plans within the ATENEA strategic plan for the annual follow-up of objectives and actions performed.

---

### Implementation

of a process management system in the Aptamers CSU.

---

### Participation of a member

in the ISO 9001:2015 internal auditor course offered by the Quality Committee of HURYC.

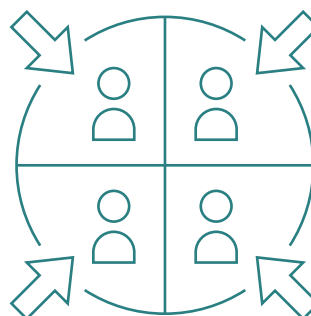
### Follow-up activities

of the process management system implemented in previous years in 3 CSUs: Support for phase 2-4 clinical studies and trials, Biomarkers and miRNA-based Therapeutic Targets and Translational Genomics and Bioinformatics.

---

### Survey

to determine the degree of satisfaction of its users with the activity of Quality Committee.



# Human Resources of IRYCIS

Throughout 2023, IRYCIS has had among its ranks **more than 1,200 individuals** dedicated to research, such as principal investigators, contributors, support technicians and R&D management personnel

## Individuals working actively in research

**1.232** 

**742**  
individuals in consolidated groups

**152**  
individuals dedicated to research in established and Accessing groups

**338**  
are Associated Clinical Research Staff (ACRS) who actively lead research projects and/or lines and are from the 47 departments/units of the Hospital

**3%**  
non-Spanish nationality

## Individuals of the Hospital who also contribute as authors in the Institute's publications

**264** 

## Individuals dedicated to R&D management

**26** 

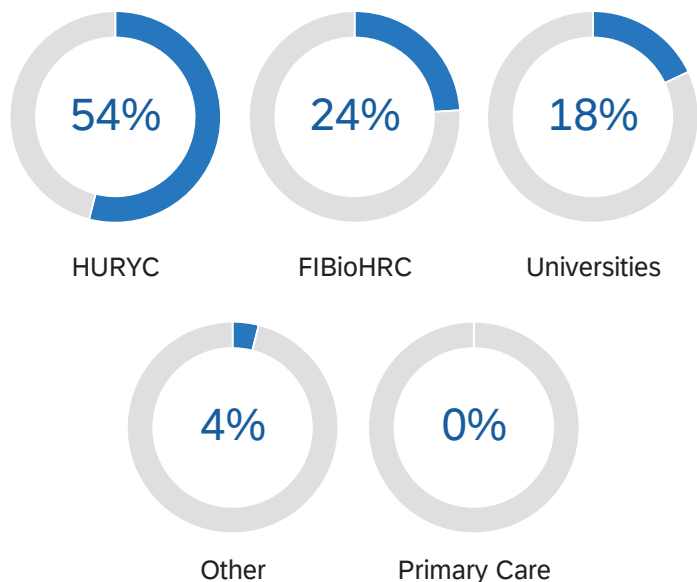
## Number of individuals linked to IRYCIS groups by priority area, and ACRS



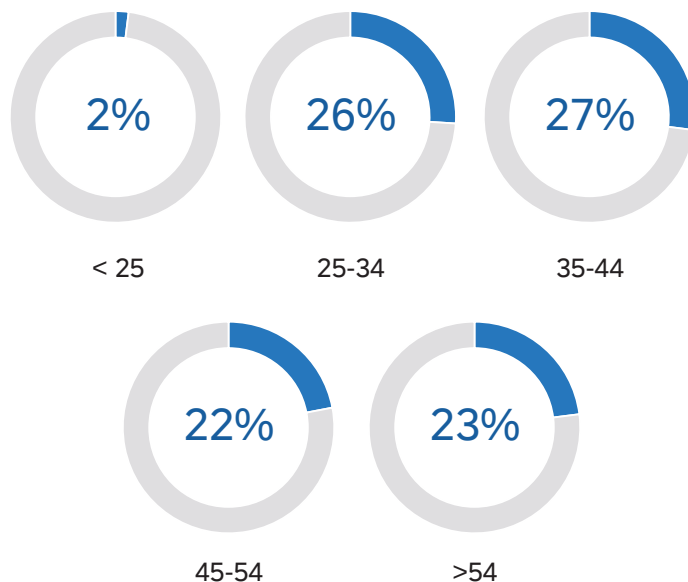
# Human Resources of IRYCIS

## IRYCIS staff distribution

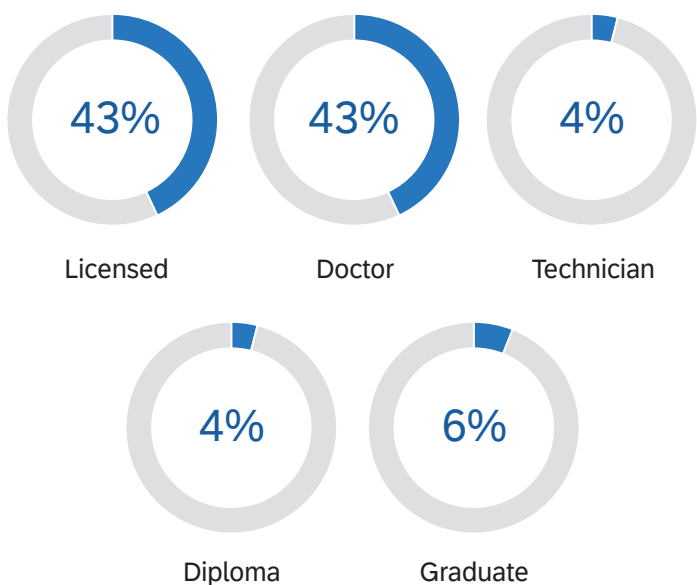
### IRYCIS staff distribution by centre



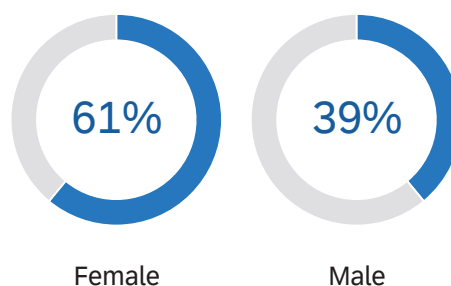
### IRYCIS staff distribution by age range



### IRYCIS staff distribution by academic degree



### IRYCIS staff distribution by sex

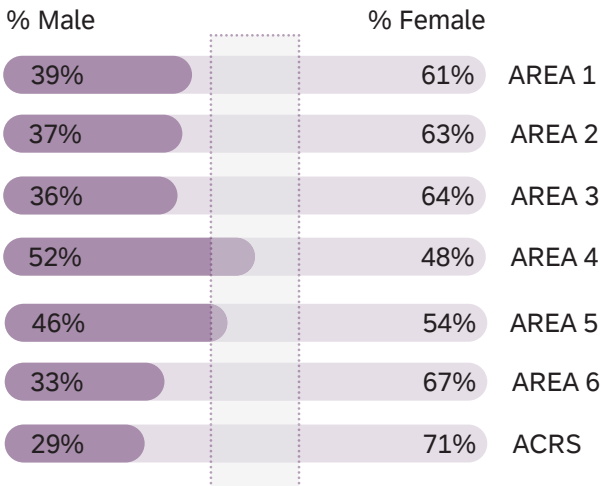


# Equality in IRYCIS

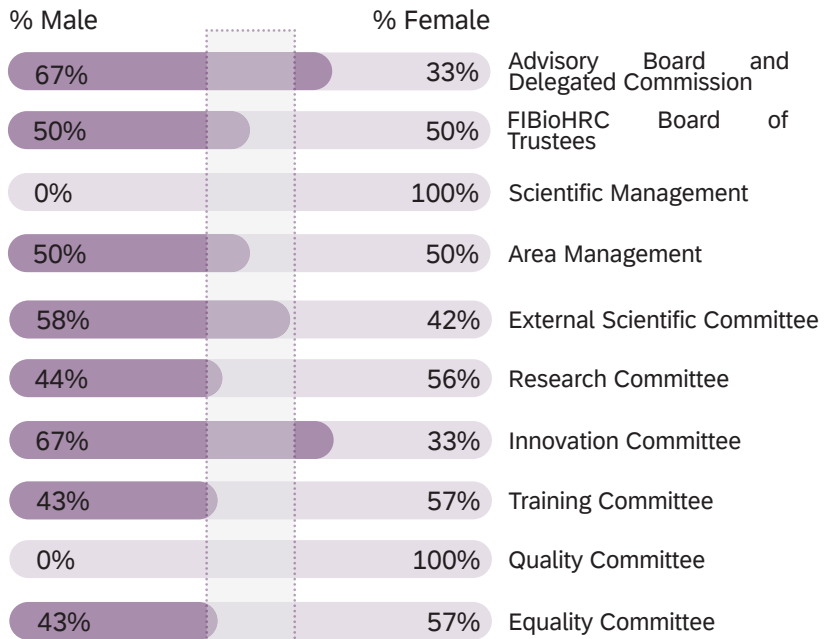
In 2023, IRYCIS and its Foundation continued their efforts to create a research institution of excellence that is inclusive and diverse, in which the roles of women and men are made manifestly equal, promoting scientific careers and vocations and protecting workers' rights in a fair work environment.

The Equality Committee, which promotes and drives these initiatives, is committed to a close work model and to new technologies with creative and audio-visual formats.

## Research staff in scientific areas



## Government bodies and advisory bodies



## Iniciatives

### February 11: International Day of Women and Girls in Science

#### IRYCIS YouTube Channel

11 IRYCIS female researchers participated in a video, briefly explaining their job and leaving a highly positive message to encourage girls and young women to become important scientists, like them!



#### 11F Stickers

After the success in previous rounds, with all units given out, IRYCIS developed a new edition of stickers for the International Day of Women and Girls in Science..



#### IRYCIS female researchers attend educational institutions in person or virtually

To bring research to boys and girls between 3 and 18 years of age and to present an inclusive model of research where women are equal workers who are listened to and valued in the same measure as their male colleagues.



# Equality in IRYCIS

25 July: International Day of LGBTQ+ People in Science, Technology, Engineering and Mathematics

## IRYCIS YouTube Channel

IRYCIS celebrates diversity in all of its forms, including affective-sexual orientation and gender expression, as a motor of science excellence. Therefore, with respect and admiration, the FIBioHRC Equality Commission prepared a small video with the objective of highlighting the often hidden contribution of the LGBTQ+ community to science. Thus, this group is composed of individuals such as Pío del Río Hortega, Carolyn Bertozzi, Svante Pääbo, Ben Barres, Sophie Wilson, Susana Rodríguez Navarro and Eduardo López Collazo, as well as numerous others whose names go unseen, forming an indispensable part of our scientific setting and society.



5 DE JULIO DE 2023: EL IRYCIS CELEBRA LA DIVERSIDAD LGTBIQA+ EN CIENCIA

## Active participation in the National Workgroup on Gender Perspective of Instituto de Salud Carlos III

IRYCIS has participated another year in the Forum of Healthcare Research Institutes sponsored by ISCIII, providing its knowledge to the Gender Perspective Workgroup. This Group is charged with analysing the situation and proposing improvements related to gender perspective in healthcare research institutions in Spain.



## March 8: International Women's Day

### IRYCIS YouTube Channel

IRYCIS commemorated this International Women's Day by handing out purple ribbons and taking photographs of large groups of women who work daily in the Research Institute and Hospital, conducting clinical, teaching, research and innovation tasks.

We are women, we are workers, and we are numerous!



## Promote and facilitate the inclusion of gender perspective in the research and innovation projects of IRYCIS

During 2023, the Equality Commission gave their support to researchers to include gender perspective in their research and innovation projects, an increasingly relevant aspect of project evaluations by national and international funding entities.

In person, by email and with specific training activities, the Equality Commission is available for all research staff who need them: [comision.igualdad@irycis.org](mailto:comision.igualdad@irycis.org)

On November 16, 2023, the Equality Commission gave the seminar, HOW TO INCLUDE GENDER PERSPECTIVE IN YOUR RESEARCH PROJECT, training given to IRYCIS research staff on how to use the "Guidelines on the impact of gender and gender perspective in research projects", as an instrument for drafting this section in projects.



## GUIDELINES ON THE IMPACT OF GENDER AND GENDER PERSPECTIVE IN RESEARCH PROJECTS



# IRYCIS activity in numbers

# 10

## New projects

Public projects and networks obtained in competitive tendering

**43** 

30 national  
13 international

Private projects

**62** 

## Active projects

European projects and initiatives

**36** 

Private projects

**176** 

Commercial clinical studies

**1.168** 

Non-commercial national public projects and clinical studies obtained in competitive tendering (34 EECC NC)

**109** 

## Trials and clinical studies

**204** 



## Evolution in the number of phases I and II clinical trials

## HR contracts won in 2023 competitive tendering

Contracts granted

**12** 

3 Río Hortega (ISCIII)  
2 Juan Rodés (ISCIII)  
1 Miguel Servet I (ISCIII)  
2 Intensificaciones (ISCIII)  
2 Predoctoral PFIS (ISCIII)  
1 Predoctoral UPT (MIU)  
1 Postdoctoral MSCA-PF

Active contracts

**57** 

6 Río Hortega (ISCIII)  
3 Juan Rodés (ISCIII)  
2 Sara Borrell (ISCIII)  
2 Predoctoral i-PFIS (ISCIII)  
8 Predoctoral PFIS (ISCIII)  
4 Miguel Servet I (ISCIII)  
2 Intensificaciones (ISCIII)  
1 IIS Manager (ISCIII)  
1 talent attraction contract (CAM)  
14 Research Assistants Youth Employment (CAM)  
4 Laboratory Technicians Youth Employment (CAM)  
1 Predoctoral Youth Employment (CAM)  
1 Postdoctoral Youth Employment (CAM)  
2 Technical Support Personnel (MICINN)  
1 Juan de la Cierva Training (MICINN)  
2 Predoctoral UPT (MICINN)  
1 Postdoctoral (MSCA-PF)



# IRYCIS activity in numbers

## Publications

\* Original articles, guidelines, reviews and editorials

### Publications

**1.242** 



Progress in the number of publications

### Impact factor points

**8.190** 



Progress in the impact factor

### Publications in first quartile

**47%** **Q1**

### Publications in top ten percent

**18%** **D1**

### Publications with first or last author of IRYCIS

**41%** 

## Bibliometrics of IRYCIS and publications of excellence

BIBLIOMETRICS OF IRYCIS	2019	2020	2021	2022	2023
Total number of publications:	1130	1350	1311	1284	1242
Total IF	5.354,19	6.190,51	8.012,51	9.752,19	8.189,92
Mean IF	4,74	4,59	6,11	7,60	6,59
Originals	1.101	1.329	1.168	1.217	1.108
Reviews	1	0	101	16	76
Editorials	12	2	29	41	56
Clinical Guidelines	16	19	13	10	2

PUBLICATIONS OF EXCELLENCE	2019	2020	2021	2022	2023
No. of publications in D1	215	261	234	212	219
TOTAL IF D1	2.997,96	3.163,38	4.149,10	5.180,87	4.222,50
% No. of publications in D1	19,0	19,3	17,8	16,5	17,6
No. of publications in Q1	494	626	652	582	583
TOTAL IF Q1	4.255,80	4.902,80	6.491,88	7.742,51	6.502,05
% of publications in Q1	43,7	46,4	49,7	45,0	47,0

# IRYCIS activity in numbers

# 10

## Innovation and industrial property

Active innovation projects at the end of the year

129 

Active patent families at the end of the year

28 

5 MTAs (Material Transfer Agreements) and 16 CDAs (confidential disclosure agreements) signed

21 

New applications for industrial protection

12 

New innovative ideas this year

28 

Innovation projects in use and/or transferred in 2023

6  **45 cumulative total**

Funding obtained in 2023

1M€ 

## Networks, platforms, alliances and consortia

Networks, platforms, alliances and consortia in which IRYCIS participates

206 

42% international (86), 36 started in 2023 (11 internacionales), 30 active framework agreements

## Theses and awards

Theses supervised by IRYCIS members

63 

Theses read by IRYCIS members

48 

Awards and distinctions awarded

72 





# Communication

IRYCIS is a space dedicated to biomedical research of excellence, with a clear multidisciplinary and translational character, dedicated to becoming a trusted reference for society, for the scientific community and for public and private institutions, both national and international. IRYCIS therefore works under the premise of sharing and exposing the Institute's principles and values, its "IRYCIS Brand", as well as its achievements and activities in research, innovation and transference conducted through the efforts of its research staff and other members of the Institution, objectives that are prominently listed in the **2021-2025 Communication Plan**.

Sessions/Conferences conducted

30 

News about our Hospital/IRYCIS published in the written press

225 

News in other audio-visual media (Radio, TV and Social Networks)

9  6 pieces on radio  
3 pieces in TV news

News disseminated in different formats

67 

50 in standard format

5 short news articles disseminated through our communication channel **Visibility IRYCIS**

6 highlighted publications through our **Outstanding Publications** channel

6 You Tube videos of IRYCIS

IRYCIS INFORMA submitted with different subjects

77 

47 boletines semanales con convocatorias

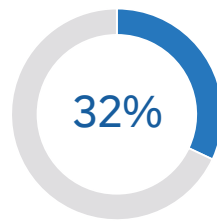
30 correos con información de los Seminarios IRYCIS

Website visits

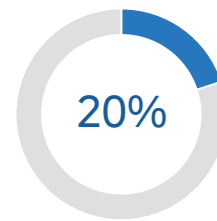
445.913 

↑ In 2022:  
337.288

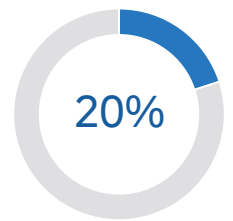
Distribution of news by category



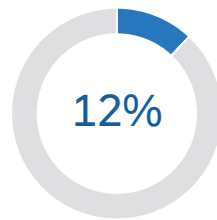
IRYCIS brand



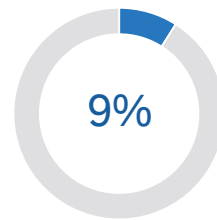
Featured projects



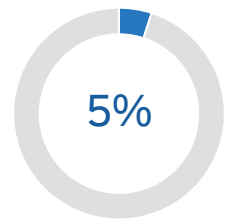
Events



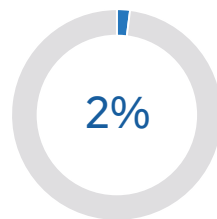
Scientific results



Innovation



Awards and recognitions



Call update



# Communication

Most relevant and representative news of the 6 areas of IRYCIS

01

### El Hospital Ramón y Cajal estudia la prevención de la discapacidad en casos de Esclerosis Múltiple

Has sido 578 los pacientes con Esclerosis Múltiple que se han sometido a este estudio de 6 años de seguimiento



El Hospital Universitario Ramón y Cajal ha participado en un estudio pionero para la prevención de la discapacidad a largo plazo ocasionada por la Esclerosis Múltiple. El objetivo del estudio era determinar el papel de los marcadores como predictores de la discapacidad a medio-largo plazo derivada de esta enfermedad, pero hasta ahora solo se habían documentado como marcadores de inflamación aguda.

El proyecto está liderado por la Dra. Luisa María Villar, Jefa de servicio de Inmunología y responsable del grupo Esclerosis Múltiple, junto al Área 1 del IRYCIS (Instituto de Investigación en Investigación Sanitaria) y al Dr. Iker Moreno, coordinador del CSIC de Esclerosis Múltiple del Hospital Ramón y Cajal como primer firma y es el que también ha participado ocho hospitales españoles.

El equipo se componen los doctores Fernández Vilasaca, Salas de la Masa, Villaverde, Tapia, Rodríguez-Jorge, Chico García, Alvarez Cermeño, Manjón, Costa-Frossard y Lourido de los servicios de Inmunología.

02

### Resucitan ancestros de la herramienta de edición genética CRISPR de hace 2600 millones de años



Un grupo de investigación internacional ha reconstruido por primera vez ancestros del conocido sistema CRISPR-Cas de hace 2.600 millones de años y ha estudiado su evolución a lo largo del tiempo. Los resultados apuntan a que los sistemas revitalizados no solo funcionan, sino que son más versátiles que las versiones actuales y podrían tener aplicaciones revolucionarias. La prestigiosa revista científica Nature Microbiology ha dado a conocer los resultados de esta investigación que, en opinión del equipo investigador "abre nuevas vías para la edición genética".

03

### Identifican dos nuevos marcadores para la detección del cáncer anal



MADRID, 19 Jul. (EUROPA PRESS). Un estudio internacional liderado desde el Servicio de Enfermedades Infecciosas del Hospital Universitario Ramón y Cajal e Instituto de Investigación Sanitaria Ramón y Cajal (IRYCIS) ha identificado dos nuevos marcadores para la detección de lesiones intraepiteliales escamosas de alto grado (HSIL, por sus siglas en inglés), precursoras del cáncer anal, en el microbioma anal de personas con VIH.

El equipo de investigación estudió a 213 participantes, la mayoría de ellos hombres que mantienen relaciones sexuales con otros hombres, y que están en seguimiento mediante endoscopias y biopsias anales por presentar un mayor riesgo de desarrollar cáncer anal.

Las proteínas sobreexpresadas en el microbioma de pacientes con lesiones intraepiteliales escamosas de alto grado parecen contribuir a la patogénesis del cáncer, destaca Manuel Ferrer, del CSIC.

Los hallazgos de este trabajo destacan que, más importante que saber qué bacterias están presentes es comprender qué están haciendo esas bacterias. Y sugieren que, más allá de su valor en la detección de HSIL, las bacterias juegan un papel relevante en su desarrollo. Debemos investigar estas proteínas y moléculas como posibles objetivos terapéuticos para combatir el cáncer", añade el investigador.

04

### NOVA CIENCIA

Universidad y ciencia para España e Hispanoamérica

#### Las infecciones por bacterias multirresistentes provocan en Europa cada año más de 33.000 muertes atribuibles

Por Nova Ciencia - Jun 16, 2023

Así se ha alertado en la mesa de debate 'Una Sola Salud. Paradigma frente a las resistencias bacterianas' organizada dentro del XXIX Congreso Nacional de Sociedad Española de Médicos Generales y de Familia (SEMG), en la que se han analizado enfoques en torno a la salud humana, ambiental y animal, de la mano de reconocidos expertos en la materia.



La resistencia a agentes antimicrobianos (RAM) ha sido una prioridad de salud pública durante décadas. En la actualidad, se está dando especial importancia al concepto 'Una Sola Salud' (One Health en inglés), tema que ha centrado hoy en Granada una de las mesas de debate organizadas dentro del XXIX Congreso Nacional de Medicina General y de Familia.

05

### Anatomía Patológica del Ramón y Cajal, doblemente galardonado



El Servicio de Anatomía Patológica del Hospital Universitario Ramón y Cajal ha sido doblemente galardonado en el XXXI Congreso nacional de la Sociedad Española de Anatomía Patológica (SEAP).

El jefe de servicio de Anatomía Patológica del H. U. Ramón y Cajal y responsable del Grupo Patología Molecular del Cáncer (Área 3 del IRYCIS), el Dr. José Palacios, ha recibido el prestigioso Premio Ramón y Cajal. Este premio es la máxima distinción que la SEAP otorga a uno de sus miembros cada dos años, reconociendo no sólo la trayectoria asistencial e investigadora, sino también los servicios prestados a esta sociedad científica.

El Dr. Palacios ha ejercido su actividad asistencial desde 1983, primero como residente y adjunto en el Hospital Universitario La Paz y posteriormente como jefe de servicio en Hospital Universitario Virgen del Rocío de Sevilla y ahora en el Hospital Universitario Ramón y Cajal. Su actividad investigadora la ha desarrollado dirigiendo el Grupo

06

### redacción médica

#### El único fármaco para la enfermedad ASMD logra una mejora pulmonar de 46%

El hematólogo Jesús Villarrubia destaca en la VIII Edición Post-WS Raveview de Sanofi los resultados de olipudasa alta



Jesús Villarrubia, hematólogo del Hospital Ramón y Cajal de Madrid.

News Area 1: (1) Multiple sclerosis. Dr Villar and (2) Genetic and Sensorineural Pathophysiology. Dr Moreno Pelayo.  
News Area 2: (3) Infectious diseases. Dr Serrano and (4) Biology and evolution of microorganisms. Dr Coque.  
News Area 3: (5) Molecular pathology of cancer group Dr Palacios and (6) Translational haematology. Dr Villarrubia.

07



08



09



10



11



News Area 4: (7) Tissue engineering and regenerative medicine. Dr Acero and (8) Therapeutic biomarkers and therapeutic targets. Dr García Bermejo.

News Area 5: (9) Diabetes, obesity and human reproduction. Dr Martínez-García and Dr Escobar and (10) Surgical Research in Urology and Renal Transplantation. Dr Gómez Dos Santos and Dr Burgos.

News Area 6: (11) Epidemiology and clinical biostatistics Dr Zamora

# Publications

# 12

Top ten international publications\* according to the number of citations (published between 2019 and 2023)

\*Articles and reviews with first or last authorship positions or corresponding authorship to IRYCIS

**01** **Gómez-Coronado D, Lasunción MA, Martínez-Botas J, Fernández-Suárez ME.** Role of cholesterol metabolism in the anticancer pharmacology of selective estrogen receptor modulators. *Semin. Cancer Biol.* 2021;73: 101 - 115. DOI:10.1016/j.semcancer.2020.08.015.

**02** **Ortega MA, Fraile O, Naya I, García N, Álvarez M, Buján J, Asunsolo A, de la Torre B.** Type 2 Diabetes Mellitus Associated with Obesity (Diabesity). The Central Role of Gut Microbiota and Its Translational Applications. *Nutrients.* 2020;12(9): 2749. DOI:10.3390/nu12092749.

**03** Herrera M, **Galindo C, García V, Peña C.** A Snapshot of The Tumor Microenvironment in Colorectal Cancer: The Liquid Biopsy. *Int J Mol Sci.* 2019;20(23): 6016. DOI:10.3390/ijms20236016.

**04** **Rodríguez J, DelaFuente J, León R, MacLean RC, San Millán A.** Beyond horizontal gene transfer: the role of plasmids in bacterial evolution. *Nat. Rev. Microbiol.* 2021;19(6): 347 - 359. DOI:10.1038/s41579-020-00497-1.

**05** **Cruz AJ, Sayer AA.** Sarcopenia. *Lancet.* 2019;393(10191): 2636 - 2646. DOI:10.1016/S0140-6736(19)31138-9.

**06** **Baquero F, Levin BR.** Proximate and ultimate causes of the bactericidal action of antibiotics. *Nat. Rev. Microbiol.* 2021;19(2): 123 - 132. DOI:10.1038/s41579-020-00443-1.

**07** **Pérez JA, Crespillo C, Bosch P, Molina I.** Trypanocidal treatment of Chagas disease. *Enferm. Infecc. Microbiol. Clin.* 2020;39(9): 458 - 470. DOI:10.1016/j.eimc.2020.04.011.

**08** Heywood AE, **López R.** Reducing infectious disease inequities among migrants. *J Travel Med.* 2019;26(2): tay131. DOI:10.1093/jtm/tay131.

**09** **Leskela S, Pérez B, Rosa JM, Cristobal E, Biscuola M, Palacios ML, Ong S, Matias X, Palacios J.** Molecular Basis of Tumor Heterogeneity in Endometrial Carcinosarcoma. *Cancers (Basel).* 2019;11(7):964. DOI:10.3390/cancers11070964.

**10** **Baquero F, Lanza FV, Duval M, Coque TM.** Ecogenetics of antibiotic resistance in *Listeria monocytogenes*. *Mol. Microbiol.* 2020;113(3): 570 - 579. DOI:10.1111/mmi.14454.



## 01

Bascañana H, **De Miguel C**, Gil L, Monguet JM, Trejo Á. Medida por consenso del estado de la innovación en medicina física y rehabilitación. *Rehabilitacion (Madr)*. 2023;57(1): 100725 - 100725. DOI:10.1016/j.rh.2022.01.002.

## 02

Romero M, Aller R, Ampuero J, Rodríguez CF, Agustín S, Latorre R, Rivera J, Urroz BM, García MLG, López SA, **Albillos A**, Hernández M, Graupera I, Benlloch S, Oliveira A, Crespo J, Luis J. AEEH "Consensus about detection and referral of hidden prevalent liver diseases". *Gastroenterol Hepatol*. 2023;46(3): 236 - 247. DOI:10.1016/j.gastrohep.2022.04.001.

## 03

**Díez L**, Beltrán L, Loscos J, Pazos M, Ponte B, Pinazo MD, Giménez R, Ussa F, Pinilla LM, **Jaumandreu L**, **Rebolleda G**, **Muñoz FJ**. Advanced glaucoma. Clinical practice guideline. *Arch Soc Esp Oftalmol (Engl Ed)*. 2023;98(1): 18 - 39. DOI:10.1016/j.oftale.2022.08.005.

## 04

**Jaumandreu L**, Antón A, Pazos M, Rodriguez I, Rodriguez I, Martinez de la Casa JM, Ayala ME, Parrilla M, Dyrda A, **Díez L**, **Rebolleda G**, **Muñoz FJ**. Glaucoma progression. Clinical practice guide. *Arch Soc Esp Oftalmol (Engl Ed)*. 2023;98(1): 40 - 57. DOI:10.1016/j.oftale.2022.08.003.

## 05

Pedretti R, Hansen D, Ambrosetti M, Back M, Berger T, Ferreira MC, Cornelissen V, Davos CH, Doehner W, **de Pablo YC**, Frederix I, Greco A, Kurpas D, Michal M, Osto E, Pedersen S, Salvador RE, Simonenko M, Steca P, Thompson DR, Wilhelm M, Abreu A. How to optimize the adherence to a guideline-directed medical therapy in the secondary prevention of cardiovascular diseases: a clinical consensus statement from the European Association of Preventive Cardiology. *Eur J Prev Cardiol*. 2023;30(2): 149 - 166. DOI:10.1093/eurjpc/zwac204.

## 06

Isla D, Felip E, **Garrido P**, Insa A, Majem M, Remon J, Trigo JM, de Castro J. A Delphi consensus panel about clinical management of early-stage EGFR-mutated non-small cell lung cancer (NSCLC) in Spain: a Delphi consensus panel study. *Clin Transl Oncol*. 2023;25(1): 283 - 291. DOI:10.1007/s12094-022-02941-5.

## 07

Sánchez R, **Ramón Foruny Olcina J**, Costas JV, Rojo FG, Pérez JJ, Domínguez E, Huix FG, Beltrán VP, Soler JG, Hernández ES, Oliva CG, Abadía CD, Ramón Aparicio Tormo J. SEED Consensus Document on SpyGlass-DS. *Gastroenterol Hepatol*. 2023;46(1): 69 - 79. DOI:10.1016/j.gastrohep.2022.08.012.

## 08

Pedro J, **Barrios V**, Sánchez V, Tamargo J, **Arrieta F**, Gámez JM, Gimeno JA, Escobar C, Gómez JJ, Pérez A, Working Groups of Cardiovascular Pharmacotherapy of the Sociedad Española de Ca. Treatment of hypertriglyceridaemia with icosapent ethyl in patients with high/very high cardiovascular risk. Consensus document of the Sociedad Espanola de Cardiologia [Spanish Society of Cardiology] and the Sociedad Espanola de Diabetes [Spanish Diabetes Society]. *Endocrinol Diabetes Nutr (Engl Ed)*. 2023;70: 51 - 62. DOI:10.1016/j.endien.2022.11.009.

## 09

**Pintado V**, **Ruiz P**, Aguilera D, **Baquero F**, Bou G, **Cantón R**, Grau S, Gutiérrez B, Larrosa N, Machuca I, Martínez L, Montero MM, Morte E, Oliver A, Paño JR, Sorlí L. Executive summary of the consensus document of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) on the diagnosis and antimicrobial treatment of infections due to carbapenem-resistant Gram-negative bacteria. *Enferm Infecc Microbiol Clin (Engl Ed)*. 2023;41(6): 360 - 370. DOI:10.1016/j.eimce.2022.06.014.

## 10

Hegen H, Arrambide G, Gnanapavan S, Kaplan B, Khalil M, Saadeh R, Teunissen C, Tumani H, **Villar LM**, Willrich M, Zetterberg H, Deisenhammer F. Cerebrospinal fluid kappa free light chains for the diagnosis of multiple sclerosis: A consensus statement. *Mult Scler*. 2023;29(2): 182 - 195. DOI:10.1177/13524585221134217.

## 11

Barreiro M, Cabeza B, Calvo D, Luis Reyes J, Datino T, Galván EV, González A, Sánchez CD, Prat S, Perea RJ, Bastarrika G, Sánchez M, Jiménez LJ, **Lobán CF**, Rodríguez JF, María J, Alberto Hidalgo Pérez J, Pérez E, Bertomeu V, Cuéllar H. Magnetic resonance in patients with cardiovascular devices. SEC-GT CRMTC/SEC- Heart Rhythm Association/SERAM/SEICAT consensus document. *Rev Esp Cardiol (Engl Ed)*. 2023;76(3): 183 - 196. DOI:10.1016/j.recesp.2022.09.010.

## 12

Bueno J, Rubio I, Moreno M, Olona C, Barbosa E, **Molina JM**, Castellanos G. Prophylactic use of incisional negative pressure wound therapy for the prevention of surgical site occurrences in general surgery: Consensus document. *Surgery*. 2023;173(4): 1052 - 1059. DOI:10.1016/j.surg.2022.11.033.

## 13

Pérez JMT, **García M**, García A, Gomà M, Mesia R, Ruiz E, **Soria A**, Castillo P, Braña I, Alberola M. Recommendations for the use of biomarkers for head and neck cancer, including salivary gland tumours: A Consensus of the Spanish Society of Medical Oncology and the Spanish Society of Pathology. *Rev Esp Patol*. 2023;56(1): 45 - 57. DOI:10.1016/j.patol.2022.06.003.

## 14

Lozano MD, **Benito A**, Labiano T, Pijuan L, Tejerina E, Torres H, Gómez J. Recommendations for optimizing the use of cytology in the diagnosis and management of patients with lung cancer. *Rev Esp Patol.* 2023;56(1): 58 - 68. DOI:10.1016/j.patol.2022.04.001.

## 15

Ladang A, Beudart C, Reginster JY, Al N, Bruyère O, Burtet N, Cesari M, Cherubini A, da MC, Cooper C, **Cruz AJ**, Landi F, Laslop A, Maggi S, Mobasher A, Ormarsdottir S, Radermecker R, Visser M, Yerro MCP, Rizzoli R, Cavalier E. Biochemical Markers of Musculoskeletal Health and Aging to be Assessed in Clinical Trials of Drugs Aiming at the Treatment of Sarcopenia: Consensus Paper from an Expert Group Meeting Organized by the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO) and the Centre Académique de Recherche et d'Experimentation en Sante (CARES SPRL), Under the Auspices of the World Health Organization Collaborating Center for the Epidemiology of Musculoskeletal Conditions and Aging. *Calcif. Tissue Int.* 2023;112(2): 197 - 217. DOI:10.1007/s00223-022-01054-z.

## 16

Pilotto A, Custodero C, Palmer K, **Sanchez EM**, Topinkova E, Polidori MC, Members the Special Interest Group on Comprehensive Geriatric Assessment OF. A multidimensional approach to older patients during COVID-19 pandemic: a position paper of the Special Interest Group on Comprehensive Geriatric Assessment of the European Geriatric Medicine Society (EuGMS). *Eur Geriatr Med.* 2023;14(1): 33 - 41. DOI:10.1007/s41999-022-00740-3.

## 17

Spierenburg G, **Suevos C**, Stoel BC, Navas A, Gelderblom H, van de Sande M, van K. MRI of diffuse-type tenosynovial giant cell tumour in the knee: a guide for diagnosis and treatment response assessment. *Insights Imaging.* 2023;14(1): 22 - 22. DOI:10.1186/s13244-023-01367-z.

## 18

Sosa P, Blanco JM, Pineda Á, Rubí L, Peleteiro P, **Gajate P**, Zafra J, Siva S, Bossi A, **López F**, Couñago F. Stereotactic body radiation therapy for kidney cancer. Where do we stand?. *Int. J. Urol.* 2023;30(5): 437 - 445. DOI:10.1111/iju.15156.

## 19

García JMM, **Guillen SM**, Rodriguez F, Ruiz J, **Canton R**, Ramos PL, García A, García A, Hernandez T, Gomez J, del Castillo JG, Martin MC, Sanchez FJM, Martinez M, Bouza E. Status of Herpes Zoster and Herpes Zoster Vaccines in 2023: A position paper. *Rev Esp Quimioter.* 2023;36(3): 223 - 235. DOI:10.37201/req/004.2023.

## 20

Laranjeira C, Benito E, Dixe MA, **Dones M**, Specos M, Querido A. SPACEE Protocol: "Spiritual Care Competence" in Palliative Care Education and Practice: Mixed-Methods Research in the Development of Iberian Guidelines. *Int. J. Environ. Res. Public Health.* 2023;20(4). DOI:10.3390/ijerph20043505.

## 21

Pascual J, Mazuecos A, Sánchez G, Solé A, Ventura P, Crespo M, Farrero M, Fernández C, Garrido IP, **Gea F**, González E, González A, Hernández R, Jiménez C, López V, Otero A, Pascual S, Rodríguez GP, Ruiz JC, Sancho A, Santos F, Serrano T, Tabertero G, Zarraga S, Delgado JF, Spanish Best Transplant Practices Study G. Best practices during COVID-19 pandemic in solid organ transplant programs in Spain. *Transplant. Rev.* 2023;37(1): 100749 - 100749. DOI:10.1016/j.trre.2023.100749.

## 22

von T, Meersch M, Romagnoli S, Ostermann M, Ripollés J, Schneider AG, Vandenberghe W, Monard C, De Rosa S, Cattin L, Rahmel T, Adamzik M, **Parise D**, **Candela A**, Haaker JG, Göbel U, Bernard A, Lumlertgul N, Fernández P, Romero I, Suarez A, Larmann J, Villa G, Spadaro S, Wulf H, Arndt C, Putensen C, García R, Brandenburger T, Siniscalchi A, Ellerkmann R, Espeter F, Porschen C, Sadjadi M, Saadat K, Weiss R, Gerst J, Kellum J, Zarbock A, BigpAK I. Biomarker-guided intervention to prevent acute kidney injury after major surgery (BigpAK-2 trial): study protocol for an international, prospective, randomised controlled multicentre trial. *BMJ Open.* 2023;13(3): e070240. DOI:10.1136/bmjopen-2022-070240.

## 23

Peral J, Estella Á, Nuvials X, Rodríguez A, Seijas I, **Soriano C**, Suberviola B, Zaragoza R. Managing the Next Wave of Influenza and/or SARS-CoV-2 in the ICU-Practical Recommendations from an Expert Group for CAPA/IAPA Patients. *J. Fungi.* 2023;9(3): 312. DOI:10.3390/jof9030312.

## 24

Azanza JR, Mensa J, Barberan J, Vazquez L, de Oteyza JP, Kwon MI, Yanez L, Aguado JM, Gracian AC, Solano C, Camps IR, **Fortun J**, Lleti MS, Gudiol C, Rubio TO, Garcia C, Tarrats MR, Grande MS, Gonzalez P, Gutierrez CD. Recommendations on the use of azole antifungals in hematology-oncology patients. *Rev Esp Quimioter.* 2023;36(3): 236 - 258. DOI:10.37201/req/013.2023.

## 25

**de la Calle JL**, Abejón D, Canós Á, Cid J, López P, Mareque M, de Las Heras A, Casado MÁ, Álvarez M. Recommendations to standardize patients' follow-up after interventional procedures in chronic pain treatment: A Delphi study. *PAIN PRACT.* 2023;23(6): 618 - 625. DOI:10.1111/papr.13228.

## 26

Isla D, Lozano MD, Paz L, Salas C, de Castro J, Conde E, Felip E, Gómez J, **Garrido P**, Belén A. [New update to the guidelines on testing predictive biomarkers in non-small-cell lung cancer: a National Consensus of the Spanish Society of Pathology and the Spanish Society of Medical Oncology]. *Rev Esp Patol.* 2023;56(2): 97 - 112. DOI:10.1016/j.patol.2023.02.002.

## 27

Llufriu S, Agüera E, **Costa L**, Galán V, Landete L, **Lourido D**, Meca JE, Moral E, Bravo F, Koren L, Labiano A, León A, Martín P, Monedero MD, Requeni L, Zubizarreta I, Rovira À. Recommendations for the coordination of Neurology and Neuroradiology Departments in the management of patients with multiple sclerosis. *Neurologia (Engl Ed).* 2023;38(7): 453 - 462. DOI:10.1016/j.nrleng.2021.01.009.

## 28

Martinez L, Irure J, Jurado A, **Roy G**, Montes MA, Barrios Y, Rodríguez B, Vergara E, Prada Á, Rojo R, Vargas ML, G. Laboratory and clinical practices in antinuclear antibody detection and related antigens: recommendations from a Spanish multicentre survey. *Immunol. Res.* 2023;71(5): 749 - 759. DOI:10.1007/s12026-023-09389-x.

## 29

Castillón JC, **Gordoa TA**, Bayonas AC, Carretero AC, García R, Pulido EG, Fonseca PJ, Lete AL, Huerta AS, Plazas JG. SEOM-GETNE clinical guidelines for the diagnosis and treatment of gastroenteropancreatic and bronchial neuroendocrine neoplasms (NENS) (2022). *Clin Transl Oncol.* 2023;25(9): 2692 - 2706. DOI:10.1007/s12094-023-03205-6.

## 30

O'Mahony D, Cherubini A, Guiteras AR, Denking M, Beuscart JB, Onder G, Gudmundsson A, **Cruz AJ**, Knol W, Bahat G, van der Velde N, Petrovic M, Curtin D. STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. *Eur Geriatr Med.* 2023;DOI:10.1007/s41999-023-00777-y.

## 31

Barreiro M, Cabeza B, Calvo D, Reyes JL, Datino T, Vañó E, Maceira AM, Delgado Sánchez C, Prat S, Perea RJ, Bastarrika G, Sánchez M, Jiménez LJ, **Fernández C**, Rodríguez JF, Tolosana JM, Hidalgo JA, Pérez E, Bertomeu V, Cuéllar H, Expert R. Magnetic resonance in patients with cardiovascular devices. SEC-GT CRMTC/SEC-Heart Rhythm Association/SERAM/SEICAT consensus document. *Radiologia (Engl Ed).* 2023;65(3): 269 - 284. DOI:10.1016/j.rxeng.2022.09.014.

## 32

Agricola E, Ancona F, Bartel T, Brochet E, Dweck M, Faletta F, Lancellotti P, Mahmoud H, Marsan NA, Maurovich P, Monaghan M, Pontone G, Sade LE, Swaans M, Von RS, Wunderlich N, **Zamorano JL**, Popescu BA, Cosyns B, Donal E. Multimodality imaging for patient selection, procedural guidance, and follow-up of transcatheter interventions for structural heart disease: a consensus document of the EACVI Task Force on Interventional Cardiovascular Imaging: part 1: access routes, transcatheter aortic valve implantation, and transcatheter mitral valve interventions. *Eur Heart J Cardiovasc Imaging.* 2023;24(9): 209 - 268. DOI:10.1093/ehjci/jead096.

## 33

Ralston K, Zaidel E, Acquatella H, Barbosa MM, Narula J, Nakagama Y, Molina GR, Sliwa K, **Zamorano JL**, Pinto FJ, Piñeiro DJ, Corneli M. WHF Recommendations for the Use of Echocardiography in Chagas Disease. *Glob. Heart.* 2023;18(1): 27 - 27. DOI:10.5334/gh.1207.

## 34

González Del Castillo J, **Perez MJ**, Miguens I, Espinosa B, Juárez R, Piedrafita L, Trenc P, Alvarez J, Marchena MJ, Rodríguez R, Cabrera N, Grajal P, Navarro C, Piñera P, García F, Moreno S, Miro O. Decalogue to promote the implementation and improvement of recommendations for the early diagnosis of HIV in Emergency Departments. *Enferm Infecc Microbiol Clin (Engl Ed).* 2023;DOI:10.1016/j.eimce.2023.06.001.

## 35

Del Romero J, **Moreno S**, Rodríguez F, Ruiz J, **Canton R**, De Lucas P, García A, Garcia A, Hernandez T, Gomez J, Gonzalez del Castillo J, Martin MC, Martin FJ, Martinez M, Molero JM, Gomez J, Palomo M, Garcia R, Couso A, Sotomayor C, Bouza E. Sexually transmitted infections in Spain: Current status. *Rev Esp Quimioter.* 2023;36(5): 444 - 465. DOI:10.37201/req/038.2023.

## 36

Casals G, Costa RF, Rull EU, **Escobar HF**, Argente J, Sesmilo G, Biagetti B. Recommendations for the measurement of sexual steroids in clinical practice. A position statement of SEQC(ML)/SEEN/SEEP. *Adv Lab Med.* 2023;4(1): 52 - 69. DOI:10.1515/almed-2023-0020.

## 37

Chumbita M, Puerta P, Yáñez L, Angeles M, **Chinea A**, Español I, Fernandez P, Gudíol C, González P, Rojas R, Sánchez JM, Vadillo IS, Sánchez M, Varela R, Vázquez L, Guerreiro M, Monzo P, Lopera C, Aiello TF, Peyrony O, Soriano A, Garcia C. High Rate of Inappropriate Antibiotics in Patients with Hematologic Malignancies and Pseudomonas aeruginosa Bacteremia following International Guideline Recommendations. *Microbiol Spectr.* 2023;11(4). DOI:10.1128/spectrum.00674-23.

## 38

Martinez M, Martin FJ, **Moreno S**, Rodriguez F, Ruiz J, **Canton R**, De Lucas P, Garcia A, Garcia A, Hernandez T, Gomez J, Gonzalez del Castillo J, Martin MC, Molero JM, Santiago B, Antonio J, Barros C, Garcia de Viedma D, Martin C, Bouza E. Advantages and disadvantages of maintaining the mandatory use of masks in health centers and nursing homes in Spain. How and when is it justified to maintain it?. *Rev Esp Quimioter.* 2023;36(5): 466 - 469. DOI:10.37201/req/070.2023.

## 39

Santos D, Pagonabarraga J, Escamilla F, García PJ, Infante J, Kulisevsky J, Linazasoro G, Luquín MR, **Martínez JC**, Jesús S, Vela L, Campos FJ, Caballero F, Mir P, Panel of Experts Phase 1. Dopamine agonist therapy in Parkinson's disease: Spanish expert consensus on its use in different clinical situations. *Neurologia (Engl Ed).* 2023;DOI:10.1016/j.nrleng.2023.04.008.

## 40

Montes S, Climent F, Fraga M, **Luis J**, Robles Á, García R, Ocio EM, **González A**, Navarro JT. Expert consensus on the integrated diagnosis of idiopathic multicentric Castleman disease. *Rev Esp Patol.* 2023;56(3): 158 - 167. DOI:10.1016/j.patol.2022.12.003.

## 41

**Zamorano JL**, Appleby C, Benamer H, Frankenstein L, Musumeci G, Nombela L. Improving access to transcatheter aortic valve implantation across Europe by restructuring cardiovascular services: An expert council consensus statement. *Catheter. Cardiovasc. Interv.* 2023;102(3): 547 - 557. DOI:10.1002/ccd.30760.

## 42

**Vañó S**, Bisanga CN, Bouhanna P, Farjo B, Gambino V, Meyer T, Silyuk T, Hair Transplant Surgery Expert G. An international expert consensus statement focusing on pre and post hair transplantation care. *J. Dermatol. Treat.* 2023;34(1): 2232065 - 2232065. DOI:10.1080/09546634.2023.2232065.

## 43

Confalonieri F, Haave H, Binder S, Bober AM, Bragadottir R, Baerland T, Faber R, Forsaa V, **Gonzalez JJ**, Govetto A, Haugstad M, Ivastinovic D, Jenko NC, Nicoara SD, Kaljurand K, Kozak I, Kvanta A, Lytvynchuk L, Nawrocka ZA, Pajic SP, Petrovic MG, Radecka L, Rehak M, Romano MR, Ruban A, Speckauskas M, Stene I, Stranak Z, Thaler A, Thein A, Theocharis I, Tomic Z, Yan X, Zekolli M, Zhuri B, Znaor L, Petrovski BE, Kolko M, Lumi X, Petrovski G. Macular hole Delphi consensus statement (MHOST). *Acta Ophthalmol.* 2023;101(7): 815 - 825. DOI:10.1111/aos.15682.

## 44

**Fernández JM**, Casado J, Formiga F, González A, Arévalo JC, Beltrán M, Cerqueiro JM, **Llàcer P**, **Manzano L**, Morales JL, Pérez J, Conde A. Executive summary of the 2023 update on the consensus regarding basic conduct during hospital admission for patients with acute heart failure. *Rev Clin Esp (Barc).* 2023;223(8): 499 - 509. DOI:10.1016/j.rceng.2023.07.008.

## 45

Candel FJ, Barreiro P, Salavert M, Cabello A, Fernández M, Pérez P, San Román J, Berenguer J, Córdoba R, Delgado R, España PP, Gómez IA, González Del Castillo JM, Heili SB, Martínez FJ, Menéndez R, **Moreno S**, Pablos JL, Pasquau J, Piñana JL, On Behalf Of The Modus Investigators A. Expert Consensus: Main Risk Factors for Poor Prognosis in COVID-19 and the Implications for Targeted Measures against SARS-CoV-2. *Viruses.* 2023;15(7): 1449. DOI:10.3390/v15071449.

## 46

Calvin M, Calleja MÁ, Monte E, **Rodríguez MÁ**, Ventayol P. Checklist for Pharmaceutical Care of the Patient with interstitial lung disease (CheckEPID): A Delphi-based consensus. *Farm Hosp.* 2023;47(6): 277 - 284. DOI:10.1016/j.farma.2023.06.010.

## 47

Diamant Z, Jesenak M, Hanania NA, Heaney LG, Djukanovic R, Ryan D, Quirce S, Backer V, Gaga M, Pavord I, **Antolín D**, Assaf S, Bakakos P, Bobcakova A, Busse W, Kappen J, Loukides S, van M, Panzner P, Pite H, Spanevello A, Stenberg H, Striz I, Thio B, Vasakova MK, Conti D, Fokkens W, Lau S, Scadding GK, Van E, Hellings PW, Bjermer L. EUFOREA pocket guide on the diagnosis and management of asthma: An educational and practical tool for general practitioners, non-respiratory physicians, paramedics and patients. *Respir. Med.* 2023;218: 107361 - 107361. DOI:10.1016/j.rmed.2023.107361.

## 48

Mbuagbaw L, Garcia C, Brenner B, Cecchini D, Chakroun M, Djiaideu P, **Holguin A**, Mor O, Parkin N, Santoro MM, Ávila S, Fokam J, Phillips A, Shafer RW, Jordan MR. Checklist for studies of HIV drug resistance prevalence or incidence: rationale and recommended use. *Lancet HIV.* 2023;10(10): 684 - 689. DOI:10.1016/S2352-3018(23)00173-X.

## 49

Steier JS, Bogan RK, **Cano IM**, Fleetham JA, Insalaco G, Lal C, Pépin JL, Randerath WJ, Redline S, Malhotra A. Recommendations for clinical management of excessive daytime sleepiness in obstructive sleep apnoea - A Delphi consensus study. *Sleep Med.* 2023;112: 104 - 115. DOI:10.1016/j.sleep.2023.10.001.



## 50

**Araujo M, Berrocal VR**, Dios E, Serramito R, Biagetti B, Bernabeu I. Executive summary of the expert consensus document from the Spanish Society of Neurosurgery and the Spanish Society of Endocrinology and Nutrition: clinical recommendations on the perioperative management of pituitary tumors. *Neurocirugía (Astur : Engl Ed)*. 2023;34(6): 292 - 307. DOI:10.1016/j.neucie.2023.07.007.

## 51

Calvin M, Calleja MÁ, Monte E, **Rodríguez MÁ**, Ventayol P. [Translated article] Checklist for the pharmaceutical care of patients with interstitial lung disease (CheckEPID): A Delphi-based consensus. *Farm Hosp*. 2023;47(6): 277 - 284. DOI:10.1016/j.farma.2023.09.004.

## 52

Faraldo A, Sánchez A, Pérez I, Beneit JV, Muñoz D, Peix B, Asensio S, Nuño EI, Santana MJ, **Hidalgo V**, González F, Ortuño I. Development of an Information Guideline for Kidney Transplant Recipients in a Clinical Trial: Protocol for a Modified Delphi Method. *JMIR Res Protoc*. 2023;12:e46961. DOI:10.2196/46961.

## 53

Pérez V, **Montes JM**, Trillo E, Gasull V, Garcí J, Olivares JM, Berrocoso E, Mico JA, Agüera L. Consensus on the detection and management of patients with depression and pain as an associated somatic symptom. *Span J Psychiatry Ment Health*. 2023;DOI:10.1016/j.sjpmh.2023.10.002.

## 54

Rojo R, Calvo J, Prada Á, Valor S, **Roy G**, López M, Cervera R, Sánchez P, Jurado A. Recommendations for the use of anti-dsDNA autoantibodies in the diagnosis and follow-up of systemic lupus erythematosus - A proposal from an expert panel. *Autoimmun Rev*. 2023;22(12): 103479 - 103479. DOI:10.1016/j.autrev.2023.103479.

## 55

**Araujo M, Rodríguez V**, Dios E, Serramito R, Biagetti B, Bernabeu I. Executive summary of the expert consensus document from the Spanish Society of Neurosurgery and the Spanish Society of Endocrinology and Nutrition: Clinical recommendations on the perioperative management of pituitary tumors. *Endocrinol Diabetes Nutr (Engl Ed)*. 2023;70(9): 592 - 608. DOI:10.1016/j.endien.2023.11.001.

## 56

**Araujo M, Pascual E**, Martín P, Parra P. Primary aldosteronism: Practical recommendations for treatment and follow-up. *Hipertens Riesgo Vasc*. 2023;40(4): 215 - 221. DOI:10.1016/j.hipert.2023.08.001.

## 57

Balsa A, Díaz Del Campo Fontecha P, Silva L, Valencia J, Nistal V, León F, Hernández MV, Corominas H, Cáliz R, Aguado JM, Candelas G, Ibarroyen N, Martí A, **Plana MN**, Puñal J, Park HS, Triñanes Y, Villaverde V. Recommendations by the Spanish Society of Rheumatology on risk management of biological treatment and JAK inhibitors in patients with rheumatoid arthritis. *Reumatol Clin (Engl Ed)*. 2023;19(10): 533 - 548. DOI:10.1016/j.reumae.2023.07.004.

## 58

Noebauer IM, Vanhoenacker FM, Vilanova JC, Tagliafico AS, Weber MA, Lalam RK, Grieser T, Nikodinovska VV, de Rooy JWW, Papakonstantinou O, Mccarthy C, Sconfienza LM, Verstraete K, Martel J, Szomolanyi P, Lecouvet FE, Afonso D, Albtoush OM, Aringhieri G, Arkun R, Aström G, Bazzocchi A, Botchu R, Breitensteher M, Chaudhary S, Dalili D, Davies M, de Jonge MC, Mete BD, Fritz J, Gielen J, Hide G, Isaac A, Ivanoski S, Mansour RM, Muntaner L, Navas A, O P, Örgüç S, Rennie W, **Resano S**, Robinson P, Sanal HT, Ter S, van K, Wörtler K, Koelz M, Panotopoulos J, Windhager R, Bloem JL. Soft tissue tumor imaging in adults: European Society of Musculoskeletal Radiology-Guidelines 2023-overview, and primary local imaging: how and where?. *Eur Radiol*. 2023;DOI:10.1007/s00330-023-10425-5.

## 59

Adamo M, Chioncel O, Pagnesi M, Bayes A, Abdelhamid M, Anker SD, Antohi EL, Badano L, Ben T, Böhm M, Delgado V, Dreyfus J, Faletta FF, Farmakis D, Filippatos G, Grapsa J, Gustafsson F, Hausleiter J, Jaarsma T, Karam N, Lund L, Lurz P, Maisano F, Moura B, Mullens W, Praz F, Sannino A, Savarese G, Tocchetti CG, van VPM, von RS, Yilmaz MB, **Zamorano JL**, Ponikowski P, Barbato E, Rosano GMC, Metra M. Epidemiology, Pathophysiology, Diagnosis and Management of Chronic Right-Sided Heart Failure and Tricuspid Regurgitation. A clinical consensus statement of the Heart Failure Association (HFA) and the European Association of Percutaneous Cardiovascular Interventions (EAPCI) of the ESC. *Eur J Heart Fail*. 2023;DOI:10.1002/ejhf.3106.

## 60

Martínez E, Antepará I, **Muñoz M**, PROs E, Casas F, Calvín M, Chiner E, Crespo C, Díaz D, Eguiluz I, García S, González R, Habernau A, Hermida T, Jornet S, López V, Martínez I, Merino V, Moreno Á, Mínguez AC, Monte E, Revuelta JL, **Sánchez S**. Patient-reported outcome measures in severe asthma: an expert consensus. *J ASTHMA*. 2023;1 - 13. DOI:10.1080/02770903.2023.2297372.

## 61

Oliver A, Rojo E, Arca J, Besli Y, Bogaerts P, **Canton R**, Cimen C, Croughs PD, Denis O, Giske CG, Graells T, Daniel T, Iorga BI, Karatuna O, Kocsis B, Kronenberg A, Lopez C, Malhotra S, Martinez LM, Mazzariol A, Meyer S, Naas T, Notermans DW, Oteo J, Pedersen T, Pirs M, Poeta P, Poirel L, Pournaras S, Sundsfjord A, Szabo D, Tambic A, Vatcheva R, Vitkauskiene A, Jeannot K, ESGARS M. Pseudomonas aeruginosa antimicrobial susceptibility profiles, resistance mechanisms and international clonal lineages: update from ESGARS-ESCMID/ISARPAE Group. *Clin Microbiol Infect*. 2023;DOI:10.1016/j.cmi.2023.12.026.

# IRYCIS highlights in 2023

## Internationalisation

During 2023, numerous applications have been submitted, and IRYCIS has actively collaborated in numerous actions and consortia within the European Union Framework Programme for Research and Innovation 2021-2027 - Horizon Europe - and other programmes or funding mechanisms for research, which has enabled IRYCIS to have five new projects awarded and/or started



**ERADIAMR**\_JPIAMR-ACTION Joint Transnational Call for Proposals 2023

Dr. Rafael Cantón (Area 2)

Effective RAPid Diagnostics and treatment of AntiMicrobial Resistant bacteria.

**EURL- IVD.1**\_EU4H-2023-DGA-MS2-IBA

Dr. Rafael Cantón (Area 2)

Harmonization process of European Reference Laboratories for *in vitro* diagnosis.



**EATRIS-CONNECT**\_HORIZON-INFRA-2023-DEV-01-03

Dra. M Laura García Bermejo (Area 4)

DIGITAL TRANSFORMATION IN HEALTH CARE SYSTEMS; WP6: Digital Transformation in the context of use: the case of pancreatic cancer.



**MORPHEUS**\_HORIZON-HLTH-2022-TOOL-11

Dr. David Jiménez (Área 5)

Prognosis improvement of unprovoked venous thromboembolism using personalized anticoagulant therapy.



**STBERNARD**\_HORIZON-CL3-2022-DRS-01

Dr. Francisco Javier Burgos (Area 5)

System for SAFE Biological chEmical Radiological and Nuclear Assessment, Rescue and Decontamination.

\*First project obtained within Cluster 3 of "Civil Safety for Society".

# IRYCIS highlights in 2023

## Innovation

### 1 million euros

procured in competitive calls on innovation.

1 **HealthStart 2023** project granted: EMcare

health**start**  
madri**ed**

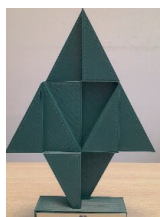
The first five initiatives of the “**MISSION IRYCIS 2030**” programme have been launched.

**MISION** 2030 **N**  
**IRYCIS**

4 awards won in **Hackathon eSalud 2023**: TrainingCajal, VIDA- VIMM, SEMSOR and Prevention in Ovarian Cancer

 **HACKATHON**  
SALUD

Two awards for the “Accompain” app, Dr Carolina de la Pinta (Novartis-IESE award and 2023 Ennova health award)



“**Innovation lifter**” award from La Nave to Diego Velasco.



1 project of the **CaixaImpulse 2023 call** granted to Dr Sergio Serrano, “Biomarkers associated with the microbiome for improving the prevention of anal cancer in susceptible populations”, in collaboration with CSIC.

 **Fundación “la Caixa”**

The Innovation Unit continues to grow, as shown by the fact that its proposal for the **ISCIII Platforms call has been the third best funded on the national level.**

 Instituto de Salud Carlos III

### 2 registrations of software:

HAZLO and EPIMOLBIO

### 1 registration of intellectual property:

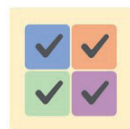
EMCARE

 safe**creative**

### 6 Apps and/or tools already available on the IRYCIS website

**PreveMama**  
Test de riesgo de cáncer de mama

**SER+**  
CONTRA COVID



**NO HACER** 



# IRYCIS highlights in 2023

14

## Other Projects, Awards and Recognitions

**39% success in the AES 2023 call, with the awarding of 18 health research projects, and 100% success in the 3 ISCIII Platforms for R&D Support and Health Sciences (Platforms for Clinical Research, Biomodels and Biobank and Innovation)**



**Success in the first FORTALECE call funded by ISCIII: excellent evaluation and full funding of the FAR (FortALEce iRycis) proposal.**



**Success in the first call of the State Network Consortium for the Development of Advanced Therapy Drugs (CERTERA) funded by ISCIII**



**A new FARMA-PRED-PEP project in the ISCIII call of research projects of personalised medicine**



**2 new national competitive projects funded by MICINN**



**1 project awarded in the call on research related to the prevention of gaming disorders from the Ministry of Consumer Affairs**



**1 project granted in the María de Guzmán 2023 FECYT call.**



**FIBioHRC is committed to 11 new research projects in its intramural grant directed to new personnel and Accessing groups 2023**



**Awarding of 10 competitive research grants funded by private entities.**



**Dr Alfonso J. Cruz-Jentoft, Dr Rafael Cantón and Dr José Luis Zamorano are among the most cited scientists in 2023 worldwide in the Clarivate Highly Cited Researchers ranking**



**Dr Julia Buján. Full Member of Academia Médico-Quirúrgica Española.**



**Dr Melchor Álvarez de Mon, one of the most distinguished internal medicine physicians of Spain according to the annual ranking prepared by the digital newspaper El Confidencial.**



**Dr Jesús Maria Aranaz, recognized for his professional trajectory by the Universidad Internacional de La Rioja (UNIR).**

# IRYCIS highlights in 2023

14



**Dr. Jerónimo Rodríguez. Jaime Ferrán Award (SEM).**



**Dr Luis Manzano, Dr Sergio Vañó and Dr José Luis Zamora, recognised with the Honorary Award “Most renowned physicians” of Spain by MERCO and the Observatory of Health.**



**Dr ELENA Moreno. GESIDA national award to the Young Researcher.**



**Dr José Palacios. Ramón y Cajal Award (SEAP).**



**Dr José García. ICL 2023 Prize for Luminescence Research..**



**Dr Julio Acero. Full Member of Academia Médico-Quirúrgica Española.**



**Dr Juan Manuel Bellón received recognition for his research and innovation work from the Professors Emeriti of UAH..**



**Dr Juan José Vaquero, distinguished with the UAH Silver Medal.**



**Dr Patricia García, award to the new director of sciences, health sciences, engineering and architecture in the 2023 call of UAH**



**Dr Agustín Albillos. Award for research excellence of UAH.**



**La Escuela de Pacientes de Cáncer Colorrectal, coordinated by Dr Reyes Ferreiro, awarded by the Fundación para la Excelencia y la Calidad de la Oncología**

# IRYCIS highlights in 2023

## IRYCIS Brand or "IRYCIS COMMUNITY"



Foto 1. Ponentes mesa inaugural. Foto 2. Prof Baquero. Foto 3. Coloquio. Foto 4. Dr. Rosbash

FIBioHRC celebrates its 20th anniversary with a conference of extraordinary content, enormous healthcare success and, as a finishing touch to the event, the master class by Nobel Prize winner Dr Michael Rosbash, thanks to the Nobel Prize programme of Fundación AstraZeneca.



IRYCIS restructures its Central Support Units (CSUs) and improves and broadens its Portfolio of other Scientific-Technical Services.



Dr Diego San José (S. Preventive Medicine), Roberto Pariente (Dept. of Immunology), Hilario Martínez (Dept. of Pharmacy) and Mercedes Castro (Dept. of Adult Heart Surgery) were selected in the intramural REX-PADI 2023-2024 call.



Active participation of IRYCIS in the XIII Conference of Residents of Hospital Universitario Ramón y Cajal

IRYCIS welcomes 4 new groups assigned to research areas 4, 5 and 6.



10 disseminations of the initiative "Young Talent of IRYCIS", in which once a month we showcase one of our postdoctoral researchers to inspire and create examples for recently arrived researchers, encouraging collaboration and promoting our IRYCIS brand..



JOVEN TALENTO IRYCIS



More than 30 engineers are assigned to various departments of our Hospital through a collaboration between IRYCIS and Universidad Politécnica de Madrid (UPM).

# IRYCIS highlights in 2023



IRYCIS participated for the second consecutive year and with considerable success in the “**European Researchers’ Night**” call.

IRYCIS wrote the **Guidelines of the Impact and Perspective of Gender in Research Projects**, with high recognition of its usefulness by our research staff and by other healthcare research institutes.



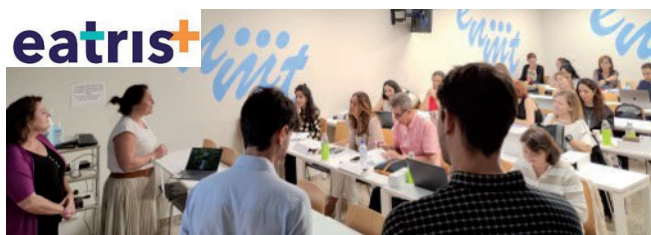
IRYCIS held a conference on stroke framed within of the **Week of Science and Innovation**.



IRYCIS participated for the first time in the **Educational Stay Programme for 4th-year Students of ESO+ COMPANY**.



Launch of the **Predoctoral Researchers Group-R1**.



Representatives from more than 20 healthcare research institutes met in Madrid to build a **Patient Engagement Strategy**, exportable to Europe, within the framework of the Spanish node of EATRIS, led by our Scientific Director, Dr M. Laura García Bermejo, in whose organisation IRYCIS actively participated within the framework of the European project EATRIS-Plus- 871096.



IRYCIS organized the **Conference of its Areas 4 and 5**, allowing its groups to interact and establish synergies and collaborations.

# Impact on Society

Working always for Responsible Research and Innovation (RRI) that responds to current societal challenges and brings science to the public to make joint decisions that affect our future as a society, IRYCIS has implemented various activities to build bridges in all stages of the research and innovation processes. IRYCIS thereby manages to promote, according to the European Commission, the following six political agendas: ethics, gender equality, public participation, scientific education, open access, and governance.

In 2023, multiple initiatives were implemented, including the drafting, as proposed by the “IRYCIS Brand” Subcommittee of the Research Committee, of the Guidelines on the Impact and Perspective of Gender in Research Projects and, focusing on each of the 6 principles of RRI:

## 1. ETHICS AND SCIENTIFIC INTEGRITY



Training Course in Good Clinical Practices. Coordinates: Clinical Research and Early-Phase Clinical Trials Unit.



We continue working on the Action Plan linked to the Human Resources Strategy for Researchers (HRS4R) of the Clinical Trial.

## 2. GENDER EQUALITY

### Activities to commemorate International Women and Girls in Science Day

YouTube Video: 11 IRYCIS researchers, representatives of the various job profiles, participated in a video, briefly explaining their job and leaving a highly positive message to encourage girls and young women to become important scientists





# Impact on Society

## Activities to commemorate International Women's Day

IRYCIS visibility and YouTube video: shared initiative, for the first time coordinated by FIBioHRC, the Commission against Violence and the Hospital's Social Work Service, in which all Institution personnel met for a group photograph, and purple ribbons were handed out.



## Participation in the Gender Workgroup of the ISS Forum of ISCIII



## 3. PUBLIC PARTICIPATION

### Dissemination and Events

IRYCIS held a **conference on stroke** framed within the Week of Science and Innovation 2023.

**FIBioHRC celebrates its 20th anniversary** with a conference of extraordinary content, enormous healthcare success and, as a finishing touch, a visit from the Nobel Prize winner Dr Michael Rosbash.

Representatives of more than 20 healthcare research institutes met in Madrid to build a **Patient Engagement** strategy, exportable to Europe, within the framework of the Spanish EATRIS node. Dr García Bermejo.

**The psoriasis revolution event** (the proceeds of which go to psoriasis research). Dr González Cantero.

YouTube video to commemorate the International Day of LGBTQ+ People in STEM. IRYCIS prepared a small video with the aim of highlighting the contribution, often hidden over the course of history, of the LGBTQ+ community to science.



**IX Meeting between Mental Health Researchers, Patients and Relatives:** Together we build Mental Health. Dr Saiz and Dr Montes.

**Day for Fundación de Retina Patients.** Dr González.

**Day for Fundación Once Patients** in World Sight Day. Dr González.

**YouTube video:** "The language of signs: a tool to improve the healthcare of patients with hearing loss". Dr Moreno-Pelayo.



## Dissemination and Events

**Solidarity Market** for the Fight Against AIDS world day Day. Dr Holguín.

**Online lecture** with the Ministry of Health on the HIV research work in the context of international healthcare cooperation. Dr Holguín.

**Scientific lecture** in the XVIII lectures on the study and research of ataxia (Forataxia). Dr González Muñoz.

**Presentation:** “What options does Radiation therapy offer for Frail Patients?” in the II Conference: New challenges of Geriatric Oncology. Dr de la Pinta.

**Interuniversity course for older adults of the Community of Madrid.** “Genetics: playing with letters”. Dr Pérez Köhler.

**Conference for patients with lupus.** Dr González García.

**XVI Conference on Multiple Sclerosis and Society.** Dr Costa-Frossard.

**4th edition of the School of Colorectal Cancer.** Dr Ferreiro.

**First session of the School of CPAP Patients.** Dr Jiménez Castro.

**Conference “Laying Seige to Alzheimer’s disease”.** Dr Moreno-Pelayo.

**XI Conference “We are patients”.** Digitalisation and patients: the moment of the revolution. Dr García Bermejo.



# Impact on Society

## Campaigns, Journals, Informative Articles, Interviews and Podcasts

News in the El Pais newspaper: “One of every four women with cystitis receives inappropriate antibiotics as treatment”. Dr Canton.

News in Onda Cero radio: “The experts predict what will happen with COVID and the vaccines from this point on”. Dr Canton.

News in El Pais: “The potential of faecal transplantation: Effective against an aggressive bacterium and promising in oncology”. Dr del Campo.

Interview in La Voz de Galicia: “Pedro Manuel Ponce, biologist of Lugo: Faecal transplantation is increasingly applied”. Dr Ponce.

News article in El Español: “Dr Moreno, the geneticist who knows what diseases you will inherit: This is how she detects them in Hospital Ramón y Cajal”. Dr Moreno-Pelayo.

News in El Pais: “Spanish scientists resuscitate proteins from millions of years ago and use them to correct albinism in human cells”. Dr Moreno-Pelayo.

Several articles and an interview in Foro para la investigación de la cerveza (FICYE, Forum for Beer Research). Dr Martín Brieva.

News in Diario de Alicante: “Traffic collisions, one of the main causes of trauma in Spain”. Dr García-Moreno.

News in Murcia.com: “Internists analyse the usefulness of artificial intelligence in autoimmune disease and the scenario opened by the new available biological therapies”. Dr González.

News in CODEM: “A nurse in Madrid among the worldwide elite of sterilisation”. Mercedes García Haro.

Participation in the podcast “Bioentrepreneurs” to talk about ApToll: from the laboratory to clinic. Dr González Muñoz.

Participation in the Medical Writing podcast “Healthcare Leaders”. Dr García Bermejo.

Interview in journal and dissemination podcast: The Unknown. “Science with animals”. Dr Pérez Köhler.

Campaign to raise awareness of rare diseases and the reality of their patients: “The Rare Ones” supported by Pfizer and the European Regional Development Fund. Dr López Rodríguez.



La directora científica del Irycis pone en valor la excelencia del personal y los resultados en detección de cáncer



# Impact on Society

## Projects

VISION-857381. Strategies to strengthen scientific excellence and innovation capacity for early diagnosis of gastrointestinal cancers (CSA of the WIDESPREAD-H2020 programme). Dr Carrato.

Project SO-NUTS to promote healthy habits in retirement. Dr Cruz-Jentoft.

Project EUREKA. "Forensic science workshop: Police Investigation". Dr Pérez Köhler.

Teaching/service project in secondary schools of the Community of Madrid "Micromundo" on the problem of Antibiotic-Resistance. Dr Jiménez Cid.

Project BIG DATA for improving the trajectory of patients with Multiple Sclerosis (Novartis). Dr Villar.

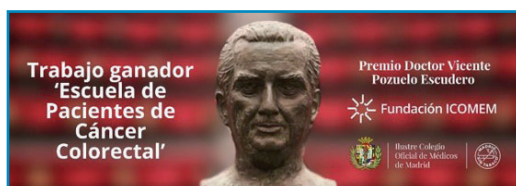
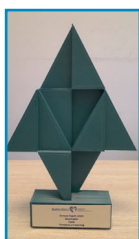


## They recognise our social impact

Two awards to the ACOMPAIN App: Ennova Health 2023 (Diario Médico) and Novartis-IESE Awards. Dr de la Pinta.

La Escuela de Pacientes de cáncer colorrectal awarded by the Fundación para la Excelencia y la Calidad de la Oncología. Dr Ferreiro.

The hospital was awarded for a study on COVID in patients with rheumatic disease. Dr Vázquez.



# Impact on Society

## Webpages, Mobile Apps, Scorecards, Books

### IRYCIS YouTube Channel

Informative website <https://esmisionposible.com/>, and the associated Twitter account: @esmisionposible for dissemination on antibiotic-resistance. Sara López and Beatriz Lavilla.

ACCOMPAIN App created by IRYCIS+UPM for monitoring oncologic pain, improving patients' quality of life and helping medical personnel in the decision-making process.

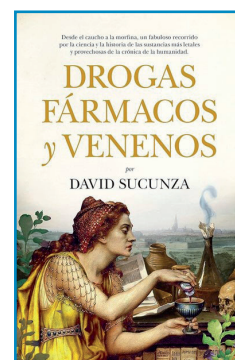
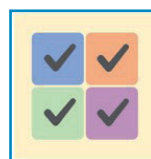
No Hacer [Do not do] App. The objective is to reduce low-value practices and thereby improve patient safety.

ADECUAS App. Tool for evaluating clinical procedures.

MAPAC-DX App. App for improving the appropriateness of requests for diagnostic tests in the Emergency Department.

VIDAVIMM Scorecard for the follow-up of multiresistant diseases. Dr Moreno and Dr Bennouna.

Participation in the Scientific Dissemination and Transference Unit initiative of the Faculty of Veterinary medicine of UCM "Science through books" with the presentation of the book: "Drugs, Pharmaceuticals and Poisons". Dr Sucunza.



# Impact on Society

# 15

## Media

Throughout 2023, IRYCIS and its management body FIBioHRC, have been present in mass media on 49 occasions, addressing, among other issues, new therapies in proteins from 2.6 billion years ago, ultrasound therapy against pancreatic cancer, the retina as a biomarker for determining therapeutic efficacy in Dravet syndrome, a “pioneer” study in the prevention of long-term disability in patients with multiple sclerosis, infections by multiresistant bacteria, two new markers for detecting anal cancer, the yield of blood and dry plasma samples for diagnosing hepatitis C, the increase in cases of invasive pneumococcal disease in 2023, the influence of the menstrual cycle in the glycaemic response of women with type 1 diabetes, the relationship between polycystic ovary syndrome and metabolic disease, and recognition and awards for IRYCIS staff.



## 4. SCIENTIFIC EDUCATION

### Activities for promoting the research vocation

IRYCIS participated for the first time in the Educational Stay Programme for 4th-year Students ESO + COMPANYY.

More than 30 engineers are hosted another year in different departments of our Hospital through a collaboration between IRYCIS and UPM.

IRYCIS participated another year with enormous success in the 2023 edition of the “European Researchers’ Night” ((1) Micro-talks. Dr Gálvez and Dr Zamora, Miriam Mateos and Laura del Campo, (2) Microbiota Workshop. Dr del Campo and her team, (3) Research Fair and (4) Speed-dating).

XXIII Week of Science and Innovation 2023: “Get to know Chemistry, get to know the Periodic Table”. Dr Merino.

XXIII Week of Science and Innovation: “Of the Scientific Profession” Dr Benito.

XXIII Week of Science and Innovation: “#ImproCiencia” CIBER initiative. Dr Insenser.

Major success in participation and high quality of research projects in the XIII Conference of Residents of Hospital Universitario Ramon y Cajal

# Impact on Society

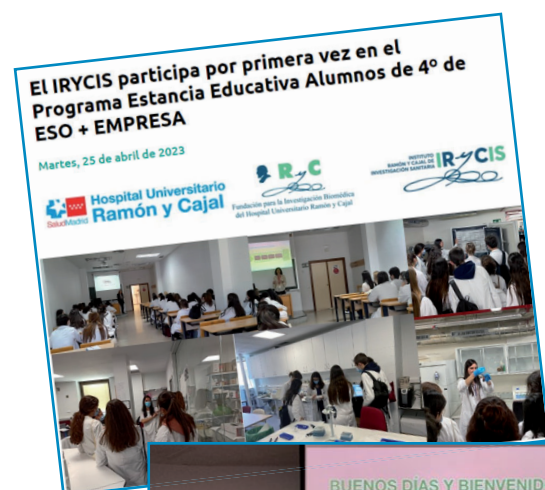
Activity of Fundación Axa within its campaign with Atresmedia of “Girls, Science Needs You” Dr Mansilla.

2023 UIMP summer course – Palacio de la Magdalena, Santander. Dr Moreno-Pelayo.

Conference Master Chemical for Sustainability and Energy: “From drugs to sustainable drugs: what remains to be ploughed”. Dr Vaquero.

Performance “Protobosque. An attempt to be together”. Dr Mansilla.

Our researchers in the classroom. Dr Martínez (CEIP 2 de Mayo), Dr León (CEIP Tierno Galván), Dr Peña (Nuestra Señora del Val), Dr Hernández Bule (CEIP Pablo Picasso), Dr Sánchez (iFP Innovación en Formación Profesional, IES Antonio Machado), Dr Mansilla (Instituto JM Bilbao, Instituto Biofísica de Bilbao, IES Pablo Picasso), Dr del Campo and team (Colegio Artica), Dr Holguín (King’s College of Soto de Viñuelas).



semana de la  
ciencia y la innovación

## Conferences, scientific encounters, webinars, information capsules, courses and other forums

XXII National Congress -XI International of Sociedad Española de Medicina Preventiva, Salud Pública y Gestión Sanitaria. Dr Díaz-Agero.

II Conferences of the Network of Advanced Therapies of the Community of Madrid. Dr López Jiménez and Dr del Cerro.

Hosting of 18 Mexican haematology professionals

(Preceptorship visit). Dr García Gutiérrez.

Biocat round table: “Matchmaking innovation in health. Personalized medicine”. Panel: “Ensuring sustainability, governance and reliability of secondary use of health data in Europe”. Dr de la Pinta.

Iqvia round table: “Artificial intelligence in clinical practice: first experiments”. Dr de la Pinta.

IRYCIS Seminar: “Transformative research: challenges, approaches and evaluation of the impact of research” given by Dr Adam (Agència de Qualitat i Avaluació Sanitàries de Catalunya (AQuAS))

Table of specialists on the milestones and future of liver transplantation. Dr Albillos.



# Impact on Society

Practical-theoretical course on Cardiac Rehabilitation of the hospital. Dr Zamorano.

18th Conference on Travel Medicine. Dr Pérez Molina and Dr López-Vélez.

V Conference on Diabetes, Obesity and Human Reproduction: Updates on Polycystic Ovary Syndrome (PCOS). Dr Escobar, Dr Fernández and Dr Insenser.

Conference “The challenge of Continuity of Care” focused on the care of chronically ill patients. Dr Manzano

For the second time, the Hospital hosted the “Hackathon of Health 2023”, in whose organisation IRYCIS participated.

First Refresher Course on Pituitary Tumours. Dr Escobar.

Eleventh Edition of the Refresher Course on Trichology. Dr Vañó and Jaén.

Decoding Genomics, conference on the clinical application of genomics. Dr Moreno-Pelayo.

IV Scientific Conference INUBE - Inaugural presentation: ‘Microbiome’. Dr del Campo.



In the training section of our website, there is detailed information on the courses and seminars organised by IRYCIS, including access routes and enrolment, which are updated every six months. Furthermore, a link is included to “Other events” where information can be accessed on courses, conferences, webinars, etc., organised by other institutions.



# Impact on Society

## 5. OPEN ACCESS

Our researchers are committed to open publication.



The number of IRYCIS research staff with ORCID codes is steadily increasing.



Open Science Policy of IRYCIS.



Active collaboration with the institutional repository of the Community of Madrid as an open digital space for all types of data or health results.



**REPOSITORIO INSTITUCIONAL**

DE LA CONSEJERÍA DE SANIDAD DE LA COMUNIDAD DE MADRID

## 6. RESPONSIBLE GOVERNANCE

**Independent ethics committees:** Ethics Committee for Animal Experimentation (ECAE) and Research Ethics Committee (REC)

**Advisory bodies:** External Scientific Committee, Research Committee, Innovation Commission, Innovation & Social Advisory Board (ISAB), Training Commission and Quality Committee



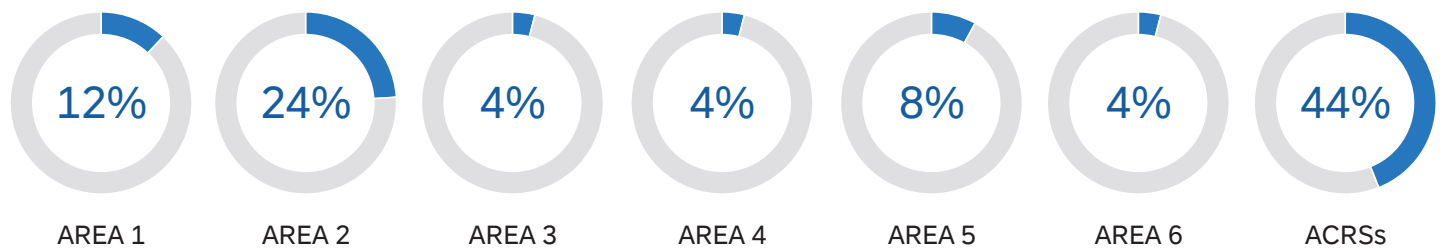
# Innovation Unit

## 2023 Portfolio of Innovation

At the end of the year, the IRYCIS 2023 portfolio of innovation contained 129 active projects. These are classified, according to ITEMAS requirements, according to the phase of the classic innovation funnel and the technology area to which they belong in the following manner:

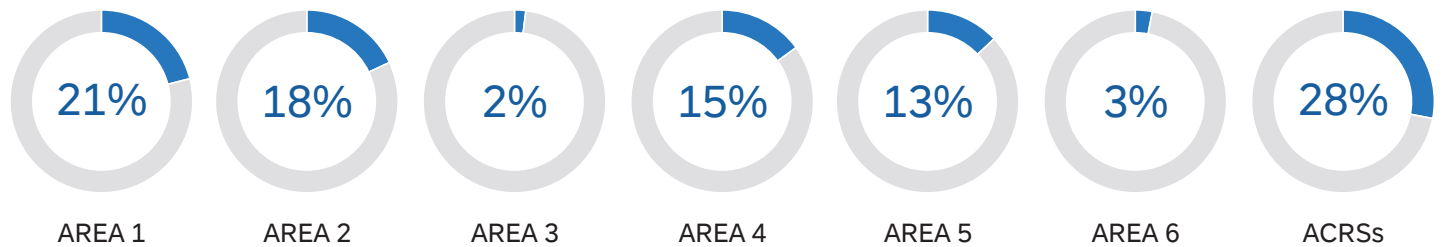
PHASE	No. of Projects	TICs Salud	Material and devices	Pharma	Biotech	Image	Organisational Assistance
Acquisition	16	6	2	2	2	0	4
Lab work	14	10	2	1	1	0	0
Development	40	11	6	5	10	2	6
Transfer	46	13	3	5	11	4	10
Market	13	5	0	3	4	1	0
<b>Total</b>	<b>129</b>	<b>45</b>	<b>13</b>	<b>16</b>	<b>28</b>	<b>7</b>	<b>20</b>

No. of new ideas per IRYCIS area



The 28 new ideas collected by the Innovation Unit (IU) in 2023 are noteworthy for their diversity, both in origin and type. Approximately 44% are from Associated Clinical Research Staff (ACRS), and the rest are from groups.

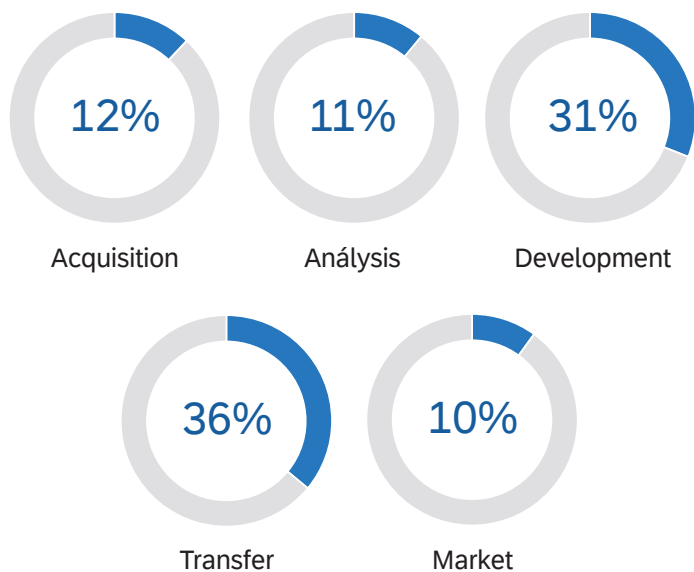
No. of ideas by IRYCIS area



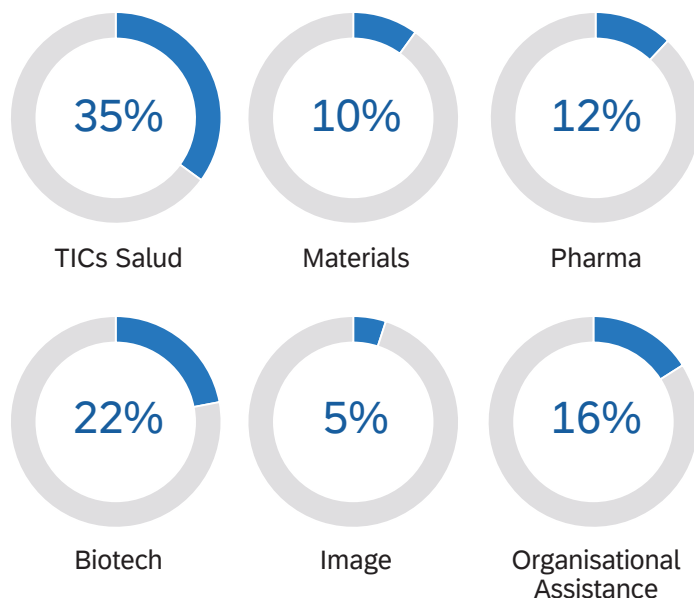
# Innovation Unit

# 16

No. of ideas by phase



No. of ideas by type



Projects closed in 2023

**17**

New projects in 2023

**25** 3 evaluated for HUIL

Projects implemented or in use in the centre

**45**

Projects in use and/or transferred in 2023

**6**

## Promotion of healthcare innovation

The IU has promoted the practical training of biomedical engineering students, with a total of 11 innovative projects and 11 students and has coordinated a new edition of the INGENIA-Hospital of the Future programme, launching 4 new projects in the setting of improving healthcare processes, of planning and of environmental management with a total of 16 students.

## Intellectual and industrial property

### Patents:

Active families

**28**

New applications in 2023

**16**

3 European priorities and 1 priority via PCT  
5 PCTs  
7 entries into national phases

New awards

**5**

Granted and in effect in 2023

**29**

Intellectual property registrations

**3**

# Innovation Unit

## Entrepreneurship, transference and implementation in the Hospital

**4** Start-ups incorporated and active in 2023 (cumulative).

Joint development agreement and license for the Contours project, led by Dr de la Pinta, with ATFísica, in collaboration with the Universidad Politécnica de Madrid.



Marketing agreement with Dr S. Vañó for the new edition of the Trichology Manual.



One project was included in the entrepreneurship programme HealthStart (EMcare, Dr Chico).



Update signed with iDoctus for the TEAM application of support for the prescription of hospital antibiotics.



Joint development agreement and licence agreement signed between a multinational company and Stem Vision for the artificial cornea project, led by Dr Arnalich, in collaboration with IdiPAZ.



New version of the cardiac rehabilitation platform HAZLO, developed by Dr de Pablo, in collaboration with ISCIII, registered through intellectual property.



Joint development agreement and license signed with the company Mikrobiomik for a project led by Dr del Campo and Dr García in the microbiota area.



EPIMOLBIO software of Dr Holguín registered as intellectual property.



Agreement signed with the company Owkin to develop an artificial intelligence tool applied to prostate cancer with radiation oncology. Dr López.



## Communication, presence in business forums and media

Training and informative activities

**28**

Impact of projects managed by IU on communication media

**30**

Signed agreements (alliances, framework agreements and specific collaborations)

**42**

5 MTAs and 16 CDAs signed

**21**

New projects of applications submitted to Hackathon of eSalud (4 awards) and 1 HealthStart 2023 entrepreneurship project

**10**

Participation in dissemination activities: Innovation in nursing, 4º + Empresa, ITEMAS investment forum, Ingenia 2023, South Summit, HUIL Innovation Conference, 20 years of FIBioHRC, ISCIII Platform Conference

Also, in 2023, the Director of the IU, Diego Velasco, received the Innovation Lifters award from the centre for innovation of the Ayuntamiento de Madrid – La Nave.

# Innovation Unit

## Participation in calls

CaixaImpulse



Public-private collaboration (MCINN)



DTS (ISCIII)



HealthStart (Fundación Madrid+d)



Horizonte Europe (UE)



Gilead VISIONARIUM



María de Guzman FECYT



Novartis IESE



Ennova Health



Platforms (ISCIII)



FORTALECE (ISCIII)



Hackathon



★ The success rate of granted projects to which UI has offered support for its application is 48%

## Other activities of interest

The Unit renews its certification and updates it for the UNE 16002:2021 "R&D Management System" standard obtained in March 2023.

Gestión  
I+D+i

UNE 166002

As member of the ITE-MAS Platform, the Innovation Unit has, over the course of 2023, assumed the following roles:



- Coordinator of the Transference Commission
- ITEMAS Innovation Committee Member
- Support for training and mentoring of projects in other centres: Hospital Universitario Infanta Leonor

# Internationalisation

## ACTIVE EUROPEAN PROJECTS AND INTERNATIONAL INITIATIVES

IRYCIS research groups have solid experience, both in participating as partners in consortia and in leading competitive projects funded by the European Commission. IRYCIS not only participates in the European Union Framework Programme for Research and Innovation, Horizon Europe, but also extends its scope to other programmes, including DIGITAL, EU4Health, and IHI.

### A few figures for 2023:

New applications to international calls

17 

Active international projects and initiatives

36 

Currently active coordinated projects

2 

### IRYCIS as member of European networks and platforms

**EATRIS:** European Infrastructure for Translational Medicine. Dr Maria Laura García Bermejo is the Scientific Director of the Spanish node of EATRIS



**ECRIN:** European Clinical Research Infrastructure Network



**VACCELERATE:** European Corona Vaccine Trial Accelerator Platform



## European Union Framework Programme for Research and Innovation

### Pillar I: Excellent Science

2 ERC Starting Grant projects (H2020 & HE)



**HorizonGT.** Constraints and Opportunities for Horizontal Gene Transfer in Bacterial Evolution (101077809). Dr. Jerónimo Rodríguez Beltrán (COORDINATOR)



**PLASREVOLUTION.** Understanding the evolution of plasmid-mediated antibiotic resistance in real life scenarios (757440). Dr. Álvaro San Millán (COORDINATOR)



## 1 Marie Skłodowska-Curie grant (HE)



**MSCA-PF: METEOR.** MicrobiomE-associATEd boosters Of immune Responses: experimenTAL characterization and clinical exploitation. (101064842). Dr. Sergio Serrano (IP) & Dra. Elena Moreno (postdoctoral fellow)



## 1 research infrastructure project H2020



**EATRIS-Plus:** Consolidating the capacities of EA-TRIS-ERIC for Personalised Medicine (871096). Dra. Laura García Bermejo.



## Pillar II: Societal Challenges (H2020) / Global Challenges and Industrial Competitiveness (HE)

### 5 collaborative projects of the H2020 programme



**VISION:** Strategies to strengthen scientific excellence and innovation capacity for early diagnosis of gastrointestinal cancers (857381). Dr. Alfredo Carrato.



**ImmunAID:** Immunome project consortium for AutoInflammatory Disorders (779295). Dra. Alina Boteanu & Dra. M<sup>a</sup> Ángeles Gálvez.



**DECISION:** Decompensated cirrhosis: identification of new combinatorial therapies based on system approaches (847949). Dr. Agustín Albillos.



**RETENTION.** Heart failure patient management and interventions using continuous patient monitoring outside hospitals and real world data (965343). Dr. José Luis Zamorano



**RESILIENCE.** Remote Ischemic Conditioning in Lymphoma Patients Receiving Anthracyclines. (945118) Dr. Francisco Javier López



## 6 collaborative projects of the Horizon Europe programme



**REMED4ALL:** Building a sustainable European innovation platform to enhance the repurposing of medicines for all (101057442).  
Dra. Laura García-Bermejo.



**STRATIFYHF:** Artificial intelligence-based decision support system for risk stratification and early detection of heart failure in primary and secondary care (101080905).  
Dr. José Luis Zamorano



**IN-ARMOR:** Therapeutic epigenetic enhancement of the innate immunity to effectively combat antimicrobial resistance (101080889).  
Dr. Rafael Cantón



**MORPHEUS:** Prognosis improvement of unprovoked venous thromboembolism using personalized anticoagulant therapy (101095698).  
Dr. David Jiménez



**PANCAID:** PANcreatic CANcer Initial Detection via liquid biopsy (101096309). Dr. Alfredo Carrato



**STBERNARD:** SysTEm for SAFE Biological chEmical Radiological and Nuclear Assessment, Rescue and Decontamination (101121308).  
Dr. Francisco Javier Burgos



## Digital Europe Programme



## EU4Health Programme



**EUCAIM:** European Federation for Cancer Images (101100633).  
Dr. Javier Blázquez.



**RELECOV 2.0:** “Consolidation of WGS and RT-PCR activities for SARS-CoV-2 in Spain towards sustainable use and integration of enhanced infrastructure and processes in the RELECOV network, RELECOV 2.0” (101113109). Dr. Rafael Cantón





## Other research initiatives

### 5 projects of the Innovative Drug initiative (IMI-7PM/H2020)



**i-ABC:** Inhaled Antibiotics in Bronchiectasis and Cystic Fibrosis (115721). Dr. Rafael Cantón.



**COMBACTE-CARE:** Combatting bacterial resistance in Europe-Carbapenem Resistance (115620) Dr. Rafael Cantón.



**COMBACTE-NET:** Combatting Bacterial Resistance in Europe (115523). Dr. F. Javier Cobo



**3TR:** Identification of the Molecular Mechanisms of non-response to Treatments, Relapses and Remission in Autoimmune, Inflammatory, and Allergic Conditions (831434). Dra. Luisa M<sup>a</sup> Villar



**CONECT4CHILDREN:** Collaborative network for European clinical trials for children (777389). CASPERCF study. Dra. Ana Morales



## 3 European transnational projects in European Partnerships



**ERA-NET TRANSCAN-2\_NEXt:** Establishing an algorithm for the early diagnosis and follow-up of patients with pancreatic neuroendocrine tumors. (AC18/00019). Dr. Alfredo Carrato



**ERA-NET EuroNanoMed-3\_NANO4GLIO:** Nanomedicine for glioblastoma therapy (AC19/00146) Dra. M<sup>a</sup> Ángeles Vaz.



**EU-LAC interest group\_ABSarbo:** Aptamer-based strategies to create novel biotechnological tools against Arboviruses. Dr. Víctor Manuel González.



## 4 projects/networks in Joint Programming initiatives



**MISTAR:** Microbiota Intervention Strategies Limiting Selection and Transmission of Antibiotic Resistance burden in the One Health domain. Dra. Teresa Coque.



**ISARPAE:** Improving surveillance of antibiotic-resistant Pseudomonas aeruginosa in Europe (JPIAMR\_NC\_2022-021). Dr. Rafael Cantón.



**TEAPOTS:** Tools for the Epidemiology of AMR Plasmids, One-Health Transmission and Surveillance (JPIAMR\_NC\_2022-015). Dra. Teresa Coque.



**SO-NUTS:** Preventing obesity, sarcopenia, and Sarcopenic Obesity in retirement – digital personalized interventions for healthy NUTrition and physical activity for seniors. (PCI2020-120683-2). Dr. Alfonso J. Cruz-Jentoft



## 1 EDCTP2 programme project



**Stool4TB / SULTAN study:** A Stool-based multi-omic approach to unravel novel biomarkers of tuberculosis from Stool4TB project “Evaluating a new stool-based qPCR for diagnosis of tuberculosis in children and people living with HIV”.  
Dr. Sergio Serrano (IP SULTAN study).



## Initiative of European Universities of the European Commission (EC)



**EUGLOH 2.0: European University Alliance for Global Health.**  
Dra. Laura García Bermejo.



## Participation in 2 COST Activities



**ERNST:** The European researchers' network working on second victims (CA19113).  
Dr. Jesús M<sup>a</sup> Aranaz



**TRANSPAN:** Identification of biological markers for prevention and translational medicine in pancreatic cancer (CA21116).  
Dr. Alfredo Carrato y Dra. Julie Earl



## 1 European tender in consortium of the JRC Tender



**JRC Tender (943473-IPR-2022):** Systematic reviews for the European Commission initiatives on breast, colorectal and cervical cancer – Lot 1&2.  
Dr. Javier Zamora

## IRYCIS as a participating centre in clinical studies resulting from European projects

**MICROCARE** - A multicenter, randomized, placebo-controlled, parallel-arm clinical trial to evaluate the efficacy of DAV132 in preventing *Clostridioides difficile* infection in patients with newly diagnosed Acute Myeloid Leukemia or high-risk Myelodysplastic Syndrome treated with intensive chemotherapy. Dr. F. Javier Cobo



**REVISIT**- A Phase 3 prospective, randomized, multicenter, open label, central assessor blinded, parallel group, comparative study to determine the efficacy, safety and tolerability of aztreonam avibactam (ATM AVI) ±metronidazole (MTZ) versus meropenem±colistin (MER±COL) for the treatment of serious infections due to Gram negative bacteria, including metallo  $\beta$  lactamase (MBL) – producing multidrug resistant pathogens, for which there are limited or no treatment options. Dr. F. Javier Cobo



# Main Networks, Platforms, Alliances and Consortia

## ISCIII networks and platforms

### CIBER (In-Network Biomedical Research Consortium)

IRYCIS participates in 11 of 13 CIBERs and leads 17 CIBER groups

#### *ciber* | DEM

CIBER Diabetes and Associated Metabolic Diseases

Dr. Héctor F. Escobar

#### *ciber* | ER

CIBER Rare Diseases

Dr. Miguel Ángel Moreno

#### *ciber* | SAM

CIBER Mental Health

Dra. Ángela Ibáñez

#### *ciber* | CV

CIBER Cardiovascular Diseases

Dr. José Luis Zamorano

#### *ciber* | ONC

CIBER Cancer

Dr. Alfredo Carrato  
Dr. Jose Palacios

#### *ciber* | EHD

CIBER Liver and Gastrointestinal Diseases

Dr. Agustín Albillos  
Dr. Melchor Álvarez de Mon

#### *ciber* | ESP

CIBER Epidemiology and Public Health

Dr. Juan Carlos Galán  
Dr. Javier Zamora

#### *ciber* | NED

CIBER Neurodegenerative Diseases

Dr. Manuel Guzmán  
Dr. Javier Fernández Ruiz

#### *ciber* | BBN

CIBER Bioengineering, Biomaterials and Nanomedicine

Dr. Juan Manuel Bellón

#### *ciber* | ES

CIBER Respiratory Diseases

Dr. David Jiménez

#### *ciber* | INFEC

CIBER Infectious Diseases

Dr. Rafael Cantón,  
Dr. Santiago Moreno,  
Dr. José A. Pérez Molina

## Network of Cooperative Research Aimed at Health Results (RICORS)

6 IRYCIS groups also lead groups in the following networks

#### RICORS-ICTUS

RICORS-STROKE  
(Cerebral vascular diseases)

Dr. Alberto Alcázar



RICORS2040  
(KIDNEY DISEASE)

Dra. M<sup>a</sup> Laura García Bermejo  
Dr. Diego Rodríguez Puyol  
Dr. Juan José Vaquero



RICORS-Inflammatory Diseases

Dra. Luisa María Villar  
Dr. Francisco Muñoz Negrete

## Platforms

IRYCIS is part of the following platforms for research support in health sciences and technologies



Platform of Clinical Research and Clinical Trials Units

Dra. M<sup>a</sup> Ángeles Gálvez



Biobank and Biomodels Platform

Dra. Ana María Torres



Platform of Medical and Healthcare Technology Innovation

Dr. Miguel Ángel Moreno  
D. Diego Velasco



Bioinformatics Platform (INB- TransBioNet)

Dr. Val Fernández Lanza

# Main Networks, Platforms, Alliances and Consortia

# 18

## Biomedical Consortia of the Community of Madrid

IRYCIS leads 5 groups in the following active consortia of the R&D Activities Programme of the Community of Madrid

**PRECICOLON-CM:** Towards precision medicine in colon cancer: biomarkers, tumour microenvironment and microbiota

Dr Rosa del Campo



**MINA-CM.-** Madrid Innovative Neurotech Alliance

Dr Alberto Alcázar



**AGES 3-CM.** Environment and Genes in Schizophrenia

Dr Ángela Ibáñez



**ITIRONET-CM.** Study of cell heterogeneity and the immunological environment in thyroid diseases: cancer and autoimmune disease

Dr Pablo Valderrábano



**CIFRA\_COR-CM.** Consortium for the study of kidney failure and its impact on cardiovascular disease

Dr Laura García Bermejo

## IRYCIS holds positions of responsibility in the following areas

**ítemas isciiii**

Plataforma de dinamización e innovación de las capacidades industriales del Sistema Nacional de Salud

**Platform of Medical and Healthcare Technology Innovation**

The Director of the innovation Unit, Diego Velasco, is head of the Territorial Commission (Centre Zone)

**eatris**

**European infrastructure for translational medicine**

Dr M<sup>a</sup> Laura García Bermejo.  
National Scientific Director

**Federación de Asociaciones Científico Médicas de España (FACME)**

Dr Pilar Garrido  
Board of Directors



**European Society of Craniofacial Surgery**

Dr Julio Acero - Chair



**EUCAST**  
European Society of Clinical Microbiologists

**European Committee on Antimicrobial Susceptibility Testing**

Dr Rafael Cantón. Clinical Data Coordinator - Steering Committee (Clinical Data Coordinator since 2016)



**Sociedad Española de Neurocirugía**

Dr Luis Ley  
Second Vice-Chair



**Academia Española de Dermatología y Venereología**

Dr Pedro Jaén – Honorary Chair  
Dr Sergio Vañó – General Secretary



**Cooperative Group of the Sociedad Española de Hematología**

Dr Valentín García - Chair



**Pancreatic Cancer Europe**

Dr Alfredo Carrato - Chair



**Sociedad Española de Glaucoma**

Dr Francisco J Muñoz Negrete Chair

# Main Networks, Platforms, Alliances and Consortia

## Other national networks and alliances

The research staff of IRYCIS also lead groups and/or actively participate in:



# Main Networks, Platforms, Alliances and Consortia

## International





# Training

## Global indicators

Visitors hosted by IRYCIS groups

**52** 

Attendees

**3.420** 

Training activities

**81** 

Hours

**1.056** 

## Training Committee

The IRYCIS Training Committee's mission is to ensure supplementary research training for all of the Institute's staff, implementing and updating the training programmes, seminars and other activities of scientific dissemination

### Courses

Meetings held to develop, coordinate and evaluate its activity

**4** 

Courses taught and accredited by the Community of Madrid

**21** 

Hours of teaching imparted

**255** 

Places offered

**520** 

Assistants

**377** 

Average attendance

**76%** 



# Training

## List of courses

Literature searches in databases.  
PUBMED  
Coordination: Noelia Álvarez

Literature reference management  
workshop. ZOTERO  
Coordination: Noelia Álvarez

Standardised Curriculum Vitae  
(SCV)  
Coordination: Noelia Álvarez

GdT-MODALT-EERR: Course on  
functional trials of alternative mo-  
dels to mice in biomedical research  
Coordination:  
Miguel A. Moreno and Matías Morín

Reference management workshop.  
MENDELEY  
Coordination: Noelia Álvarez

Training on Google tools applied to  
research  
Coordination: Marien Castillo

Use of REDCap for managing elec-  
tronic data in biomedical projects  
Coordination:  
Jorge Lázaro Bailón

Translational Research Techniques  
II: Animal models in biomedical  
research  
Coordination:  
Elena Martín Palma y Elisa Conde

Scientific writing techniques in  
English  
Coordination:  
Juan Carlos Murciano

Clinical Research: Various types of  
studies, methodologies and require-  
ments to implement them  
Coordination: M<sup>a</sup> Ángeles Gálvez

R in Biomedicine: Practical intro-  
ductory course  
Coordination:  
Val Fernández Lanza

Scientific presentation techniques  
Coordination:  
Juan Carlos Murciano

The art of speaking in science  
Coordination:  
Juan Carlos Murciano

Training Course in Good Clinical  
Practices. ICH E6 (R2) and GCP –  
Clinical research of healthcare pro-  
ducts for humans (ISO 14155:2020)  
Coordination: M<sup>a</sup> Ángeles Gálvez

Introduction to Basic Statistics I  
Coordination:  
Borja M. Fernández Félix

Vector design with Inkscape: How  
to improve your figures for scientific  
publications  
Coordination:  
Jerónimo Rodríguez Beltrán

Translational Research Techniques  
III: Applications in clinical research  
Coordination:  
Elena Martín Palma y Elisa Conde

Flexible leaders  
Coordination:  
Alicia Mansilla Aparicio

Introduction to Basic Statistics II  
Coordination:  
Borja M. Fernández Félix

Bioinformatic analysis of massive  
sequencing data applied to genetic  
diagnosis  
Coordination:  
Miguel A. Moreno y Matías Morín

Linear regression models and logis-  
tics with STATA  
Coordination:  
Borja M. Fernández Félix

# Training

## Seminars

Research seminars  
taught

31



Hours

31



Attendees (average of 42 at-  
tendees per seminar)

1.302



Seminars taught by Researchers in Training  
(RIT) of IRYCIS

23%



## Courses and general scientific events

Courses/events (21 accredited  
by the Community of Madrid)

29



Hours

770



Enrolled individuals

1.741



## Teaching Plan for Researchers in Training (TPRIT)

TPRIT lasts 4 years and is divided into a basic level (first and second year) and an advanced level (third and fourth year). TPRIT establishes rotations, courses and other activities to be performed by the RIT during each of the 4 years of predoctoral training and 2 years (advanced level exclusively) in the case of postdoctoral training. Each RIT has a tutor throughout their training period. The rotations, courses and activities performed by the RIT are assessed annually.

Number of RITs throughout 2023  
(one in the basic level category)

13



Ten percent are covered by competitive predoctoral  
contracts (Río Hortega, FPU & FPI programmes), the rest  
are contracted through HR projects or research grants

10%



The scientific-technological services provided by the Central Units for Research Support of IRYCIS can be viewed at the following link: <https://www.irykis.org/es/servicios/>

**Animal Facility and Experimental surgery**

**Biobank and Biomodels**

**Clinical Biostatistics**

**Lipidomic and Proteomic Characterisation**

**Clinical Research and Clinical Trials Unit & Early Phase Clinical Trials Unit**

**Translational Genomics (NGS) and Bioinformatics**

**Biomarkers and Therapeutic Targets**

**Aptamers**

**Data Science**

**Microscopy, Histology and Comparative Pathology**

**Clinical Studies and Phases II-IV Trials**

**Microarrays**

**Precision Immunological Markers**

**Chromatographic Services and CNS Markers**

**Photobiology and Bioelectromagnetism**



# Animal facility and Experimental Surgery

20



## Coordinator

Federico Soria Gálvez

## Staff

2 veterinarian specialists in laboratory animals

1 laboratory technician

3 caretakers

## Contact

91 336 80 74

federico.soria@salud.madrid.org



## HIGHLIGHTS

- Authorisation for the handling of genetically modified organisms
- In the process of implementing the quality system and AENOR regulations



## SERVICES

- Rat offspring
- Animal maintenance (murine, rabbit or pig)
- Surgical procedures
- Procedures (technical advice; diet control; etc.)
- *Ex vivo* simulators



## EQUIPMENT

- Large animals area: 3 independent and multipurpose laboratories.
- Rodent area: quarantine rooms and rooms for external animals, 2 mouse laboratories, 2 rat laboratories, room with auto-ventilated racks for SPF (specific-pathogen-free) animals, etc.
- Two experimental operating rooms for large animals.
- Pre-operative area for performing preanaesthesia and preparation of the animals.
- Operating room for rodents, with 4 surgical microscopes.
- 2 autoclaves.



## Coordinator

Ana María Torres Redondo

## Staff

Sonia Camaño Páez  
Bárbara Luna Sánchez  
Bruno Sainz  
Laura Ruiz Cañas  
Julie Earl

## Contact

biobanco@salud.madrid.org  
91 336 90 75



## HIGHLIGHTS

- Process control: quality management system according to the UNE-EN ISO 9001:2015 standard. Certified by SGS ICS (No. ES13/14407).
- To have a guarantee of quality, safety and tracking of data and stored biological samples, as well as of the procedures associated with the operation of the Biobank, through good practices and ideal methodologies.
- To comply with the applicable legislation and regulations, provide special care for the rights of source/donor subjects, and obtain informed consent.
- Management of associated samples and data using the VITRO computer application Bio-e-Bank, which has a high level of security in accordance with the Organic Law on Data Protection.
- Registration of the preanalysis conditions of the samples (International Standard PREanalytical Code [SPREC]).
- Warehouse safety: restricted access, continuous temperature recording (MySIRIUS), telephone alarms for power failures and increased freezer temperature, CO2 backups, remote access to the alarm management computer, priority line connected to the power generator, refrigerated room, etc.
- Members of the Biobanks and Biomodels Platform consisting of the Biobank and research staff of the Biomarkers and Personalised Approach for Cancer (BIOPAC) group, the Biomarkers and Therapeutic Targets Group, and the Surgical Research and Experimental Surgery group.



## SERVICES

- Transfer of biobank samples
- Liquid samples: Aliquots of serum/plasma/blood/urine, etc.)
- Organoid biomodels and animal models: establish and expand Patient-Derived Xenografts (PDX)

Belonging to the ISCIII Biobank and Biomodels Platform



## Collection of samples (N=68)

Information can be consulted in the catalogue on collections related to associated disease, number of cases, types of samples, extraction times, processing conditions, inclusion criteria, depositary and state of active/inactive recruitment

### I. KIDNEY DISEASES

Kidney failure in heart surgery with cardiopulmonary bypass* (43 cases)
Acute kidney failure* (31 cases)
Donors with expanded criteria and kidney transplant recipients
Kidney transplant recipients (27 cases)
Chronic and acute kidney disease (70 cases)
Glomerular disease* (88 cases)
Predisposition to acute kidney failure associated with heart surgery* (68 cases)
HIV-associated acute kidney failure (259 cases)
Membranous glomerulonephritis (23 cases)

### II. ONCOLOGIC DISEASES

Tumour bank of tissue samples included in OCT (2,607 cases)
Cancer pretreatment and pre-surgery (615 cases)
Evaluation of familial or hereditary cancer (795 cases and healthy individuals*)
Pre-colonoscopy (early detection of colorectal cancer)* (97 cases)
Colorectal cancer* (22 cases)
Hypophyseal tumours (65 cases)
Pancreatic cancer (familial and sporadic) and high-risk cases* (335 cases)
Pre-haematopoietic stem cell transplantation (299 cases)
Breast cancer (104 cases)
Lung cancer (III) Tumour nodules (475)
Benign nodules (40) and without nodules or control (187)
Renal cell cancer (16 cases)
Gastrointestinal tumours (25 cases)
Breast cancer and associated risk factors (8 cases)
Colon adenocarcinoma (149 cases)
Cancer with immunotherapy (39 cases)
Gynaecological tumours (6 cases)
Cancer of unknown origin (1 case)
Microbiota transplantation in advanced lung cancer treated with immunotherapy (23 cases)
Lung cancer and cohabitating relatives* (15 cases and 14 controls)
Glioblastoma (6 cases)
Sarcoma (6 cases)
Thyroid cancer. Treated (27 cases) and Untreated (2 cases)
Acute Myeloid Leukaemia (2 cases)
Rectal cancer multiplatform. Rectal cancer stages II-III treated with radiation therapy (3 cases)
Advanced non-small-cell lung cancer treated with immunotherapy (18 cases)
Microbiota in faeces and saliva in patients with lung cancer (50 cases)

### III. METABOLIC DISEASES

Metabolic bone diseases* (8 cases)
Type 2 diabetes mellitus (144 cases)
Obesity (I)* (114 cases)
Obesity (II)* (840 cases and 20 controls)
Obesity Follow-up of bariatric surgery patients (Laparoscopic gastric bypass 22 cases and Vertical gastrectomy 10 cases)
Haemochromatosis (2,337 cases)

### IV. CARDIOVASCULAR DISEASES

Pulmonary thromboembolism (560 cases)
Coronary arteriopathy (881 cases)
Suspected acute myocardial infarction (13 cases)
Familial heart disease and cardiomyopathies (335 cases)
Acute myocardial infarction (I) (237 cases)
Acute coronary syndrome in individuals younger than 55 years* (53 cases and 41 controls)
Chronic heart failure (100 cases)
Surgery for isolated tricuspid regurgitation (133 cases and 50 controls)
Isolated tricuspid regurgitation (133 cases and 50 controls)
Mast cell activation in acute coronary syndrome (11 cases)
Heart failure II (7 cases)
Heart failure in very elderly patients (112 cases)

### V. LIVER DISEASES

Chronic liver disease (520 cases)
Vascular liver disease (181 cases)

### VI. NEUROLOGICAL DISEASES

Huntington's disease* (25 cases)
Stroke* (9 cases)
Neurodegenerative* (160 cases)

### VII. DERMATOLOGICAL DISEASES

Frontal fibrosing alopecia and folliculitis decalvans (413 cases)
Psoriasis* (120 cases)
Psoriasis and the Mediterranean diet (4 cases and 6 controls)
Alopecia areata, totalis or universalis* (75 cases)
Atopic dermatitis* (53 cases and 24 controls)
Microbiota study in dermatological diseases (107 cases)

### VIII. MULTIPLE-ORGAN FAILURE

Multiple-organ failure (83 cases)
-----------------------------------

### IX. INFECTIOUS DISEASES

Severe sepsis (53 cases)
COVID-19* (703 cases)

### X. RARE DISEASES

Splenomegaly and thrombocytopenia (9 cases)
Cystic fibrosis* (41 cases)
Fabry disease (16 cases and 16 controls)
Hereditary spastic paraplegia/ataxia* (47 cases)
Hereditary haemorrhagic telangiectasia* (100 cases)
Giant cell arteritis (15 cases and 15 controls)

### XI. SYSTEMIC AND AUTOIMMUNE DISEASES

Systemic and autoimmune diseases (280 cases)
--

### XII. CONTROLS

Blood bank donors* (284 cases)
Non-tumour donors (73 cases)



## Coordinator

Javier Zamora Romero

## Staff

Alfonso Muriel García

## Contact

91 336 81 03



## HIGHLIGHTS

- Conducts approximately 550 consultations annually and teaches courses in “Introduction to Statistics”, “Multivariate Regression Models”, “Survival Analysis” and “Multilevel Regression Models” and coordinates sessions on the critical reading of medical literature.
- Accredited capacity for contributing to other research groups, broad spectrum of co-authorship of their publications and participation in the structures of collaborative research promoted by ISCIII (CIBER and RETICS).
- The Cochrane Associate Centre of Madrid is located in the Clinical Biostatistics Unit of Hospital Universitario Ramón y Cajal. This is the result of a partnership signed in May 2015 between the Iberoamerican Cochrane Centre, IRYCIS and the Francisco de Vitoria University.



## SERVICES

Offers advice on research methodology and biostatistics. Its advising covers the design aspects of studies up to the planning, execution of the analysis and the interpretation of the results.



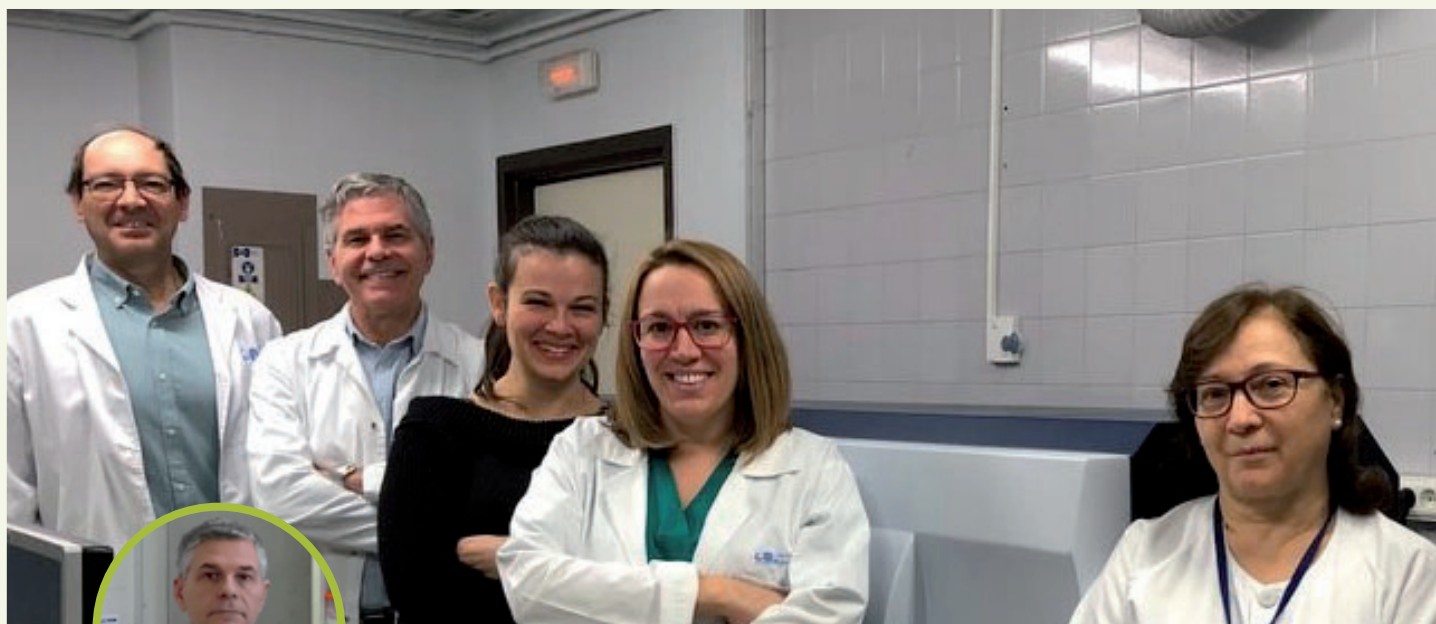
## EQUIPMENT

- The Clinical Biostatistics Unit has software developed by members of the Unit: Meta-DiSc, calculators, macros, PRESTA, etc.
- The Unit also has the following statistical packages: SAS v9.3, SPSS v17, Stata v14, R v2.11, nQuery v7.0.



# Lipidomic and proteomic characterisation

20



## Coordinator

Diego Gómez-Coronado

## Staff

Óscar Pastor Rojo (Lipidómica)

Alberto Alcázar (Proteómica)

Emma Martínez (Proteómica)

Diego Gómez-Coronado (Esteroles y lipoproteínas)

## Contact

diego.gomez@hrc.es

91 336 86 84



## SERVICES

**Proteomics:** analysis by MALDI-TOF mass spectrometry, protein identification, immunoproteomics, peptide quantification, etc.

**Sterols and lipoproteins:** analysis of sterols, cholesterol biosynthesis, etc.

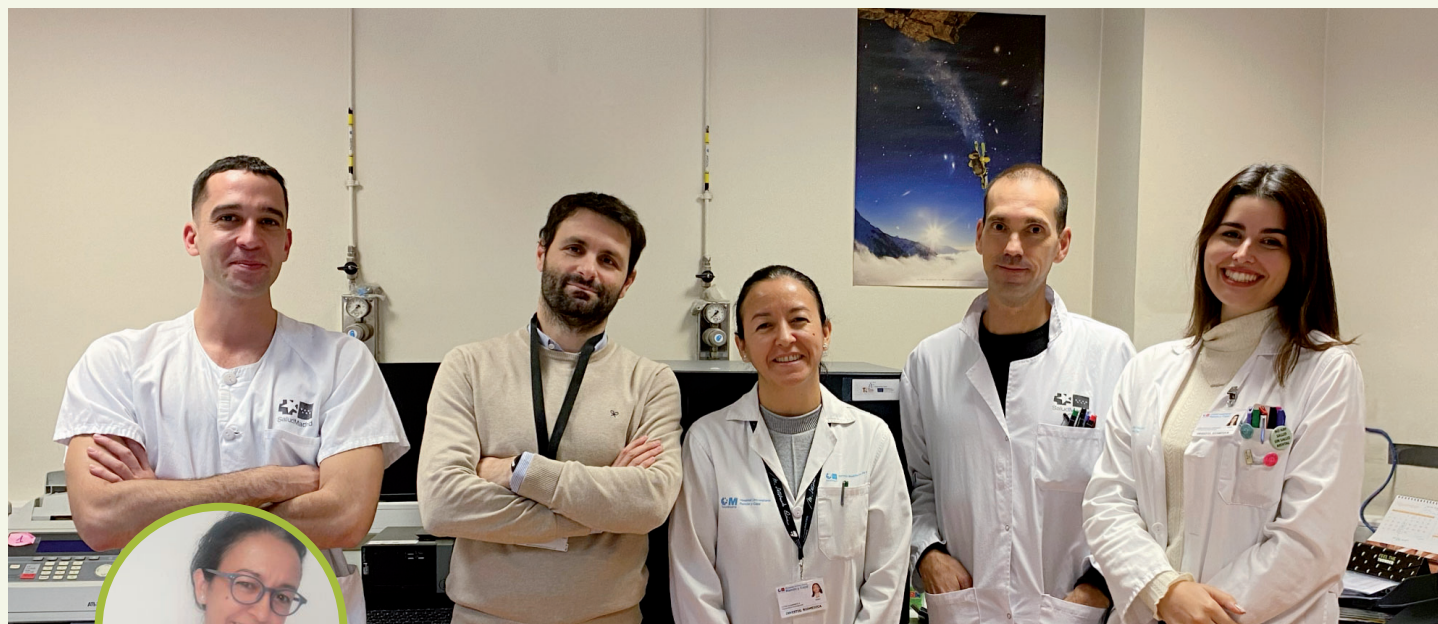
**Lipidomics:** Base extraction of lipids and sphingolipids, standard lipidomics, phospholipids, etc.



## EQUIPMENT

- MALDI-TOF/TOF UltrafleXtreme mass spectrometer.
- One- and two-dimensional electrophoresis equipment; IEF Multiphor II and Processor Plus equipment.
- FPLC biocompatible chromatography equipment and high-resolution HPLC equipment, with automatic refrigerated injector, diode array detector (DAD) module, fluorescence detector, visible, UV and electrochemical detector, fraction collector and thermostat.
- High-resolution quantitative LC-MS system with ESI and APCI sources.
- Gas chromatography and mass spectrometry (GC-MS) system.
- Ultracentrifuges.
- Scintillation Counter Tri-Carb 4910 TR.





## Coordinator

Leticia Olavarrieta Scappini

## Staff

Laura Rodríguez Fernández (TGS. Lab)  
Miguel Aurelio Llorente Artero (TGS. Lab)  
V́ctor Manuel de la Cueva García (TGS. Lab)  
Val Fernández Lanza (Responsable Bioinformática)

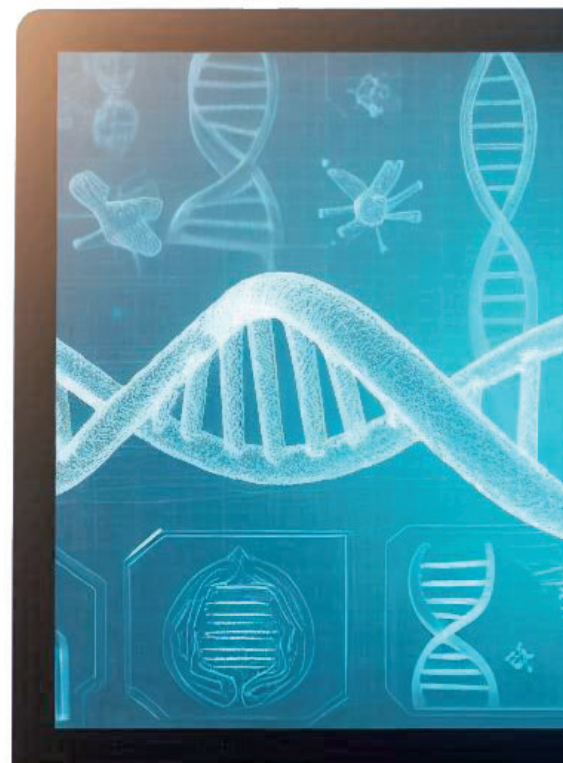
## Contact

uca-gt@irykis.org  
bioinformatica@irykis.org  
91 336 89 59



## HIGHLIGHTS

- Signed collaboration agreements with several technology companies belonging to ASEBIO (Asociación Española de Bioempresas), and with public and private national and international universities.
- Teachers of courses on Translational Research Techniques, Science Omics and Massive Sequencing (NGS) Techniques.
- Quality assurance in the storage and processing of samples, maintaining tracking of the samples, and the following of standard operating protocols (SOPs). Plan for cleaning, maintaining and checking of the laboratory and equipment.
- Continuing education for laboratory staff.
- Main computing cluster with 32 CPU-cores and 526 GB of RAM.
- Storage cabinet of 40 TB and a broadband Internet connection with dedicated fiber optics.
- All IRYCIS PIs may request a free account on the server.
- All accounts for internal IRYCIS staff include the following at no charge: 400 core-hours of computing per month and 1 TB of storage.
- The discounts are not cumulative between different accounts of the same PI.
- All IRYCIS PIs are entitled to a single account with these discounts; any additional account requested will share the discounts of the main account.



# Translational Genomics (NGS) and Bioinformatics



## SERVICES

- DNA extraction (blood, faeces, saliva, dry blood, tissue, formalin-fixed paraffin-embedded tissue, bacterial culture).
- RNA extraction (blood).
- Special DNA and RNA extraction (amniotic fluid, plasma, buccal smear, viral DNA/RNA, etc.).
- Nucleic acid analysis (high-sensitivity DNA, broad-range, genomic DNA, high-sensitivity RNA).
- Nucleic acid quantification (DNA or RNA by UV absorption or by fluorometry).
- Primary, secondary and tertiary bioinformatic analysis.
- Cytogenetics.
- Sanger Sequencing.
- Comparative genomic hybridisation array.
- MLPA.
- Genotyping of microsatellites.
- Generation of libraries for NGS, MiSeq, NextSeq, NextSeq550, NovaSeq 6000.
- Advising.



## EQUIPMENT

### Laboratory 1 - Preamplification Area.

- Chemagic Magnetic Separation Module I (Chemagic MSM I) (Chemagen, PerkinElmer)
- NanoDrop 2000 Spectrophotometer
- Agilent 2200 Bioanalyser TapeStation System
- Qubit 2.0 Fluorometer
- Varioskan LUX of ThermoScientific
- -80 °C and -20 °C freezers
- 4°C refrigerator
- Temperature control and alarm management systems
- TRACKER two-dimensional barcode reader of sample storage tubes
- Web application for recording and tracking the samples and for managing the warehouse space (Bio-e-bank, VITRO)

### Laboratory 2 - Postamplification Area

- 2 PCR System 9700 instruments (Applied Biosystems)
- VeritiPro 96-Well ThermalCycler (Applied Biosystems)
- Illumina MiSeq Sequencer
- Bioanalyzer Agilent 2100
- QuantStudio™ Absolute Q™ Digital PCR System

### Bioinformatics

- HPC Server for NGS analysis.
- GPU Server for AI/ML applications
- Individual Workstations:
- 3 high-capacity storage cabinets



# Clinical Research and Early-Phase Clinical Trials

20



## Staff

### Coordinator

Mª Ángeles Gálvez Múgica

Mónica Aguilar (Coordinadora EC)  
José D. San Andrés (Coord. enfermería)  
Itziar de Pablo (Calidad)  
Isabel López (DUE)

### Contact

91 336 88 25  
mariaangeles.galvez@salud.madrid.org



## HIGHLIGHTS

- Early Phase Clinical Trials Unit. Certified by the Ministry of Health of the Community of Madrid.
- Clinical Research and Clinical Trials Unit (UI-CEC) Belonging to ECRIN (European Clinical Research Infrastructure Network).



## SERVICES

- Stays in the Clinical Trials Unit (healthy volunteers and patients).
- Healthcare consumables.
- Advice on the design and methodology of clinical trials and PASSs.
- Preparation of documentation for clinical trials and PASSs.
- Identification of participating centres for clinical trials and PASSs.
- Presentation to regulatory authorities and RECs of clinical trials and PASSs.
- Project management and monitoring of clinical trials and PASSs.
- Medication, samples and additional tests of the clinical trial.
- Pharmacovigilance of clinical trials and PASSs.



## EQUIPMENT

- 2 hospital rooms (4 beds and 8 recliners)
- Medical consultation with the necessary equipment for a complete examination
- Work office and archive of confidential records
- Multipurpose room
- Laboratory for processing and storing biological samples with refrigerated centrifuge, -20° and -80° freezers, autoclave, etc.
- Safety measures to ensure the proper implementation of the study



## Staff

### Coordinator

Elisa Conde Moreno

Edurne Ramos Muñoz (TGS. Lab)  
Lorena Crespo Toro (TGS. Lab)  
Sandra Villatoro Gómez (TGS. Lab)

### Contact

ucamirnas@gmail.com



## HIGHLIGHTS

- The group has developed a diagnostic and prognostic method for acute kidney failure protected by 2 patent families (P200901825 and P2011320232), both of which have entered the national phases in 8 countries.
- The group are developing the use of miR-127 as a new therapeutic agent in kidney fibrosis, protected by patent EP 16 382 399.0, awarded in the US and Europe.
- The group are developing the use of miR-326 as a new therapeutic agent in cancer, protected by patent EP22383047.2.
- National Projects:
  - \* DTS22/00101 “Multiplatform for precision medicine in rectal cancer (MIRaMut).
  - \* Public-Private Collaborative Project of the Ministry of Science and Innovation, PanCaTEST: “Development and clinical validation of a genetic signature for non-invasive diagnosis of pancreatic cancer and precursor lesions”
- International projects:
  - \* EATRIS-Plus project (H2020-INFRADEV-2019-2,4. €9M) dedicated to identifying and validating biomarkers for clinical use, particularly miRNA.
  - \* Project “REMEDI4ALL: Building a Sustainable European innovation platform to enhance the repurposing of medicines for all.” (HORIZON-HLTH-2021-DISEASE-04), €25M, dedicated to repositioning drugs based on reliable biomarkers.
- Clearly translational departments with experience in kidney disease, kidney preservation, oncology, sepsis, cardiology, etc.



## SERVICES

- RNA extraction and quantification. Extraction of total RNA enriched in small RNAs (tissue, paraffin-embedded tissue, cells, serum, plasma, other biofluids).
- Measured by qRT-PCR (LightCycler 480 SYBR green) and reverse transcription of RNA; RNA Spike-in kit, UniRT; real-time PCR
- miRNA array: preparation of samples, reverse transcription and array
- RNA extraction and quantification. Extraction of total RNA enriched in small RNAs (tissue, paraffin-embedded tissue, cells, serum, plasma, other biofluids)
- miRNA modulation in vitro. Cell culture and transfection
- Location of miRNA by in situ hybridisation
- Immunohistochemistry
- Bioanalyser

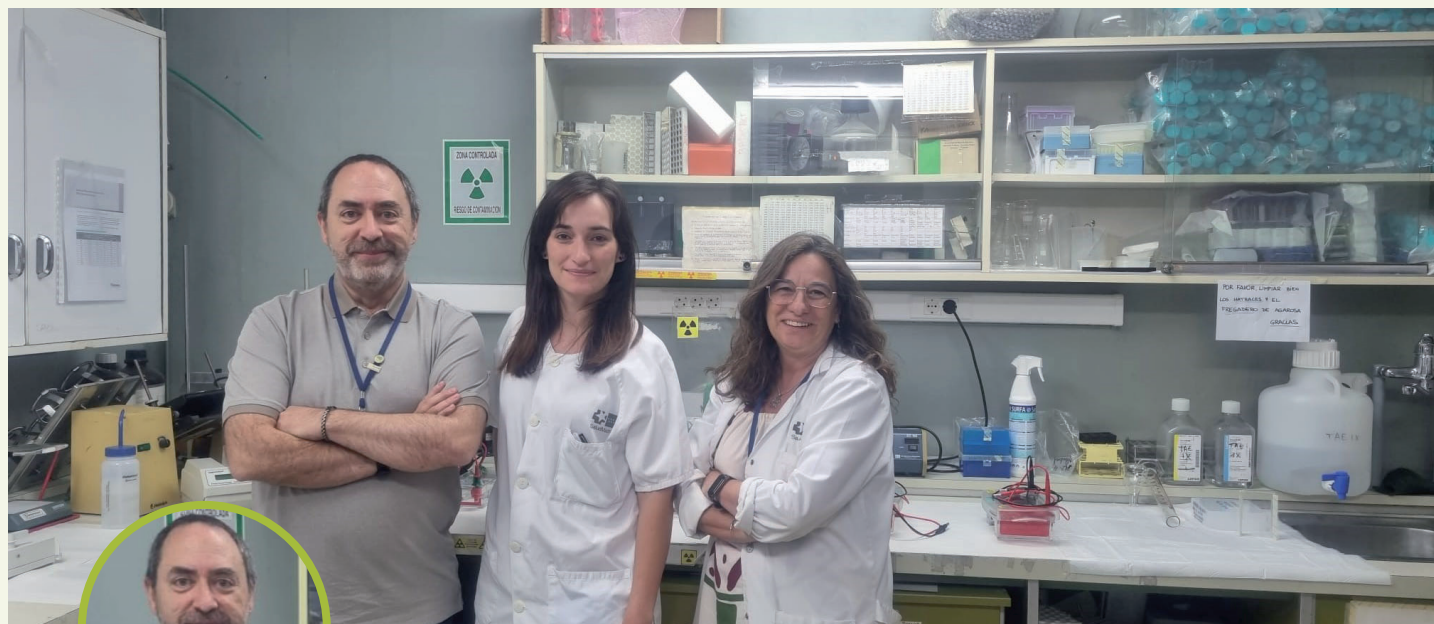


**eatris**

European infrastructure  
for translational medicine

AMEPHARMA





## Coordinator

Victor M. González Muñoz

## Staff

María Elena Martín Palma  
Marta García-Hernández

## Contact

m.elena.martin@hrc.es  
91 336 81 73



## HIGHLIGHTS

### PUBLICATIONS

PMID: 26730812 - DOI: 10.1038/mtna.2015.50  
PMID: 26457419 - DOI: 10.1371/journal.pone.0140048  
PMID: 24205340 - DOI: 10.1371/journal.pone.0078886  
PMID: 23971905 - DOI: 10.1089/nat.2013.0418

### RESEARCH PROJECTS PRIVATE FUNDING

Donation for research project -LTE Laboratories (2006)  
Scientific partnership agreement - Bioapter S.L. (2008-2009)  
Scientific partnership contract (n=3)- nLife(2011-2012)  
Scientific partnership contract Aptus Biotech (n=2) (2015)

### PATENTS

SPECIFIC APTAMERS OF TLR-4 AND USES OF THE SAME P201430955;  
PCT/EP2015/064277.

MAFG AS A POTENTIAL THERAPEUTIC TARGET TO RESTORE  
CHEMOSENSITIVITY IN PLATINUM-RESISTANT CANCER CELLS.  
EP17382610 with PCTEP2018/06815 and extension in USA 16/647,368  
and Europe 18 734 266.2

APTAMERS AGAINST THE HEPATITIS C VIRUS CORE PROTEIN.  
EP21382710.8

APTAMERS AND THEIR USE IN TREATING CANCER. EP 18 382  
888.8 with PCT/EP2019/083547

FPR2 APTAMER RECEPTOR AGONISTS AND THEIR USES.  
P201930524 with PCT/ES2020/070378





## SERVICES

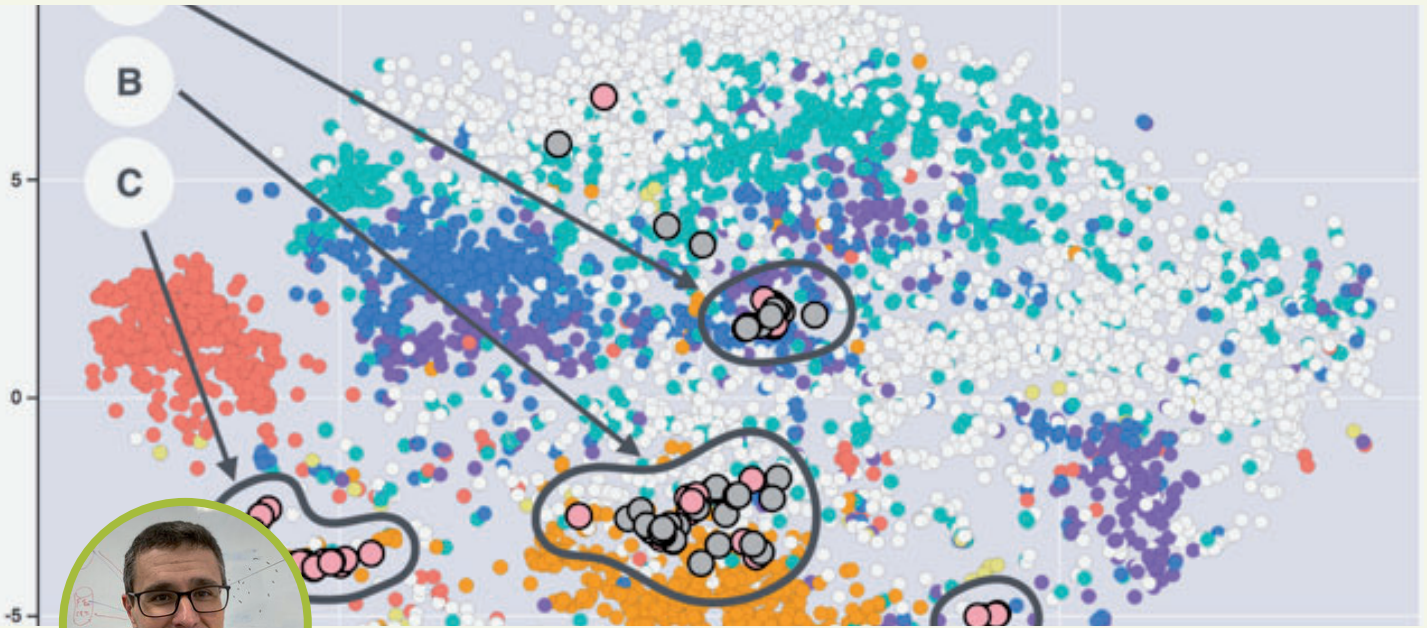
- Selection of aptamer populations for a target.
- Cloning and characterisation of individual aptamers.



## EQUIPMENT

- IQ5 real-time thermocycler (BioRad)
- End-point thermocycler (Techne)
- Experion automated electrophoresis system (BioRad)
- AKTA purification system (GE Healthcare LifeSciences)
- AKTA purification system (GE Healthcare LifeSciences)
- Mni-Bis Pro image acquisition and documentation system (DNR)
- Nanophotometer (IMPLEN)
- Centrifuges, incubators, thermal blocks, horizontal, vertical and cold chamber electrophoresis systems





## Coordinator

Miguel Ángel Sicilia

## Staff

Diego Cárdenas Cuadrado  
Jorge Lázaro Bailón  
Samuel Santos Benito

## Contact

Coordinador Unidad: [msicilia@uah.es](mailto:msicilia@uah.es)  
Servicios REDCap: [redcap@irykis.org](mailto:redcap@irykis.org)



## HIGHLIGHTS

- Experience in research (25 Jul 2023). Google Scholar Data 7176 citations; H-index=43; i10-index=176. <https://scholar.google.es/citations?user=mspPvXQAAAAAJ&hl=es&oi=ao>.
- Scopus: 8266687800.
- ORCID: <https://orcid.org/0000-0003-3067-4180>.
- Professor of Languages and Computer Systems in the Department of Computational Sciences of Universidad de Alcalá.



## EQUIPMENT

- Microsoft Power BI, mETABASE and aPACHE SUPERSET
- ProM/Disco (process mining)
- Python scientific computing stack
- R scientific computing stack
- Other data engineering tools



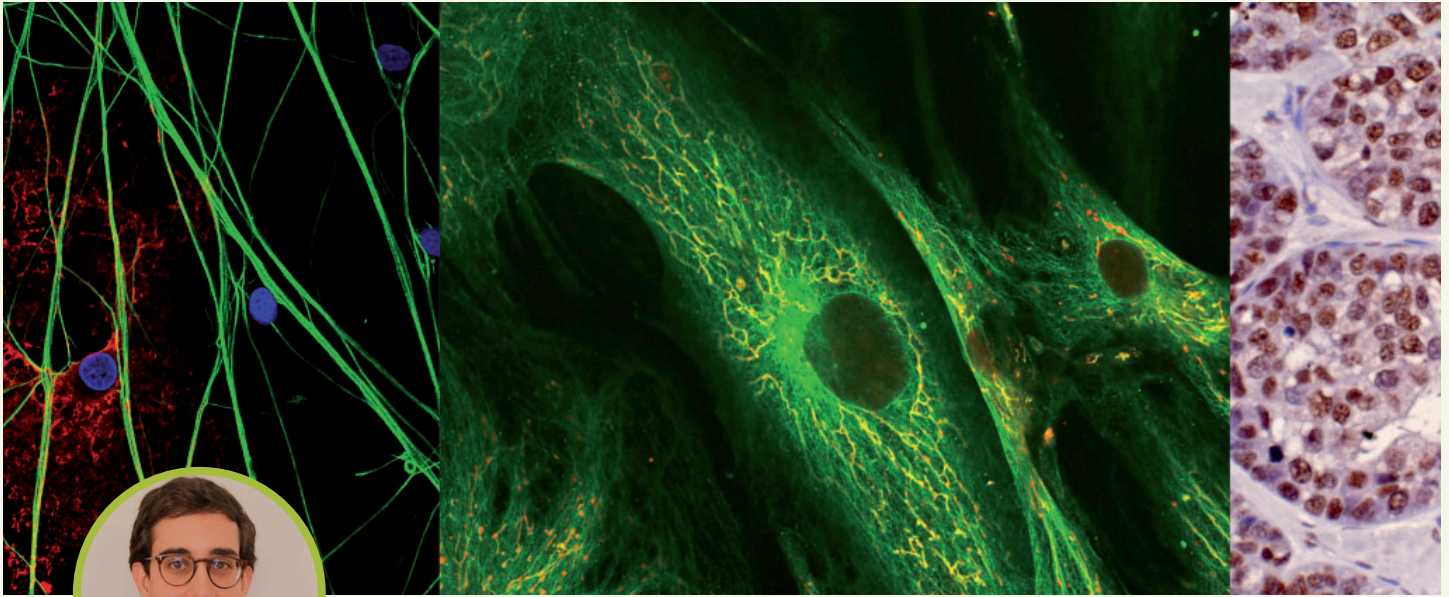
## SERVICES

- Design and creation of ad hoc applications for standardised clinical data collection (REDCap).
- Creation of ad hoc smartphone tools for collecting standardised PREMs (Patient Reported Experience Measures) and PROMs (Patient Reported Outcome Measures) (MyCap).
- Standardisation, harmonisation and upload of already existing databases to the REDCap environment.
- Pre-processing of databases (cleaning, integration, transformation and reduction).
- Exploiting the usefulness of medical data through visualisation techniques and Business Intelligence: creation of interactive scorecards.
- Programming of updates and communications between standardised data collection tools and interactive scorecards.
- Data mining in healthcare repositories aimed at creating predictive systems.
- Process mining: discovering, monitoring and improving actual processes, extracting knowledge from available event logs.
- Preparation of Support Systems for Decision Making based on clinical practice guidelines.
- Teaching, ad-hoc training at different levels.



# Microscopy, Histology and Comparative Pathology

20



## Coordinator

Ignacio Ruz Caracuel

## Staff

Silvia Sacristán (Histología)  
Begoña Cuevas (Microscopía)

## Contact

ignacio.ruz@salud.madrid.org  
uca.histologia.irykis@gmail.com



## HIGHLIGHTS

- Portfolio of services with basic histological techniques (in paraffin-embedded and frozen tissues), immunohistochemistry, immunofluorescence, aptahistochemistry, TUNEL and mRNA morphological detection systems.
- Optical microscope and fluorescence equipment, with confocal microscopy systems and systems for studying samples in vivo using fluorescence.
- Advising in the interpretation of human histological sections and of animal models by pathologists.
- Histological image acquisition and advising on quantification using free-to-use software (Fiji, QuPath)



## SERVICES

- Prepare, redo and cut paraffin blocks
- Preparation and cutting of frozen blocks
- Stainings (HE, Masson)
- Immunofluorescence
- Immunohistochemistry
- Aptahistochemistry
- TUNEL
- RNAscope
- Tissue Microarray
- Confocal microscopy and in vivo confocal microscopy
- Section scanning
- Image analysis and comparative pathology



## EQUIPMENT

- Cryostat CryoStar NX50 for frozen tissue samples
- Microtome Microm model HM 325 for paraffin-embedded tissue samples
- ACD HybEZ II hybridisation oven
- Tissue microarrays
- Extractor hood
- Nikon ECLIPSE Ti confocal microscopes with image acquisition system
- Zeiss Axio Observer 7 inverted fluorescence microscopes
- ECLIPSE Ci fluorescence microscopes equipped with Nikon DS-Ri1 camera
- Motic BA310 optical microscopes equipped with MOTICAMS3 camera
- Image analysis workstation. NIS ELEMENTS software



## Staff

25 trial coordinators  
2 start-up  
2 coordinators of observational studies  
2 data entry technicians  
10 nurses

## Contact

sandra.merino@salud.madrid.org  
91 336 97 09

## Coordinator

Sandra Merino Ávila



## SERVICES

- Start-up or implementation
- Coordination
- Data entry and imaging unit
- Observational studies and in-house trials
- Nursing



## EQUIPMENT

- 2 armchairs in preferential extractions for clinical trials, 6 recliners and 1 bed in the medical day hospital
- Nursing consultation with the necessary equipment for a complete examination (tensiometer, ECG, measuring rod, scale, thermometer)
- Monitoring room (6-8 monitors)
- 2 rooms for trial coordinators
- Archive of confidential records and room for nursing kits
- Laboratory for processing and storing biological samples, with refrigerated centrifuge,  $-20^{\circ}$  and  $-80^{\circ}$  freezers, refrigerator, probes
- Safety measures to ensure the proper implementation of the study



# Other Scientific-Technical Departments 20

## Microarrays

### Coordinator

Javier Martínez-Botas

### Contact

91 336 84 66

### SERVICES

- Preparation of samples (extraction, analysis and quantification)
- Microarrays
- Real-time PCR (LightCycler 480 SYBR Green).

### EQUIPMENT

- Microarray printing robot (SpotArray 72, Perkin Elmer)
- Scanner (ScanArray Express, Perkin Elmer)
- Liquid handling robot (Janus Varispan Perkin Elmer)
- Semiautomatic hybridiser (BioMixer™ II, CapitalBio)
- Real-time thermocycler (LightCycler 480, Roche)
- IT support for microarray analysis
- Three freezers connected to an alarm system by radio control

## Precision Immunological Markers

### Coordinator

Luisa M<sup>a</sup> Villar

### Staff

Mercedes Espiño  
Noelia Villarrubia

### Contact

91 336 87 95

[luisamaria.villar@salud.madrid.org](mailto:luisamaria.villar@salud.madrid.org)

### SERVICES

- Measuring of IgG oligoclonal bands (OCB).
- Measuring of total IgM oligoclonal bands (OCB).
- Quantification of soluble biomarkers in serum/plasma using high-sensitivity ELISA (SIMOA).

### EQUIPMENT

- SIMOA equipment model SR-X (Quanterix)
- 3 Multiphor II isoelectric focusing systems (GE-Health-care).



## Chromatographic Services and CNS Markers

### Coordinator

M<sup>a</sup> José Casarejos

### Staff

M<sup>a</sup> José Asensio Vegas (TGS. lab)

Ana Gómez Soria (TGS. lab)

### Contact

91 336 83 84

m.jose.casarejos@hrc.es

### SERVICES

- Amino acid analysis
- Analysis of catecholamines and metabolites
- Measurement and analysis of amyloid proteins in CSF (ELISA)

### EQUIPMENT

- HPLC systems with fluorometric, UV-VIS and electrochemical detection
- Systems for preparing and processing biological fluid samples (blood, CSF, exudates, urine, etc.)
- Measurement of biomarkers of Alzheimer's disease and other types of dementia in samples of biological fluids and tissues. Amyloid beta protein, Tau protein and phosphorylated Tau protein

## Photobiology and Bioelectromagnetism

### Coordinator

M<sup>a</sup> Luisa Hernández Bule

### Staff

M<sup>a</sup> Antonia Martínez Pascual

Elena Toledano Macías

Rosa Cristina Jara Laguna

Luis Alfonso Pérez González

### Contact

91 336 86 99

mluisa.hernandez@hrc.es

### SERVICES

- Characterisation of in vivo and in vitro biological responses to electric fields and currents, extremely low frequency (ELF) magnetic fields, non-ionising radiation (ELF-RF), radiation in the visible spectrum and ultraviolet radiation.
- Dosimetry of electromagnetic fields in the ELF-RF range. Radiometry of infrared, visible and ultraviolet light. Light transmission quantification trials. Radiometry of infrared, visible and ultraviolet light. Light transmission quantification trials.
- In vivo research studies on RF stimuli: use of an anechoic chamber. Use of systems of exposure to ELF, RF, ultraviolet radiation and visible light for in vitro systems.
- Advising on photoprotection in the work environment and outdoors. Consulting on safety and protection against non-ionising radiation.

### EQUIPMENT

- Systems of exposure for in vitro stimulation with wavelengths in the visible spectrum (blue: 448 nm; green: 530 nm; red: 655 nm) and ultraviolet (UVA: 365 nm and UVB: 312 nm)
- Laboratories equipped for exposure and assessment of the cellular and molecular response to radiation in the range between visible and UV light
- Laboratories equipped for evaluating the cellular and molecular response to exposure to radiation in the ELF-RF range
- Radiometers for wavelengths in the infrared, visible light and ultraviolet (between 260 nm and 1100 nm)

# Priority areas of IRYCIS

IRYCIS has 6 priority research areas, each coordinated by 2 directors, with the fundamental mission of...

- Ensuring the achievement of objectives marked for their entire area.
- Ensuring communication and collaboration between the various constituent research groups.
- Tutoring groups included in the established, emerging or associated clinical research staff levels to achieve their progressive integration in the consolidated group level.

## AREA 1

### NEUROSCIENCES, SENSORY ORGANS AND MENTAL HEALTH

#### HEADS



Dr Alicia Mansilla Aparicio  
Researcher Ramón y Cajal  
UAH-IRYCIS



Dr Luisa María Villar Guimerans  
Department Head of  
Immunology



## AREA 2

### MICROBIOLOGY, IMMUNOLOGY AND INFECTION

#### HEADS



Dr Rafael Cantón Moreno  
Department Head of  
Microbiology



Dr Sergio Serrano Villar  
Medical specialist of the  
Department of Infectious  
Diseases



## AREA 3

### CANCER

#### HEADS



Dr Bruno Sainz Anding  
Senior Research Scientist IIBm  
(CSIC-UAM)



Dr Pilar Garrido López  
Department Head of Medical  
Oncology



# Priority areas of IRYCIS

The IRYCIS areas consist of 44 research groups; 35 consolidated groups, 6 established groups and 3 accessing groups.

## AREA 4

### TOOLS FOR ADVANCED MEDICINE

#### HEADS



Dr Elena Martín Palma  
Tenured Investigator and Head  
of the Aptamers Unit



Dr Gemma Pascual González  
Associate professor at  
Universidad de Alcalá



## AREA 5

### CHRONIC DISEASES AND RESEARCH IN SURGERY

#### HEADS



Dr Rocío Hinojar Baydes  
Medical Specialist of the  
Department of Cardiology



Dr José Ignacio Botella  
Carretero  
Section Head. Department of  
Endocrinology and Nutrition



## AREA 6

### EPIDEMIOLOGY, PUBLIC HEALTH AND HEALTH CARE

#### HEAD



Dr Javier Zamora Romero  
Department Head of  
Biostatistics



### Research Groups

**Multiple Sclerosis**

**Neurodegenerative Diseases: Pathogenic Mechanisms**

**Genetics and Sensorineural Pathophysiology**

**Neurodegenerative Diseases: Development of Therapies**

**Psychiatric Diseases**

**Neuroproteins-Stroke**

**Ophthalmology**

**Experimental Dermatology and Skin Biology**

**Visual Neurophysiology**



# Area 1

## Neurosciences, Sensory Organs and Mental Health

# 21

### Funding and scientific output in the past 5 years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€12,7M 

R&D PROJECTS  
AND INITIATIVES

350 

PUBLICATIONS

1.119 

PUBLICATIONS in  
Q1 & Q2

68%

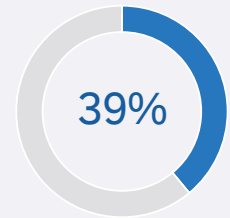
PUBLICATIONS  
headed by IRYCIS members

55%

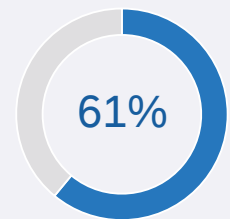
THESIS  
supervised doctoral theses read

56

GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

**Monreal E, Fernández JI, García MI, Sainz de la Maza S, Llufríu S, Álvarez R, Casanova B, Comabella M, Ramió L, Martínez JE, Brieva L, Saiz A, Eichau S, Cabrera JM, Villarrubia N, Espiño M, Pérez F, Montalbán X, Tintoré M, Quiroga A, Domínguez MI, Rodríguez F, Chico JL, Lourido D, Álvarez JC, Masjuan J, Costa L, Villar LM.** Association of Serum Neurofilament Light Chain Levels at Disease Onset With Disability Worsening in Patients With a First Demyelinating Multiple Sclerosis Event Not Treated With High-Efficacy Drugs. *JAMA Neurol.* 2023;80(4): 397 - 403. DOI:10.1001/jamaneurol.2023.0010. PMID: 36848127.

**Maroto IB, Costas C, Berthoux C, Moreno E, Ruiz A, Montero C, Macías A, Martín R, García N, Sánchez J, Marsicano G, Bellocchio L, Canela EI, Casadó V, Galve I, Núñez Á, Fernández de Sevilla D, Rodríguez I, Castillo PE, Guzmán M.** Control of a hippocampal recurrent excitatory circuit by cannabinoid receptor-interacting protein Gap43. *Nat Commun.* 2023;14(1): 2303 - 2303. DOI:10.1038/s41467-023-38026-2. PMID: 37085487.

**Fernandez-Nieto D, Jimenez-Cauhe J, de Perosanz-Lobo D, Muñoz Moreno-Arrones O, Bea-Ardebol S.** Maintained skin distension with a towel clamp for direct closure defects. *J Am Acad Dermatol.* 2023;88(4): e167-e168. DOI:10.1016/j.jaad.2020.12.090. PMID: 33493576.

**Santos I, Rodríguez C, Villegas P, Piscitelli F, Lauritano A, Shen CJ, Di V, Fernández J, de Lago E.** Preclinical investigation in FAAH inhibition as a neuroprotective therapy for frontotemporal dementia using TDP-43 transgenic male mice. *J. Neuroinflamm.* 2023;20(1): 108 - 108. DOI:10.1186/s12974-023-02792-z. PMID: 37149645.

**Sainz de la Maza S, Walo PE, Rodríguez M, Monreal E, Rodero A, Chico JL, Pariente R, Rodríguez F, Ballester R, Villarrubia N, Romero B, Masjuan J, Costa L, Villar LM.** Short- and Long-Term Humoral and Cellular Immune Responses to SARS-CoV-2 Vaccination in Patients with Multiple Sclerosis Treated with Disease-Modifying Therapies. *Vaccines (Basel).* 2023;11(4): 786. DOI:10.3390/vaccines11040786. PMID: 37112698.



### Multiple Sclerosis Group



#### GROUP COMPOSITION

##### Head

Luisa María Villar Guimerans  
luisamaria.villar@salud.madrid.org  
91 336 80 29

##### Principal Investigators

Luisa María Villar Guimerans  
Eulalia Rodríguez Martín

##### Contributing Staff

Alexander Rodero Romero  
Enric Monreal Laguillo  
Ernesto Roldán Santiago  
Fernando Rodríguez Jorge  
José Ignacio Fernández Velasco  
José Luis Veiga González  
Juan Luis Chico García

Lucienne Costa-Frossard França  
Mercedes Espiño Martínez  
Noelia Villarrubia Migallón  
Paula Batres Faba  
Raquel Sainz Amo  
Roberto Pariente Rodríguez  
Rubén Ballester González  
Susana Sainz de la Maza Cantero



#### LOCATION

Hospital Universitario Ramón y Cajal  
Laboratory:  
Immunology department, Floor -1 Left.  
Clinical Unit:  
Neurology department, Floor -2 Centre

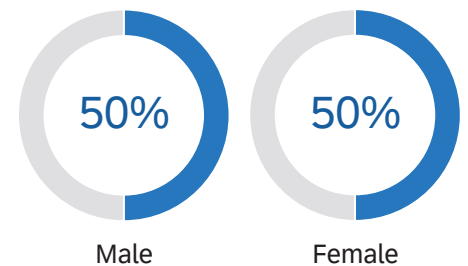


#### KEY WORDS

multiple sclerosis (MS), biomarkers,  
immunological mechanisms, B cells,  
antibodies.



#### GENDER DISTRIBUTION



### Grupo Esclerosis Múltiple

#### NETWORKS AND ALLIANCES

- REEM-Red Española de Esclerosis Múltiple (Ministerio de Ciencia e Innovación)
- RICORS-Red de Enfermedades Inflammatorias (ISCIII)
- Bio-MS-European Group of Biomarkers in MS
- European Medicines Agency (EMA)
- Sociedad Española de Neurología (SEN)
- Agencia Española de Medicamentos y Productos sanitarios (AEMPS)
- Asociación Madrileña de Neurología
- Institut d'Investigació Biomèdica de Girona Dr Josep Trueta (IDIBGI)
- Ministry of Health of the Community of Madrid
- Demyelinating Diseases Group of Asociación Madrileña de Neurología (AMN)
- CIBERNED Neuroinflammation Group



#### LINES

- Study of the pathological mechanisms in MS.
- Search for biomarkers that identify the best risk-benefit profile for the various biological therapies in MS.
- Search for biomarkers that identify the risk of progression in MS.
- Immunological mechanisms that are associated with primary progressive forms of MS.
- Association of Epstein-Barr virus antibodies and the clinical and immunological phenotype in MS.
- Study of the response to SARS-CoV-2 vaccines in MS.

#### STRATEGIC OBJECTIVES

- To deepen the study of the pathophysiological mechanisms of MS with the aim of identifying new therapeutic targets for the disease and contribute to the personalised treatment of patients.
- To study the mechanisms associated with the progressive forms of the disease, for which there is currently only one approved treatment.
- To identify immunological factors that predict early on the risk of progression in MS to establish a personalised therapy for this disease.
- To evaluate biomarkers of treatment response and those that identify patients at risk for severe adverse effects.
- To study environmental factors that have a role in the course of the disease, to determine whether changing them could have a beneficial effect for the patients.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project: IMI (3TR)
- 5 competitive national public projects/networks: ISCIII, MICINN
- 9 private projects led
- 31 clinical studies led
- 2 competitive HR agreements PADI and Río Hortega
- 28 publications
- IF: 156.53
- Publications in Q1: 14 (50%)
- Publications in D1: 5 (18%)
- 1 supervised doctoral thesis read
- 2 awards
- Evaluators of national public agencies: 1 PI
- Editorial committee members: 2 PIs
- 1 agreement signed with an international company to finance the measurement of IgM oligoclonal bands to third parties
- 1 new patent in Spain P202390028 based on European validation EP20382988 that protects predictive biomarkers of autoimmunity for treatment with Alemtuzumab in patients with multiple sclerosis.
- 1 new European patent application EP23383037.1 for predictive biomarkers of treatment response with ocrelizumab in patients with multiple sclerosis.
- 1 new registration of intellectual property CC-BY-ND-NC (reference 2306134577905) to protect a monitoring APP for patients with multiple sclerosis.
- 1 panel of biomarkers for the high-sensitivity detection of biomarkers, protected using know-how.
- 1 consensus document and 1 document with recommendations.
- 2 visitors hosted and 1 month of stay:
  - Dansk Multipel Sklerose Center, Dinamarca.
  - Hospital Virgen Macarena, Seville.

### Grupo Esclerosis Múltiple

#### NOTEWORTHY MILESTONES

1. Discovery of the role of the neurofilament light chain in serum in identifying patients with multiple sclerosis at risk of rapidly progressive disability. Identification of the optimal treatments for these patients. Enric Monreal et al. Association of Serum Neurofilament Light Chain Levels at Disease Onset With Disability Worsening in Patients With a First Demyelinating Multiple Sclerosis Event Not Treated With High-Efficacy Drugs. *JAMA Neuro* 2023 Apr 1;80(4):397-403. DOI: 10.1001/jamaneurol.2023.0010. PMID: 36848127.
2. Description of an algorithm that improves the diagnosis of multiple sclerosis using the combination of a screening test with automated techniques (free kappa light-chain quantification) and the implementation of oligoclonal bands in patients with a negative kappa index. This test has a sensitivity and specificity of more than 95%. Enric Monreal et al. Establishing the best combination of the kappa free light chain index and oligoclonal bands for an accurate diagnosis of multiple sclerosis. *Front Immunol.* 2023 Oct 25;14:1288169. DOI: 10.3389/fimmu.2023.1288169. PMID: 37954589.
3. Discovery of lymphocyte populations in blood that identify patients treated with immunosuppressive therapies who can respond to vaccines without needing to discontinue their therapies. Alexander Rodero-Romero et al. Blood CD8+ Naive T-Cells Identify MS Patients with High Probability of Optimal Cellular Response to SARS-CoV-2 Vaccine. *Vaccines (Basel).* 2023 Aug 22;11(9):1399. DOI: 10.3390/vaccines11091399. PMID: 37766078.
4. Heads of WP6 (multiple sclerosis area) within the European project 3TR for identifying biomarkers of treatment response in various autoimmune diseases.
5. Implementation of the “Precision Immunological Markers” service of IRYCIS, creating new agreements with industry with a value greater than 400,000 euros.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	18	64,45	3,58	11	61	0	0
2020	27	110,61	4,10	24	89	3	11
2021	38	315,39	8,30	26	68	10	26
2022	30	151,34	5,04	25	83	1	3
2023	28	156,53	6,52	19	68	5	18
	141	798,31	5,51	105	74	19	13

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases Group: Pathogenic Mechanisms

21



#### GROUP COMPOSITION

##### Head

Manuel Guzmán Pastor  
mguzman@quim.ucm.es  
91 394 46 68

##### Principal Investigators

Manuel Guzmán Pastor  
Ismael Galve Roperh  
Javier Palazuelos Diego

##### Contributing Staff

Alba Hermoso López  
Alicia Álvaro Blázquez  
Aníbal Sánchez de la Torre

Carlos Costas Insua  
Cristina Blázquez Ortiz  
Eva Resel Mariné  
Irene Berenice Maroto Martínez  
Samuel Simón Sánchez  
Sara Ezquerro Herce  
Tania Aguado Sánchez  
Tania Gavaldá Vivés



#### LOCATION

Universidad Complutense de Madrid,  
Faculty of Biological Sciences,  
Department of Biochemistry and  
Molecular Biology  
C/ José Antonio Novais, 12  
28040 Madrid

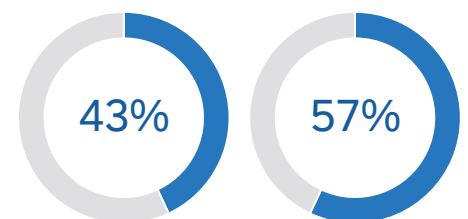


#### KEY WORDS

neurodegeneration, neurogenesis,  
neurorepair, neuropharmacology,  
cannabinoids



#### GENDER DISTRIBUTION



Male

Female

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases Group: Pathogenic Mechanisms

#### NETWORKS AND ALLIANCES

- CIBER of Neurodegenerative Diseases
- IUIIN - Instituto Universitario de Investigación en Neuroquímica



#### INDICATORS OF ACTIVITY 2023

- 6 competitive public projects led: ISCIII/MICINN/CIBERNED
- 1 competitive private project led
- 4 competitive HR agreements
- 7 publications
- IF: 76.20
- Publications in Q1: 6 (86%)
- Publications in D1: 3 (43%)
- Project evaluators: 1 PI
- Editorial committee member: 1 PI
- 1 visitor hosted and 5 months stay:
- Universidad Nacional Autónoma de México (UNAM)
- 11 months stay in foreign institutions:
- EMBL - European Molecular Biology Laboratory.
- 1 European patent maintained. Number EP2733205, on methods of neural stem cell differentiation through CB1 modulation.

#### STRATEGIC OBJECTIVES

The group's general research objective is to study the molecular mechanisms by which cannabinoid receptors act in the brain, as well as the validity of these receptors as therapeutic targets in the fields of neurodegeneration, neurorepair and neuro-oncology. Our study is helping to characterise new mechanisms of action and effects mediated by cannabinoid receptors and suggesting new pathophysiological implications resulting from them.

#### LINES

- Neurogenesis and neurorepair by cannabinoid receptors.
- Neuroprotection by cannabinoid receptors.

#### NOTEWORTHY MILESTONES

1. Maroto IB, Costas-Insua C, Berthoux C, Moreno E, Ruiz-Calvo A, Montero-Fernández C, Macías-Camero A, Martín R, García-Font N, Sánchez-Prieto J, Marsicano G, Bellocchio L, Canela EI, Casadó V, Galve-Roperh I, Núñez Á, Fernández de Sevilla D, Rodríguez-Crespo I, Castillo PE, Guzmán M. Control of a hippocampal recurrent excitatory circuit by cannabinoid receptor-interacting protein Gap43. *Nat Commun.* 2023; 14(1):2303. DOI: 10.1038/s41467-023-38026-2. PMID:37085487
2. Tundidor I, Seijo-Vila M, Blasco-Benito S, Rubert-Hernández M, Adámez S, Andradas C, Manzano S, Álvarez-López I, Sarasqueta C, Villa-Morales M, González-Lois C, Ramírez-Medina E, Almoguera B, Sánchez-López AJ, Bindila L, Hamann S, Arnold N, Röcken C, Heras-Murillo I, Sancho D, Moreno-Bueno G, Caffarel MM, Guzmán M, Sánchez C, Pérez-Gómez E. Identification of fatty acid amide hydrolase as a metastasis suppressor in breast cancer. *Nat Commun.* 2023; 14(1):3130. DOI: 10.1038/s41467-023-38750-9. PMID: 37253733
3. Guzmán, M. (2023) Fatty acids fueling astroglia and beyond. *Nat. Metab.* 5, 1253-1254.
4. Maroto IB, Moreno E, Costas-Insua C, Merino-Gracia J, Díez-Alarcia R, Álvaro-Blázquez A, Canales Á, Canela EI, Casadó V, Urigüen L, Rodríguez-Crespo I, Guzmán M. Selective inhibition of cannabinoid CB1 receptor-evoked signalling by the interacting protein GAP43. *Neuropharmacology.* 2023; 240:109712. DOI: 10.1016/j.neuropharm.2023.109712. PMID:37689260.
5. Costas-Insua C, Guzmán M. Endocannabinoid signaling in glioma. *Glia.* 2023; 71(1):127-138. doi: 10.1002/glia.24173. PMID: 35322459.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	5	28,08	5,62	5	100	1	20
2020	10	128,66	12,87	10	100	7	70
2021	6	36,42	6,07	5	83	2	33
2022	2	13,23	6,61	2	100	1	50
2023	7	76,20	10,89	7	100	3	43
	30	282,59	8,41	29	97	14	47

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Genetics and Sensorineural Pathophysiology Group



#### GROUP COMPOSITION

##### Responsible

Miguel Ángel Moreno Pelayo  
mmorenop@salud.madrid.org

##### Principal Investigators

Miguel Ángel Moreno Pelayo  
Francisco Javier del Castillo Fdez. del Pino  
Ignacio del Castillo Fernández del Pino

##### Contributing Staff

Ana M<sup>a</sup> Valero Rubio  
Concepción Villalón Villarroel  
Eva María García Galloway  
Francisco Javier del Castillo Fdez. del Pino  
Ignacio Del Castillo Fernández Del Pino  
Irene García Vaquero  
Lara Rodríguez Laguna  
Lucía Soletto Esteban

Manuela Villamar López  
María Domínguez Ruiz  
María Lachgar Ruiz  
Matías Morín Rodríguez  
Patricia Fernández San José  
Paula Muñiz Sevilla  
Sergio Fernández Peñalver  
Verónica Barca Tierno  
Yolanda Martín Santo Domingo



##### LOCATION

Hospital Universitario Ramón y Cajal  
Department of Genetics  
Outpatient Clinic Building Floor 0

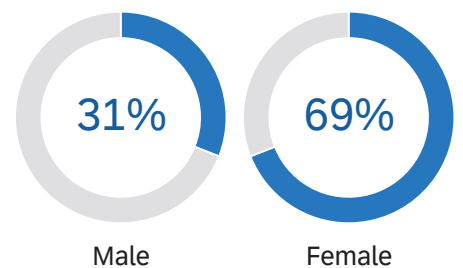


##### KEY WORDS

rare diseases, genetic disease, massive sequencing, comparative genomic hybridisation microarrays, functional trials, transgenic mice, genomics



##### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Genetics and Sensorineural Pathophysiology Group

#### NETWORKS AND ALLIANCES

- CIBER of Rare Diseases
- ITEMAS-Red de Innovación en Tecnologías Médicas y Sanitarias
- EATRIS NETWORK-Expert panel on rare diseases
- CLINGEN Consortium
- Orphanet Spain
- Genomic Systems
- Decibel Therapeutics
- IMPaCT - Infraestructura de Medicina de Precisión asociada a la Ciencia y la Tecnología



#### LINES

- Spinal muscular atrophy
- Basis genetics of tuberous sclerosis
- Genetic-molecular basis of Chiari malformations
- Hereditary basis for glaucoma and for anterior segment disease of the eye
- Hereditary hearing loss (syndromic and nonsyndromic)
- Autoinflammatory syndromes
- Primary immunodeficiencies associated with the TCR-CD3 complex and with DNA repair defects
- microRNA cure: MicroRNA modulation to eliminate latent reservoirs in patients with HIV infection
- Neurofibromatosis type 1 and 2, and neuro-cardio-facio-cutaneous syndromes
- SAPHO Syndrome (chronic recurrent multifocal osteomyelitis)

#### STRATEGIC OBJECTIVES

- To identify new genes associated with hereditary disease in hearing loss, anterior segment disease of the eye, autoinflammatory syndromes and other rare diseases.
- To implement functional trials and generation of cell and murine models for studying the associated mechanisms of pathogenesis.
- To develop, validate and market diagnostic tools based on massive sequencing and microarrays.
- To design clinical guidelines for the group of investigated rare diseases.

#### INDICATORS OF ACTIVITY 2023

- 7 national competitive public projects: ISCIII, CAM
- 1 private project led
- 1 competitive HR agreement
- 9 publications
- IF: 60.90
- Publications in Q1: 6 (67%)
- Publications in D1: 2 (22%)
- 1 supervised doctoral thesis read
- Evaluators of scientific projects in national institutions: 5 researchers
- Members of editorial committees: 2 PIs
- Various panels developed in IRYCIS for genetic diagnosis in use in HURYC
- Launch of study on gene therapy in hearing loss (Decibel Therapeutics)
- 1 document with recommendations (PubMed Id.: 37218840)
- 10 actions with societal impact: conferences, courses and news in the press
- 1 visitor hosted and 3 months stay
  - FISEVI

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Genetics and Sensorineural Pathophysiology Group

#### NOTEWORTHY MILESTONES

1. Clinical trial based on AAV for hereditary hearing loss by OTOF mutations.
2. SERMAS reference for the organisation of the genetics portfolio in the Ministry of Health.
3. Characterisation of ancestral Cas from 2.6 billion years ago for genome editing. Fañanas S, Morín M, Fernández S, Ojeda I, Dessy M, Giurgiu M, Bueren JA, Moreno MA, Segovia JC, Quintana O. Specific correction of pyruvate kinase deficiency-causing point mutations by CRISPR/Cas9 and single-stranded oligodeoxynucleotides. *Front. Genome Edit.* 2023;5: 1104666 - 1104666. DOI:10.3389/fgeed.2023.1104666. PMID: 37188156.
4. Identification of cingulin as a new gene in autosomal dominant inherited hearing loss. Zhu GJ, Huang Y, Zhang L, Yan K, Qiu C, He Y, Liu Q, Zhu C, Morín M, Moreno MA, Zhu MS, Cao X, Zhou H, Qian X, Xu Z, Chen J, Gao X, Wan G. Cingulin regulates hair cell cuticular plate morphology and is required for hearing in human and mouse. *EMBO Mol Med.* 2023;DOI:10.15252/emmm.202317611. PMID: 37691516.
5. Identification of PPCDC as a new gene associated with a congenital metabolism defect due to a disorder in CoA biosynthesis. Bravo I, Morin M, Arribas L, Álvarez M, Pedrón C, Soletto L, Santolaria C, Ramón S, Ugarte M, Rodríguez P, Ariño J, Moreno MA, Pérez B. Pathogenic variants of the coenzyme A biosynthesis-associated enzyme phosphopantothienoylcysteine decarboxylase cause autosomal-recessive dilated cardiomyopathy. *J. Inherit. Metab. Dis.* 2023;46(2): 261 - 272. DOI:10.1002/jimd.12584. PMID: 36564894.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	8	55,56	6,95	8	100	4	50
2020	6	12,89	3,22	3	50	0	0
2021	9	48,57	6,94	7	78	3	33
2022	8	50,04	6,25	7	88	0	0
2023	9	60,90	8,70	7	78	2	22
	40	227,96	6,41	32	79	9	21



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases Group: therapies development



#### GROUP COMPOSITION

##### Head

José Javier Fernández Ruiz  
Department of Biochemistry and Molecular Biology.  
Faculty of Medicine  
Universidad Complutense  
jjfr@med.ucm.es  
Tel. 91 394 14 50

##### Principal Investigators

José Javier Fernández Ruiz  
Eva de Lago Femia  
María Gómez Cañas  
Elisa Navarro González de Mesa  
Onintza Sagredo Ezquioga

##### Contributing Staff

Alberto Jiménez Amor  
Álvaro Sierra Tarazona  
Carmen Aurora Rodríguez Cueto

Claudia Gonzalo Consuegra  
Inés Hernández Fisac  
José Antonio Guimaré Ortiz  
M<sup>a</sup> Concepción García García  
Marta Gómez Almería  
M<sup>a</sup> Sagrario Gómez Ruiz  
M<sup>a</sup> Luz Hernández Gálvez  
Raquel Martín Baquero  
Santiago Rodríguez Carreiro  
Valentina Satta  
Yolanda García Movellán



#### LOCATION

Laboratories 9-12, 4th floor Pavilion IV of the Faculty of Medicine of Universidad Complutense Ciudad Universitaria s/n, 28040-Madrid

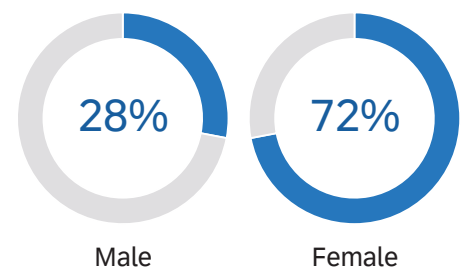


#### KEY WORDS

cannabinoids, endocannabinoid system, cannabinoid receptors, neurodegeneration, neuroprotection, Parkinson's disease, amyotrophic lateral sclerosis, frontotemporal dementia, spinocerebellar ataxias, Dravet syndrome



#### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases Group: therapies development

#### NETWORKS AND ALLIANCES

- CIBER of Neurodegenerative Diseases
- IUIN - Instituto Universitario de Investigación en Neuroquímica
- Campus Moncloa (UCM/UPM)
- Jazz Pharmaceuticals
- Pharmactive Biotech Products
- Ankar Pharma SLU
- VivaCell Biotechnology Spain
- Roche Pharma



ciber | NED



IUIN Instituto Universitario de Investigación Neuroquímica



#### LINES

- Relationship of the endocannabinoid system with the pathogenesis and treatment of various neurodegenerative diseases.
- Identification of this system's targets with neuroprotective potential and the development of new selective compounds for these targets.
- Application to cell and animal models of various neurodegenerative diseases.
- Participation in clinical studies with cannabinoid drugs.

#### STRATEGIC OBJECTIVES

The group's research activity is aimed at studying the changes in the elements of the endocannabinoid system in various neurodegenerative diseases (Parkinson's disease, amyotrophic lateral sclerosis/frontotemporal dementia and spinocerebellar ataxia) and, more recently, in refractory paediatric epilepsy (Dravet syndrome), using experimental models (cell or in vivo) and samples from patients. We seek to identify targets of this system that are candidates for use in neuroprotective treatments and to study the molecular and/or cell mechanisms through those that might exert this type of effect. Based on this, we assess the neuroprotective effect of various types of cannabinoids, preferentially antioxidant cannabinoids, CB2 agonists and cannabinoids with PPAR activity, in experimental models of these diseases. We also work on the design and biological evaluation of new types of cannabinoid compounds with selectivity for those targets with neuroprotective potential. The ultimate objective is to participate in clinical studies resulting from this preclinical experimentation, contributing with the analysis of biochemical markers in samples from patients.

#### INDICATORS OF ACTIVITY 2023

- 8 competitive projects led: ISCIII, MICINN, UCM
- 4 private projects led
- 10 competitive HR agreements
- 5 publications
- IF: 23.51
- Publications in Q1: 3 (60%)
- Publications in D1: 1 (20%)
- 1 supervised doctoral thesis read
- 3 awards from UCM
- Evaluators in national and European institutions: 3 PIs
- Member of editorial committees: 5 PIs and 4 contributors
- 1 patent
- 9 visitors hosted and 50 months of stay
  - Universidad Complutense de Madrid
  - Universidad Autónoma de Madrid
  - Centre for Studies Linkia FP
- + 8 months of stay in foreign institutions:
  - UCL Queen Square Institute of Neurology. Londres, Reino Unido
  - Neurocentre Magendie Bordeaux Neurocampus. Burdeos, Francia
  - VIB Center for Brain & Disease Research. KU Leuven. Leuven, Bélgica

#### NOTEWORTHY MILESTONES

1. **Alonso C, Satta V, Hernández I, Fernández J, Sagredo O.** Disease-modifying effects of cannabidiol,  $\beta$ -caryophyllene and their combination in Syn1-Cre/Scn1aWT/A1783V mice, a preclinical model of Dravet syndrome. *Neuropharmacology*. 2023;237: 109602 - 109602. DOI:10.1016/j.neuropharm.2023.109602. PMID: 37290534.
2. **Santos I, Rodríguez C, Villegas P, Piscitelli F, Lauritano A, Shen CJ, Di V, Fernández J, de Lago E.** Preclinical investigation in FAAH inhibition as a neuroprotective therapy for frontotemporal dementia using TDP-43 transgenic male mice. *J. Neuroinflamm.* 2023;20(1): 108 - 108. DOI:10.1186/s12974-023-02792-z. PMID: 37149645.
3. **Gómez M, Rodríguez C, Satta V, Hernández I, Navarro E, Fernández J.** Endocannabinoid-Binding Receptors as Drug Targets. *Methods Mol Biol.* 2023;2576:67-94. DOI: 10.1007/978-1-0716-2728-0\_6. PMID: 36152178.
4. Start of the research project: “MJFF-022552 Investigating GPR55 as a novel neuroprotective target in experimental Parkinson’s disease”, funded competitively by The Michael J. Fox Foundation (USA) and led by Dr Fernández Ruiz.
5. Patent: WO2021/038219 “Use of cannabinoids in the treatment of dyskinesia associated with Parkinson’s disease” entering the national phase in the US (US 2023/0024312 AI).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	7	31,86	4,55	7	100	2	29
2020	6	29,85	4,98	6	100	1	17
2021	12	74,50	6,21	12	100	3	25
2022	5	27,33	5,47	5	100	0	0
2023	5	23,51	5,88	3	60	1	20
	35	187,05	5,42	33	94	7	20

# Area 1

Neurosciences, Sensory Organs and Mental Health

## Psychiatric Diseases Group



### GROUP COMPOSITION

#### Head

Ángela Ibáñez Cuadrado  
Department head of Psychiatry  
Hospital Universitario Ramón y Cajal

angela.ibanez@salud.madrid.org  
91 336 83 92

#### Principal Investigators

Ángela Ibáñez Cuadrado  
Guillermo Lahera Forteza  
José Manuel Montes Rodríguez

#### Contributing Staff

Agustín Madoz Gurrpide  
Cecilio Álamo González  
Enriqueta Ochoa Mangado  
Raúl Alelu Paz  
Jerónimo Saiz Ruiz (*Asesor Senior*)



#### LOCATION

Hospital Universitario Ramón y Cajal  
Department of Psychiatry, Floor-1 Right  
Universidad de Alcalá: Faculty of  
Medicine

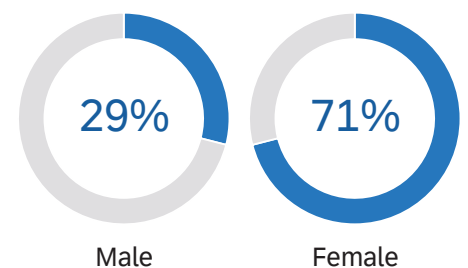


#### KEY WORDS

mental disorders, psychiatry,  
neurobiology, genetics,  
pharmacogenetics, epigenetics,  
psychosis, first psychotic episodes,  
affective disorders, depression, bipolar  
disorder, obsessive-compulsive disorder,  
pathological gambling, gaming disorder,  
addictions



#### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Psychiatric Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER of Mental Health
- AGES-CM3-CM - Environment and Genes in Schizophrenia



#### LINES

- Impulse control disorders and impulsive-compulsive spectrum disorders.
- Epigenetics of mental disorders.
- First psychotic episodes, risk factors in their development and predictors of relapses.
- Affective disorders, bipolar disorder.
- Genetics and pharmacogenetics of mental disorders.

#### STRATEGIC OBJECTIVES

The Psychiatric Diseases Group is a multidisciplinary group composed of researchers from various areas (Psychiatry, Psychology, Pharmacology) whose objective is to develop biological and clinical research programmes and services for aetiopathogenesis and the treatment of mental disorders, allowing for the implementation of new clinical interventions in mental health and the understanding of the mechanisms underlying various mental disorders, thereby facilitating the development of new intervention strategies.

#### INDICATORS OF ACTIVITY 2023

- 8 competitive public projects: EU, ISCIII, MAC, Ministry of Consumer Affairs
- 15 clinical studies
- 22 publications
- IF: 86.21
- Publications in Q1: 9 (45%)
- Publications in D1: 3 (14%)
- 1 supervised doctoral thesis read
- Evaluators of national institution projects: 3 PIs
- Editorial committee members: 5 group members
- 1 action with impact on society: organisation of a meeting

#### NOTEWORTHY MILESTONES

1. Start of the project "Predictors of treatment response in Gaming Disorder: Gender, game modality, clinical and neuropsychological variables", funded by the Ministry of Consumer Affairs in competitive tendering whose PI is Dr Ibáñez Cuadrado.
2. Segura AG, Mané A, Prohens L, Rodríguez N, Mezquida G, Cuesta MJ, Vieta E, Amoretti S, Lobo A, González-Pinto A, Díaz-Caneja CM, Bejarano AR, Jimenez E, Baeza I, Legido T, Saiz-Ruiz J, Bernardo M, Mas S; PEPs Group. Exploration of cannabis use and polygenic risk scores on the psychotic symptom progression of a FEP cohort. *Psychiatry Res.* 2023 Jul;325:115249. DOI: 10.1016/j.psychres.2023.115249. PMID: 37178502.
3. Ortega MA, Álvarez-Mon MA, García-Montero C, Fraile-Martínez Ó, Monserrat J, Martínez-Rozas L, Rodríguez-Jiménez R, Álvarez-Mon M, Lahera G. Microbiota-gut-brain axis mechanisms in the complex network of bipolar disorders: potential clinical implications and translational opportunities. *Mol Psychiatry.* 2023 Jul;28(7):2645-2673. DOI: 10.1038/s41380-023-01964-w. PMID: 36707651.
4. Start of the research project of the National R&D Plan in Health "Long-term outcomes, treatment response and relapses of compulsive disorders: neuroinflammatory, neuropsychological and neuroimaging biomarkers" (PI22/01183) led by Dr Ibáñez.
5. Coordination of the "IX Meeting of Researchers in Mental Health, Patients and Relatives: Together, We Build Mental Health", conducted to promote debate and interaction among patients, families and practitioners so that ideas can arise that could change the healthcare modalities and increase citizen participation in the decision-making process.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	20	65,48	3,27	16	80	2	10
2020	16	57,60	3,60	15	94	3	19
2021	32	129,55	4,05	26	81	1	3
2022	26	112,04	4,31	18	69	1	4
2023	22	86,21	4,31	13	59	3	14
	116	450,88	3,91	88	76	10	9

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neuroproteins-Stroke Group



#### GROUP COMPOSITION

##### Head

Alberto Alcázar González  
Biochemical Research  
alberto.alcazar@hrc.es

##### Principal Investigators

Alberto Alcázar González  
Jaime Masjuan Vallejo  
Jesús Miguel Hernández Guijo

##### Contributing Staff

Antonio Cruz Culebras  
Alejandro Escobar Peso  
Alicia de Felipe Mimblera  
Emma Martínez Alonso  
Ignacio Regidor Bailly-Bailliere  
Lorena Peracho Benito  
María Consuelo Matute Lozano  
Marcel Roca Sanz

Mercedes Gómez-Calcerrada Iniesta  
Rocío Vera Lechuga  
Sebastián García Madrona



#### LOCATION

Stroke Unit Department of Neurology, 5D  
Neuroproteins and Ischaemia Laboratory,  
-1D Hospital Ramón y Cajal  
Department of Pharmacology Faculty of  
Medicine, UAM

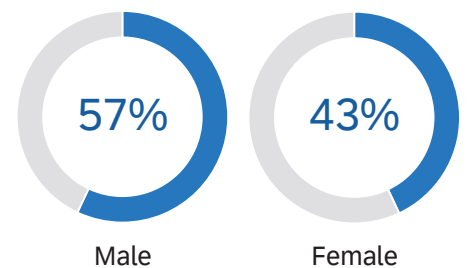


#### KEY WORDS

stroke, neuroprotection, cerebral  
ischemia, experimental models,  
therapeutic targets, reperfusion  
treatments, drug trials, molecular  
mechanisms, neuronal death



#### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neuroproteins-Stroke Group

#### NETWORKS AND ALLIANCES

- GEEC - Cerebrovascular Disorders Study Group
- Madrid Stroke Network Data
- RICORS-Stroke, Network of Cerebrovascular Diseases (ISCIII)
- MINA-CM, Madrid Innovative Neurotech Alliance



**RICORS - ICTUS**



#### STRATEGIC OBJECTIVES

- Advance the understanding of cerebral ischaemic disease.
- Develop pharmacological strategies with therapeutic potential for improving functional recovery after ischaemic stroke.
- Treatment of stroke in the acute phase.

#### LINES

##### Clinical research lines:

- Secondary prevention in stroke
- Reperfusion treatments in cerebral infarction. Use of neuroprotective drugs.
- Cerebrovascular complications of patients undergoing treatment with vitamin K antagonists.
- Recurrent cardioembolic stroke. New indications of atrial appendage closure. Carotid filters.
- Factor XI inhibitors of coagulation in non-cardioembolic stroke.
- Analysis of thrombi extracted with mechanical thrombectomy.

##### Experimental research lines:

- Mechanisms of death and neuroprotection in cerebral ischaemia.
- Identification of proteins involved in damage and recovery after cerebral ischaemia.
- Development of new neuroprotective drugs for cerebral ischaemia.
- Study of non-excitatory amino acid transporters as new molecular targets in cerebral ischaemia damage.

#### INDICATORS OF ACTIVITY 2023

- 6 national competitive public projects: ISCIII, MINECO
- 11 clinical studies led
- 4 competitive HR agreements
- 24 publications
- IF: 141.52
- Publications in Q1: 13 (54%)
- Publications in D1: 6 (25%)
- Evaluators of public agencies: 2 PIs
- 6 active patent families:
  - 1 patent family extended internationally in 11 countries protecting the use of steronitrones in neurodegenerative diseases (PCT/ ES2014/070421).
  - 1 patent awarded (P201131338) to protect, at the national level, quinolylnitrones with the same goal.
  - 1 patent requested to protect new quinolylnitronone compounds PCT/EP2019/077525, extended in the US and EU.
  - 1 new patent for new steronitronone compounds with European priority application EP20382158 and PCT/EP2021/055653, extended in the US and EU.
  - 1 application for a nitronone compound in stroke with European application EP22382680.
  - 1 request for a nitronone compound in deafness with European application EP22382706.4 and PCT/EP2023/070340.

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neuroproteins-Stroke Group

#### NOTEWORTHY MILESTONES

1. Publication of potential drugs for the treatment of ischaemic stroke. Escobar A, Martínez E, Masjuan J, Alcázar A. Development of Pharmacological Strategies with Therapeutic Potential in Ischemic Stroke. *Antioxidants (Basel)*. 2023;12(12). DOI:10.3390/antiox12122102. PMID: 38136221.
2. Publication of a new mechanism of damage in cerebral ischemia. Álvarez I, Muñoz MD, Hernández JM, Solís JM. Identification of Non-excitatory Amino Acids and Transporters Mediating the Irreversible Synaptic Silencing After Hypoxia. *TRANSL STROKE RES*. 2023;DOI:10.1007/s12975-023-01192-y. PMID: 37755645.
3. Participation in a clinical genetic study on the relationship between COVID-19 and stroke. Lluçà-Carol L, Muiño E, Cullèll N, Cárcel-Márquez J, Lledós M, Gallego-Fabrega C, Martín-Campos J, Martí-Fàbregas J, Aguilera-Simón A, Planas AM, DeDiego ML, de Felipe Mimblera A, Masjuan J, García-Madrona S, Segura T, González-Villar E, Serrano-Heras G, Domínguez Mayoral A, Menéndez-Valladares P, Montaner J, Migeotte I, Rahmouni S, Darcis G, Bernardo D, Rojo S, Schulte EC, Protzer U, Fricke L, Winter C, Niemi MEK, Cordioli M, Delgado P, Fernández-Cadenas I. Genetic Architecture of Ischaemic Strokes after COVID-19 Shows Similarities with Large Vessel Strokes. *Int J Mol Sci*. 2023 Aug 30;24(17):13452. DOI: 10.3390/ijms241713452. PMID: 37686257.
4. Publication on a new functional monitoring system. Martín G, Cabañes L, López JR, Mateo RC, Reyes A, Gandarias C, Regidor I. Usefulness of the H-Reflex for Intraoperative Monitoring of Thoracoabdominal Aneurysms. *J Clin Neurophysiol*. 2023 May 26. DOI: 10.1097/WNP.0000000000001016. PMID: 37255237.
5. European Patent Grant EP3863632A1 “Quinolynitrones for the treatment and prevention of a cerebral stroke or ischaemia” and Patent application PCT no. PCT/EP2023/070340 “Quinolyl-nitrone derivatives for use in the prevention and/or treatment of hearing loss”. Owners: FIBioHRC and CSIC.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	20	153,38	9,59	16	80	4	20
2020	22	68,52	3,61	11	50	4	18
2021	35	178,39	5,2	20	57	7	20
2022	25	426,05	18,52	19	76	6	24
2023	24	141,52	7,06	17	71	6	25
	126	967,86	9,23	83	66	27	21



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Ophthalmology Group



#### GROUP COMPOSITION

##### Head

Francisco Arnalich Montiel  
Section Head. Department of  
Ophthalmology University Hospital Ramon  
y Cajal  
francisco.arnalich@salud.madrid.org  
91 336 81 94

##### Principal Investigators

Francisco Arnalich Montiel  
Francisco José Muñoz Negrete  
Gema Rebolledo Fernández

##### Contributing Staff

Ana Díaz Montealegre  
Ana Rosa Albanea Jiménez  
Ángel López Vázquez  
Beatriz Laín Olías  
Beatriz Puerto Hernández  
Constanza Barrancos Julián  
David Mingo Botín  
Diego Ruiz Casas  
Eduardo García Vicente  
Elena Jarrín Hernández  
Elisabet de Dompablo Ventura  
Inés María Contreras Martín  
Julio José González López

Laia Jaumandreu Urquijo  
Laura Díez Álvarez  
María Moreno López  
Marta Gómez Mariscal  
Marta Suárez de Figueroa Díez  
Martha Stokking Ramírez  
Marco Sales Sanz  
Mercedes Serrador García  
Miguel Francisco Ruiz Guerrero  
Nieves Alonso Formento  
Noelia Oblanca Llamazares  
Pablo de Arriba Palomero  
Paula Hernández Martínez  
Verónica Sánchez Gutiérrez



#### LOCATION

Hospital Universitario Ramón y Cajal  
Ophthalmology Department  
Floor 9 Left

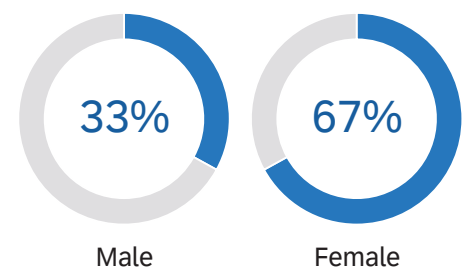


#### KEY WORDS

optical coherence tomography, optic nerve, neuro-ophthalmology, glaucoma, uveitis, keratoconus, Descemet's membrane endothelial keratoplasty, Descemet's stripping automated endothelial keratoplasty, corneal endothelium, Acanthamoeba, keratitis, Fuchs dystrophy, impression cytology, amniotic membrane, autologous serum, stem cells, severe dry eye, optic neuritis, ischaemic optic neuropathy, age-related macular degeneration, Graves' disease, glaucoma surgery, genetics and glaucoma



#### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Ophthalmology Group

#### NETWORKS AND ALLIANCES

- RICORS - Network of Inflammatory Diseases (ISCIII)



#### LINES

- Glaucoma
- Cornea
- Retina

#### STRATEGIC OBJECTIVES

- Clinical epidemiology of ocular inflammation.
- Research on internal retina stimulation in animals with ablation of the external retina.
- Transplantation of amniotic membrane in severe dry eye.
- Stem cell treatment for severe dry eye.
- Corneal endothelial transplantation.
- Acanthamoebic keratitis.
- Keratoconus: diagnosis and treatment.
- Stem cell therapy for treating corneal disease.
- Imaging methods in glaucoma and other optical neuropathies.
- New developments in glaucoma surgery.
- Genetic study in glaucoma and anterior segment dysgeneses.
- Dysthyroid ophthalmopathy.

#### INDICATORS OF ACTIVITY 2023

- 3 competitive public projects led: ISCIII
- 3 private projects led
- 19 clinical studies led
- 23 publications
- IF: 56.71
- Publications in Q1: 5 (22%)
- 3 awards
- Evaluators of national public agencies: 3 PI
- Editorial committee members: 4 researchers
- 1 family of patents with a European priority application (EP22382119.0) and PCT/EP2023/053668
- 1 consensus document and 2 clinical guidelines
- 2 actions with societal impact: conferences
- 4 visitors hosted and 4 months of stay:
  - University Hospital of Helsinki. Finlandia
  - Medical University of Lublin. Polonia
  - University Hospital Center Sestre Milosrdnice. Croacia
  - Ankara University Medical School. Turquía

#### NOTEWORTHY MILESTONES

1. First place in the ranking of the healthcare reputation monitor MRS MERCO 2023 to the best Department of Ophthalmology.
2. Start of the project on artificial intelligence for corneal transplantation. PI22/01252\_Validation of biomarkers of tomography images as predictors of the need for keratoplasty after cataract surgery in Fuchs corneal dystrophy: multicentre study with artificial intelligence-assisted diagnosis. Funded by ISCIII and led by Dr Arnalich.
3. Development and publication of clinical practice guidelines published by the Sociedad Española de Oftalmología for the follow-up of glaucoma and the management of advanced glaucoma.
4. Patent for the 3D corneal construct: priority European application and extension of PCT (EP22382119.0).
5. Participation by Dr Arnalich, as coordinator and member of the database development committee, in the international multicentre study "Fight corneal blindness" in keratoconus with publication: Ferdi AC, Kandel H, Nguyen V, Tan J, Arnalich-Montiel F, Abbondanza M, Watson SL. Five-year corneal cross-linking outcomes: A Save Sight Keratoconus Registry Study. Clin Exp Ophthalmol. 2023 Jan;51(1):9-18. DOI: 10.1111/ceo.14177. PMID: 36240047..

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	34	77,38	2,28	18	53	1	3
2020	42	85,80	2,04	13	31	1	2
2021	41	86,02	2,10	13	32	1	2
2022	25	66,38	2,66	9	36	0	0
2023	23	56,71	2,98	11	48	0	0
	165	372,29	2,41	64	40	3	2

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Experimental Dermatology and Cutaneous Biology Group

21



#### GROUP COMPOSITION

##### Head

Pedro Jaén Olasolo  
Head of the Dermatology Department  
University Hospital Ramon y Cajal  
pedro@pjaen.com  
91 336 82 47

##### Principal Investigators

Pedro Jaén Olasolo  
Álvaro González Cantero  
Ángeles Juarranz de la Fuente  
Sergio Vañó Galván

##### Contributing Staff

Ana Carlota Blanco Abbad-Jaime de Aragón  
Ángela Hermosa Gelbard  
Azahara M<sup>a</sup> Rodríguez Luna  
Belén de Nicolás Ruanes  
Borja Díaz Guimaraens  
Celia Sánchez Rangil  
Daniel Ortega Quijano  
David Saceda Corralo  
Elisa Carrasco Cerro  
Gerald Selda Enríquez  
Gonzalo Segurado Miravalles  
Irma Joyce Días de Almeida  
Jimena Nicolás Morala  
Juan Pablo Boixeda de Miguel

Laura Miguel Gómez  
Lorea Bagazgoitia Sáez de Vicuña  
Luis Ríos Buceta  
M<sup>a</sup> Asunción Ballester Martínez  
M<sup>a</sup> Bibiana Pérez García  
M<sup>a</sup> Elena de las Heras Alonso  
María Gallego Rentero  
Marta Mascaraque Checa  
Mikel Portillo Esnaola  
Montserrat Fernández Guarino  
Natalia Jiménez Gómez  
Óscar Muñoz Moreno-Arrones  
Pablo Fernández González  
Patricia Burgos Blasco  
Sonia Bea Ardebol



##### LOCATION

Hospital Universitario Ramón y Cajal:  
Research laboratories (Floor -3 Right)  
Hospital de Día Dermatológico (Floor 8  
Center)  
Outpatient clinic  
(Floor 2 Outpatient clinics building)

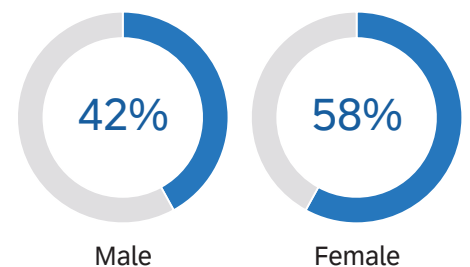


##### KEY WORDS

regenerative medicine, stem cells,  
skin, hair, nonmelanoma skin cancer,  
psoriasis, burns, wounds, chronic  
ulcers, alopecia, cutaneous microbiota,  
dermatological laser, imaging techniques  
in dermatology, photodynamic therapy,  
rare dermatological diseases, melanocyte  
transplantation, trichology, alopecia,  
androgenetic alopecia, alopecia areata,  
frontal fibrosing alopecia, oral minoxidil



##### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Experimental Dermatology and Cutaneous Biology Group

#### NETWORKS AND ALLIANCES

- International platform SWORD
- SkinModel Platform for the study of skin homeostasis and disease
- Skin in network
- BIOBARADERM platform
- Collaboration with the Research Group of John McGrath – King's College, London (United Kingdom)
- Collaboration with Vrije Universiteit Brussel
- Collaboration with the Regional Dermatology Training Center (Tanzania)
- Laboratory of vascular pathophysiology (HNP)
- National Institute of Health (NIH) (Dr Nehal Mehta)
- MEDSTAR HEALTH (USA)
- University of Oxford (United Kingdom)
- Clínica Atria
- Universidad Francisco de Vitoria



#### LINES

##### Regenerative dermatology and stem cells:

- Characterisation of new regulatory mechanisms of skin stem cells with potential applications in regenerative medicine and for treating various skin conditions.
- Characterisation of molecular factors involved in diseases associated with skin stem cells (alopecia and others).

##### Therapeutic targets in nonmelanoma skin cancer:

- Development of diagnostic methods and identification of therapeutic targets for nonmelanoma skin cancer.

##### Clinical dermatology:

- Identification of new molecules, targets, biomarkers, prognostic factors, comorbidity and response to treatment in inflammatory skin diseases.
- Implementation of non-invasive diagnostic imaging techniques in skin diseases.
- Development of treatments for advanced nonmelanoma skin cancer and strategies for its prevention, including high-risk patients.
- Genetic characterisation and trichoscopy of alopecia.
- Characterisation and treatment of severe reactions to drugs and chemotherapy.
- Research into photochemical, photobiological, photomechanical and photobiomodulation when applying light sources in the treatment of skin diseases and malformations.
- Characterisation of the microbiota associated with skin diseases.
- Development of melanocyte transplantation.
- Development of a multidisciplinary unit for patients with complex skin conditions.

##### Trichology:

- New therapies for androgenetic alopecia (oral minoxidil)
- JAK inhibitors for alopecia areata.
- Genetic characterisation of patients with frontal fibrosing alopecia
- Analysis of microbiota in patients with alopecia areata and folliculitis decalvans.

#### STRATEGIC OBJECTIVES

- To characterise the growth factors and transcriptional regulators involved in the proliferation and differentiation of skin stem cells and in regulating the hair cycle and in diseases related to the function/dysfunction of these cells.
- To implement new clinical therapies based on skin stem cells to promote skin regeneration: burns and wounds, chronic ulcers, alopecia.
- To develop dermo-epidermal skin equivalents or new-generation artificial skin prototypes. To assess the use at the clinical level, as a model of disease or to assess the response to topical treatments.
- To implement diagnostic methods and therapeutic targets for nonmelanoma skin cancer, especially for premalignant lesions such as actinic keratosis.
- To characterise the efficacy, safety and reduced morbidity and mortality of new compounds and biological drugs for treating psoriasis, atopic dermatitis and generalised vitiligo.
- To develop new technologies in the field of dermatology diagnosis. To incorporate cutaneous ultrasonography, confocal microscopy and optical coherence tomography in the diagnosis and follow-up of various skin diseases and their comorbidities.
- To implement clinical trials with new therapeutic targets and develop prevention strategies for high-risk patients with nonmelanoma skin cancer and patients who have undergone transplantation.
- To describe genes and patterns of trichoscopy associated with the various types of alopecia.
- To characterise the patterns of clinical, histological and immunological expression of patients with severe drug reactions (toxic epidermal necrolysis, DRESS syndrome, Stevens-Johnson).
- To develop and standardise laser and incoherent light sources (low level laser therapy, LEDs) as treatment, and sources of sunlight or in photodynamic therapy in various skin conditions (vascular malformations, ulcers, tissue regeneration, alopecia, acne)
- To create a Biobank of intestinal microbiota from patients with inflammatory skin diseases and tumours.
- Vitiligo treatment unit with transplantation of melanocytes in refractory cases of localised vitiligo.
- Operation in interdepartmental units in complex skin diseases: unit for blisters, lymphomas, apheresis, skin reactions to chemotherapy, rare severe inflammatory diseases.

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Experimental Dermatology and Cutaneous Biology Group

#### INDICATORS OF ACTIVITY 2023

- 6 public projects led: MICINN-MINECO, CAM-UAM, ISCIII, CAM
- 10 private projects led
- 35 clinical studies led
- 48 publications
- IF: 213.56
- Publications in Q1: 27 (56%)
- Publications in D1: 8 (17%)
- 4 supervised doctoral theses read
- 4 awards
- Translation: 2nd Practical Manual of Trichology TricoHRC and a consensus document (PubMed Id.: 37477225)
- 2 actions with societal impact: XI edition of the Trichology Update Course, The Psoriasis revolution event 2023
- Evaluators of national public agencies: 2 researchers
- Editorial committee members: 2 researchers
- 4 months stay in foreign institutions:
  - Showa Pharmaceutical University (Machida, Tokyo, Japan)
- 4 visitors hosted and 20 months of stay:
  - Universidad Politécnica de Madrid (UPM)

#### NOTEWORTHY MILESTONES

1. Dr Sergio Vañó-Galván has been recognised with the honorary award from MERCO and ODS to one of the most respected physicians in Spain.
2. Dr Álvaro González-Cantero received competitive funding from the National Plan grants (AES 2022, ISCIII) for the project “Subclinical atherosclerosis in patients with psoriasis: the search for new molecular biomarkers” Ref. PI22/01847.
3. Awarding of a predoctoral training in health research (PFIS) contract, AES 2023/ISCIII, under the guidance of Dr Pedro Jaen, Dr Álvaro González-Cantero and Dr Óscar Muñoz-Moreno Arrones.
4. Intramural funding of FIBioHRC for the implementation of the project “Immunologic Characterisation of Drug-Induced and Idiopathic Bullous Pemphigoid”. PI: Dr Montserrat Fernández Guarino.
5. The clinical research group is characterised by its consistency and productivity, maintaining a large number of clinical trials in various dermatological diseases and continuing to publish articles in first-quartile journals and in the top ten percent of the specialty, such as two publications in the prestigious Journal of the American Academy of Dermatology (10.1016/j.jaad.2023.02.048 and 10.1016/j.jaad.2020.12.090).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	52	130,32	2,51	20	38	11	21
2020	59	296,17	6,04	42	71	24	41
2021	44	284,95	8,38	29	66	16	36
2022	37	182,59	6,30	20	54	7	19
2023	48	213,56	5,48	37	77	8	17
	240	1107,6	5,74	148	61	66	27

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Visual Neurophysiology Group



#### GROUP COMPOSITION

##### Head

Pedro de la Villa Polo  
Professor at Universidad de Alcalá  
pedro.villa@uah.es  
918854523

##### Principal Investigators

Pedro de la Villa Polo  
Alicia Mansilla Aparicio  
Román Blanco Velasco

##### Contributing Staff

Cecilia Fernández Vaquero  
Consuelo Pérez Rico  
Cristina Alcácer Fernández-Coronado  
Francisco Germain Martínez  
Laura Ramírez Martínez  
Lorena Aguado García  
Mateo Pazo González  
Santiago Milla Navarro

Sara Pérez Suárez  
Sonia Sánchez Yepes  
Víctor Paleo Gonzalez



#### LOCATION

Visual Neurophysiology Lab  
Department of Systems Biology  
Faculty of Medicine  
Universidad de Alcalá

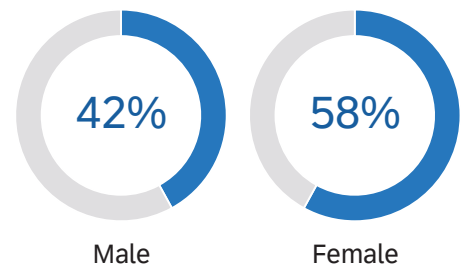


#### KEY WORDS

retina, synapses, calcium sensors,  
electroretinography, multifocal  
electroretinography (MFERG), retinitis  
pigmentosa, experimental models,  
multifocal visual evoked potentials  
(MFVEP).



#### GENDER DISTRIBUTION



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Visual Neurophysiology Group

#### LINES

- Evaluation of the presence of responses to light in blind mice injected with “photoswitches”, using electrophysiological recording techniques and assessment techniques of visual behaviour.
- Preparation and characterisation of PLGA particles loaded with therapeutic agents for their application in retinal degeneration models, with a study of molecular release, injection of PLGA particles and studies of functional efficacy.
- Experimental models of glaucoma and mechanisms of neuroprotection of the retina’s ganglion cell complex.
- Protective role of physical exercise in neurodegenerative diseases.
- Development of synaptic modulators for treating neurodegenerative and neurodevelopmental diseases.

#### STRATEGIC OBJECTIVES

- To develop a therapeutic strategy based on optopharmacology.
- To evaluate the therapeutic effects of pharmacological, neuroprotective and neuromodulator agents included in PLGA particles.
- Development of neuroprotective agents in retinal neurodegeneration.

#### INDICATORS OF ACTIVITY 2023

- 4 national competitive public projects: ISCIII, MINECO/ MICINN
- 1 competitive HR agreement: UPT
- 6 publications
- IF: 41.61
- Publications in Q1: 4 (67%)
- Publications in D1: 3 (50%)
- Evaluators of national public agency projects: 2 PI
- Editorial committee members: 1 PI
- 2 actions with societal impact: lectures

#### NOTEWORTHY MILESTONES

1. Fine tuning of a new animal model for the therapeutic trial of antioxidant and neuroprotective agents. (Espitia-Arias MD, de la Villa P, Paleo-García V, Germain F, Milla-Navarro S. Oxidative Model of Retinal Neurodegeneration Induced by Sodium Iodate: Morphofunctional Assessment of the Visual Pathway. *Antioxidants (Basel)*. 2023 Aug 10;12(8):1594. DOI: 10.3390/antiox12081594. PMID: 37627589).
2. Demonstration of the functional origin of the oscillatory potentials of the electroretinogram (Liao F, Liu H, Milla-Navarro S, Villa P, Germain F. Origin of Retinal Oscillatory Potentials in the Mouse, a Tool to Specifically Locate Retinal Damage. *Int J Mol Sci*. 2023 Feb 4;24(4):3126. DOI: 10.3390/ijms24043126. PMID: 36834538).
3. Demonstration of the importance of calcium sensors in the regulation of neuronal survival processes (Muñoz- Reyes D, McClelland LJ, Arroyo-Urea S, Sánchez-Yepes S, Sabín J, Pérez-Suárez S, Menendez M, Mansilla A, García- Nafría J, Sprang S, Sanchez-Barrena MJ. The neuronal calcium sensor NCS-1 regulates the phosphorylation state and activity of the Gα chaperone and GEF Ric-8A. *Elife*. 2023 Nov 29;12:e86151. DOI: 10.7554/eLife.86151. PMID: 38018500).
4. Description of new elements required for the formation of highly specialised synapses (Jimeno D, Lillo C, de la Villa P, Calzada N, Santos E, Fernández-Medarde A. GRF2 is Crucial for Cone Photoreceptor Viability and Ribbon Synapse Formation in the Mouse Retina. *Cells*. 2023 Nov 4;12(21):2574. DOI: 10.3390/cells12212574. PMID: 37947653).
5. Consolidation of the group with the incorporation of members who are experts in the basic techniques of biochemistry and pharmacology.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	2	8,70	4,35	2	100	0	0
2020	11	60,90	6,09	9	82	3	27
2021	8	50,32	6,29	8	100	1	15
2022	7	61,88	8,84	7	100	1	14
2023	6	41,61	6,94	6	100	3	50
	34	223,41	6,50	32	92	5	19

### Research Groups

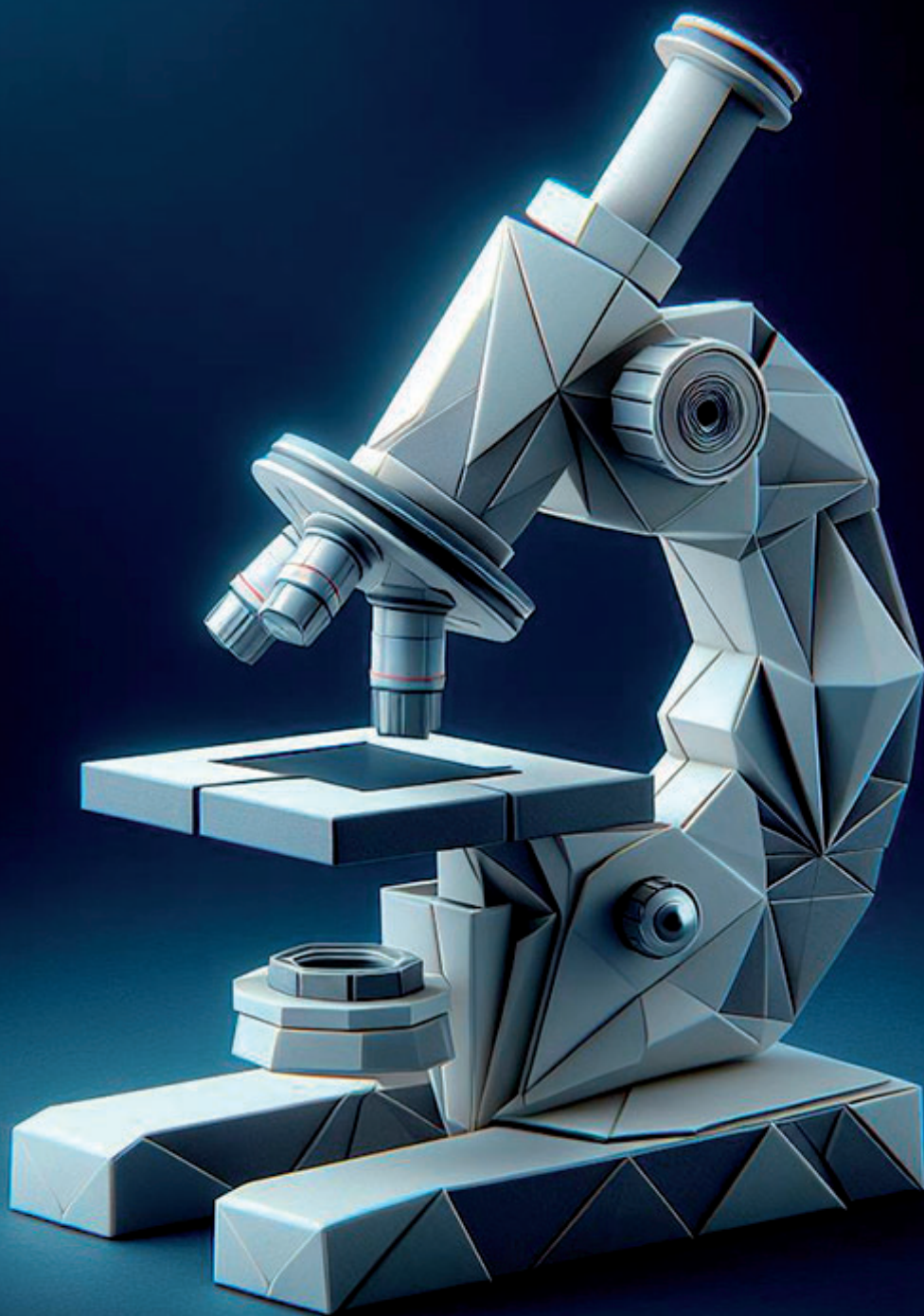
Infectious Diseases

Biology and Evolution of Microorganisms

Reprogramming of Prokaryotic and Eukaryotic Microbial Processes and Systems

Health Outcomes Research

Translational Individualised Medicine in Inflammation and Cancer





# Area 2

## Microbiology, Immunology and Infection

# 21

### Funding and Scientific Output in the Past 5 Years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€12,3M 

R&D PROJECTS  
AND INITIATIVES

306 

PUBLICATIONS

1.248 

PUBLICATIONS  
in Q1 & Q2

75%

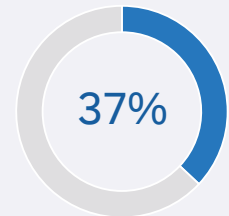
PUBLICATIONS  
headed by IRYCIS members

54%

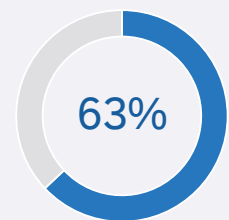
THESES  
supervised doctoral theses read

47

GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

**Pérez JA, Crespillo C, Zamora J, Fernández BM, Gaetano A, López JC, Serrano S, Moreno S, Álvarez N, Berenguer J.** Contribution of low CD4 cell counts and high HIV viral load to the efficacy of preferred first-line antiretroviral regimens for treating HIV infection: A systematic review and meta-analysis. *Clin. Infect. Dis.* 2023;76(11): 2027 - 2037. DOI:10.1093/cid/ciad177. PMID: 36975712

**Escudero R, Rubio E, Vizcarra P, Braojos F, Diaz Á, Del Campo L, Muriel A, Halperin A, Ponce M, Moreno S, Cobo J.** Conventional versus extended-pulsed fidaxomicin dosing in patients at high risk of recurrence of *Clostridioides difficile* infection: a propensity score analysis. *J Antimicrob Chemother.* 2023;78(3): 823 - 827. DOI:10.1093/jac/dkad019. PMID: 36861316

**Serrano S, Tincati C, Raju SC, Sáenz JS, Moreno E, Bargiela R, Cabello A, Sendagorta E, Kurz A, Perez JA, de Benito A, Hov JR, Fernandez L, Muriel A, Del Campo R, Moreno S, Trøseid M, Seifert J, Ferrer M.** Microbiome-derived cobalamin and succinyl-CoA as biomarkers for improved screening of anal cancer. *Nat Med.* 2023;29(7): 1738 - 1749. DOI:10.1038/s41591-023-02407-3. PMID: 37464040

**Castillo JA, Hernández M, Morosini MI, Pérez B, Soriano C, de Pablo R, Cantón R, Ruiz P.** Outbreak by KPC-62-producing ST307 *Klebsiella pneumoniae* isolates resistant to ceftazidime/avibactam and cefiderocol in a university hospital in Madrid, Spain. *J Antimicrob Chemother.* 2023;78(5): 1259 - 1264. DOI:10.1093/jac/dkad086. PMID: 36964710

**Perez AE, Ginevra C, Rusniok C, Jarraud S, Buchrieser C.** The respiratory tract microbiome, the pathogen load, and clinical interventions define severity of bacterial pneumonia. *Cell Rep Med.* 2023;4(9): 101167. DOI:10.1016/j.xcrm.2023.101167. PMID: 37633274.

# Area 2

## Microbiology, Immunology and Infection

### Infectious Diseases Group

# 21



#### GROUP COMPOSITION

##### Head

Santiago Moreno Guillén  
Department Head of Infectious Diseases  
University Hospital Ramon y Cajal  
smguillen@salud.madrid.org  
91 336 87 10

##### Principal Investigators

Santiago Moreno Guillén  
Alejandro Vallejo Tiller  
Begoña Monge Maillo  
Francisco Javier Cobo Reinoso  
Jesús Fortún Abete  
José Antonio Pérez Molina  
Pilar Martín Dávila  
Sergio Serrano Villar  
M<sup>a</sup> Jesús Pérez Elías  
Matilde Sánchez Conde

##### Contributing Staff

Adrián Martín-Hordaza Ríos  
Alba Talavera Rodríguez  
Alejandro García García  
Ana del Amo de Palacios  
Ana M<sup>a</sup> Moreno Zamora  
Carmen Quereda Rodríguez-Navarro  
Celia Cano Sanz  
Clara Crespillo Andújar  
Claudio Díaz García  
Daniel de las Heras Gómez  
Daniel Jiménez Navarro  
Elena Moreno del Olmo  
Enrique Navas Elorza  
Fernando Drona Núñez  
Francesca Florence Norman  
Francesca Guiuseppina Gioia  
Humberto Erick de la Torre Tarazona  
Javier Martínez Sanz

Javier Moreno García  
Jorge Díaz Álvarez  
José Luis Casado Osorio  
José Manuel Hermida Donate  
Laura Martín Pedraza  
María Fons Contreras  
M<sup>a</sup> Dolores Corbacho Loarte  
M<sup>a</sup> Elena Álvarez Álvarez  
M<sup>a</sup> Jesús Vivancos Gallego  
Mario Pons Guillén  
Miguel Suárez Robles  
Pilar Vizcarra  
Raquel Ron González  
Rogelio López-Vélez Pérez  
Rosa Escudero Sánchez  
Sandra Chamorro Tojeiro  
Santos del Campo Terrón  
Vicente Pintado García



#### LOCATION

Laboratory of Immunovirology and  
Clinical Trials Unit in General Infectious  
Diseases. Floor 4 Centre, Control A  
Clinical Trial Unit in HIV Infection and  
Tropical Medicine. Outpatient Clinic Bldg,  
ground floor  
Hospital Universitario Ramón y Cajal

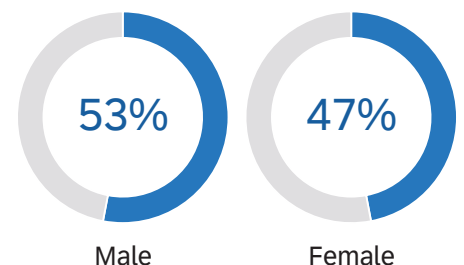


#### KEY WORDS

HIV infection, immunocompromised,  
antibiotic, antiviral, antiparasitic,  
antifungal, hepatitis, human papilloma  
virus, sexually transmitted infection



#### GENDER DISTRIBUTION



# Area 2

## Microbiology, Immunology and Infection

### Infectious Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER of Infectious Diseases
- EuroSIDA - Prospective observational cohort study
- GeoSentinell Surveillance Network
- EuroTravNet\_European Travel and Tropical medicine Network
- +REDIVI - Cooperative Network for the Study of Infections Imported by Travelers and Immigrants
- TropNet (European Network on Imported Infectious Disease Surveillance)
- ART-CC\_Antiretroviral Therapy Cohort Collaboration
- COHERE\_The Collaboration of Observational HIV Epidemiological Research Europe
- HIV Causal Collaboration
- RDI Data and Study Group
- WHO\_World Health Organisation: Center for the clinical management of leishmaniasis-SPA 55
- European AIDS Clinical Society (EACS) - Women against viruses in Europe (WAVE)



#### LINES

- HIV infection
- Imported Infectious Diseases (Tropical Medicine)
- Infectious diseases in healthy and immunocompromised individuals

#### STRATEGIC OBJECTIVES

- To better understand the determinants and pathogenic mechanisms of infectious diseases that cause health problems in our environment, with special emphasis on environmental factors, host factors and factors related to the microorganism itself.
- To determine the best diagnostic, therapeutic and preventive approach for diseases caused by bacteria, viruses, fungi and parasites prevalent in our environment.
- To better understand, in collaboration with national and international groups, the mechanisms of HIV persistence and of drug interventions that can contribute to its eradication.
- To understand the characteristics of infectious diseases that affect immigrants in Spain and travellers to tropical and subtropical areas, deepening the understanding of the diagnostic and therapeutic procedures for these diseases.
- To define strategies for optimising the use of antimicrobials in treating community and hospital-acquired infections that enable maximum efficacy with the lowest toxicity for the patient, the lowest impact on the ecosystem and the minimum pharmaceutical expenditure.

### Infectious Diseases Group

#### INDICATORS OF ACTIVITY 2023

- 2 competitive European projects H2020: EDCTP2, IMI-COMBACTE-NET
- 13 national competitive public projects: ISCIII
- 16 private projects led
- 66 clinical studies led
- 12 competitive HR agreements
- 110 publications
- IF: 992.80
- Publications in Q1: 53 (48%)
- Publications in D1: 26 (24%)
- 2 supervised doctoral theses read
- 2 research awards
- 3 consensus documents, 1 clinical guideline, 3 technical reports, 3 recommendations
- Evaluators of national institution projects: 10 PIs
- Evaluators of international institution projects: 7 PIs
- Editorial committee members: 7 PIs
- 1 priority European application (21382486.5.) "Differences in saliva ACE2 activity among infected and non-infected adult and pediatric population exposed to SARS-CoV-2" with extension PCT/EP2023/082280 "Microbiota-associated markers of high-grade squamous intraepithelial lesions (HSIL)"
- 3 visitors hosted and 17 months of stay:
  - Universidad Politécnica de Madrid
  - Universidad Oberta de Catalunya
  - Universidad Bahía (Brasil)
- 12 months stay in foreign institution:
  - University of California San Francisco (USA)
  - Vitalant Research Center (San Francisco, USA)

#### NOTEWORTHY MILESTONES

1. Rotation of two researchers in the group as part of their competitive contracts for 6 months in the University of San Francisco/Vitalant Research Institute, San Francisco (United States). Institution of renowned prestige in research ranging from the epidemiology of blood donors to cell therapy and the discovery of viruses.
2. Sergio Serrano-Villar et al. Microbiome-derived cobalamin and succinyl-CoA as biomarkers for improved screening of anal cancer. *Nat Med.* 2023 Jul;29(7):1738-1749. doi: 10.1038/s41591-023-02407-3. PMID: 37464040
3. Awarding of a project to create an accurate diagnostic test for anal cancer funded by Fundación La Caixa to Dr Sergio Serrano.
4. The start of the prestigious European MSC Postdoctoral Fellowship grant awarded to postdoctoral researcher Elena Moreno and tutored by Dr Sergio Serrano to implement the project "MicrobiomE-associaTEd boosters Of immune Responses (METEOR study): experimental characterization and clinical exploitation".
5. Success in AES 2023 call: 3 health research projects (PI23/01896; PI23/00302; PI23/00099); 4 competitive HR contracts in research; 1 Sara Borrell (CD23/00163), 1 Juan Rodés (JR23/00057), 2 Río Hortega (CM23/00079 and CM23/00045).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	105	371,58	3,91	67	64	21	20
2020	112	638,63	5,70	82	73	36	32
2021	100	673,17	6,73	76	76	26	26
2022	87	800,64	9,20	64	74	19	22
2023	110	992,80	10,24	79	72	26	24
	514	3476,8	7,16	368	72	128	25

# Area 2

## Microbiology, Immunology and Infection

### Biology and Evolution of Microorganisms Group



#### GROUP COMPOSITION

##### Head

Rafael Cantón Moreno  
Head of the Microbiology Department  
University Hospital Ramon y Cajal  
rafael.canton@salud.madrid.org  
91 336 88 32

##### Principal Investigators

Rafael Cantón Moreno  
África Holguín Fernández  
Fernando Baquero Mochales  
Jerónimo Carlos Rodríguez Beltrán  
Juan Carlos Galán Montemayor  
Juan de Dios Caballero Pérez  
M<sup>a</sup> Teresa Coque González  
Patricia Ruiz Garbajosa  
Rosa María del Campo Moreno

##### Contributing Staff

Ada Muñoz Cazalla  
Ainhize Maruri Aransolo  
Ana Elena Pérez Cobas  
Ana Fernández Olmos

Ana Moreno Blanco  
Ana Rodríguez Galet  
Ana Valadés Alcaraz  
Ana Verónica Halperin  
Bárbara Catalá Sánchez  
Beatriz Romero Hernández  
Blanca Pérez Viso  
Carmen de la Vega Losada  
Carolina López López  
Concepción Rodríguez Jiménez  
Cristina Herencias Rodríguez  
Cristina Moraleja Novillo  
Desirée Gijón Cordero  
Esther Palacios Gómez  
Ignacio de Quinto Cáceres  
José Avendaño Ortiz  
Juan Antonio del Castillo Polo  
Judit María Ventosa Cubillo  
Laura Álvaro Llorente  
Laura Jaraba Soto  
Laura Martínez García  
Luna Ballesterero García  
M<sup>a</sup> Asunción Garriga García  
M<sup>a</sup> del Carmen García Castillo  
M<sup>a</sup> Elena Martínez Rodríguez

M<sup>a</sup> Elia Gómez García de la Pedrosa  
M<sup>a</sup> Isabel Serrano Tomás  
Manuel González de Aledo-Ferrández  
Marina Domínguez Gaitero  
Mario Herbert Romero Rivera  
Mario José Rodríguez Domínguez  
Marta Hernández García  
Marta Nieto Torres  
Marta Tato Díez  
Miguel Díez Fernández de Bobadilla  
Natalia Bastón Paz  
Natalia Guerra Pinto  
Oihane Martín Sainz de la Maza  
Paloma Tage Troyano Hernáez  
Patricia Irais Hernández González  
Paula Ramiro Martínez  
Pedro Manuel Herrador Gómez  
Pedro Manuel Ponce Alonso  
Raquel Barbero Herranz  
Roberto Reinoso Fernández  
Saioa Vicente Santamaría  
Silvia Serrano Calleja  
Sonia Aracil Gisbert



#### LOCATION

Hospital Universitario Ramón y Cajal  
Molecular Biology Lab. Floor -1 Left. (PI: R. Cantón, J.C. Galán, P. Ruiz, J.d.D. Caballero)  
Molecular Epidemiology of HIV-1 Lab. Floor -2 Right. (PI: Á. Holguín)  
Microbiology Lab. -1 Right. (PI: R. del Campo)  
Bacterial Evolution Lab – Teaching Building (PI: F. Baquero, T.M. Coque, J.C. Rodríguez- Beltrán)  
Cystic Fibrosis Unit. Floor 2 Left (S. Vicente)

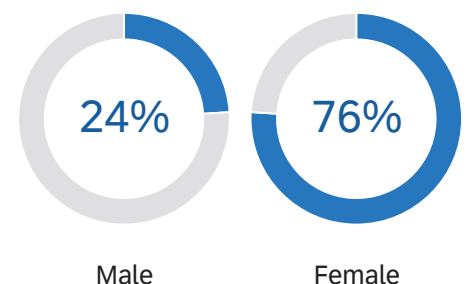


#### KEY WORDS

populational biology, antimicrobial resistanc, respiratory infection, microbiota, metagenomics, HIV, clinical trials of diagnostic tests



#### GENDER DISTRIBUTION



## Area 2

### Microbiology, Immunology and Infection

#### Biology and Evolution of Microorganisms Group

##### NETWORKS AND ALLIANCES

- CIBER of Epidemiology and Public Health
- CIBER of Infectious Diseases
- CLSI - Clinical and Laboratory Standards Institute
- JPIAMR - Joint Programme Initiative on Antimicrobial Resistance
- EUCAST - European Committee on Antimicrobial Susceptibility Testing
- HIVDR TCN LAC International NETWORK
- Fundación Gadea Ciencia
- WHO-UNAIDS Network for HIV Isolation and Characterisation
- FAO (Food and Agriculture Organisation of the United Nations) / WHO (World Health Organisation)
- PRAM - National Plan for Antimicrobial Resistance
- CYTED-PLANTAIDS
- Emory University, Atlanta (USA)
- CYTED-RESISTIRE (Network for the Systematic Interacademic Study of Resistance)
- Fundación Francisco Soria Melguizo
- RITIP -Network for Translational Research in Paediatric Infectiology
- SEMTSI-Sociedad Española de Medicina Tropical y Salud Internacional
- CHAFAE-Consumers, Health, Agriculture and Food Executive Agency
- Fundación Familia Alonso
- ICOMEM-Ilustre Colegio Oficial de Médicos. Madrid
- Biotechvana (Technological park of Valencia)
- SARS-CoV-2 sequencing network
- National AIDS Plan
- Bomberos Ayudan association
- Fundación SEPLA Grant
- Fundación Turismo Solidario 2020
- Asociación Nacional de Directores de Hoteles de España (AEDH)
- Red española de BACTERIAS Lácticas (RedBAL)
- Transatlantic Taskforce on Antimicrobial Resistance (TATFAR)
- ASEBIO Antibiotic-Resistance Workgroup
- United Nations Environmental Programme (UNEP)
- Sociedad Española de Microbiota, Probióticos y Prebióticos (SEMIPyP)
- PRECICOLON-CM. Towards precision medicine in colon cancer: biomarkers, tumour microenvironment and microbiota



## Microbiology, Immunology and Infection

### Biology and Evolution of Microorganisms Group

#### LINES

- Evolutionary microbiology, eco-microbiology and modelling of microbial processes relevant to global health (PI: Dr F. Baquero).
- Epidemiology of antibiotic resistance, clinical trials of diagnostic tests and phagotherapy (PI: Dr R. Canton, Co-PI: Dr P. Ruiz).
- Biology of bacterial populations, mobile genetic elements and resistomes (PI: Dr M.T. Coque).
- Metagenomics/Microbiome and disease; host-parasite interaction (PI: Dr R. del Campo).
- Diagnostic and clinical implications of the viral genetic variability in national and international cohorts and the development of new nanotechnologies for the early molecular diagnosis of HIV using aptamers (PI: Dr A. Holguín).
- Strategies for improving the diagnosis and genomic epidemiology of viral sexually transmitted infections (HIV/STI/hepatitis) and respiratory infections (PI: Dr J.C. Galán).
- Evolution of antibiotic resistance, mechanisms and new strategies (PI: Dr J.C. Rodríguez-Beltrán).
- Cystic fibrosis: self-management for the nutritional approach in the search for patient wellbeing (PI: Dr J.d.D. Caballero and S. Vicente).

#### STRATEGIC OBJECTIVES

- Innovation and development in translational research in microbiology, with an emphasis on the anthropogenic influence in the emergence and dissemination of pathogenic microorganisms with or without antimicrobial resistance and the possible strategies for controlling them.
- Consolidation of the techniques of molecular microbiology, bioinformatic platforms, mathematical and computational modelling for the study of the changes in microbial biology and the microbiome affecting human health, considered on multiple hierarchical levels (from genes to clones and to patients and to the constructed environment).
- Consolidation of innovative and useful microbiology for public health based in the Hospital, with applications not only in hospital-acquired infections but also in community-acquired infections and in the environmental microbial ecosystems.
- Training of researchers in molecular microbiology and public health microbiology.

#### INDICATORS OF ACTIVITY 2023

- 9 competitive European projects: IMI, H2020, HE, ERC-STG, EU4HEALTH, JPIAMR
- 16 competitive national public projects led: ISCIII, CAM, FIBioHRC
- 17 private projects led
- 9 clinical studies led
- 16 competitive HR agreements
- 92 publications
- IF: 699.12
- Publications in Q1: 38 (41%)
- Publications in D1: 19 (21%)
- 3 supervised doctoral theses read
- 4 awards
- Project evaluators: 7 PIs
- Editorial committee members: 5 researchers
- 1 registration of intellectual property (application No. 2305114294344), a co-development agreement and licence
- 1 clinical guideline, 6 technical reports and 2 consensus documents
- 17 activities with societal impact (interviews in the media, news in the press, solidarity market, European Researchers' Night, classes, conferences, among others)
- 10 visitors hosted and 35 months of stay:
  - UCM and UAM
  - Hospital Lozano Blesa de Zaragoza
  - Hospital General de Alicante
  - Hospital Virgen del Rocío de Sevilla
  - Hospital Univ. CEMIC (Argentina)
- + 3 months of stay in foreign institutions:
  - Faculty of Marine Sciences and Biological Resources, Universidad de Antofagasta (Chile)

# Area 2

## Microbiology, Immunology and Infection

### Grupo Biología y Evolución de Microorganismos

#### NOTEWORTHY MILESTONES

1. Preparation of reports and guidelines for international (Quadripartite report of UNEP, WHO, FAO and WOAHA that reviews the available evidence with an open OneHealth view of the environmental aspects of antimicrobial resistance) and national agencies (Guidelines for the PROA [antimicrobial stewardship programme] certification with AEMPS) and for scientific societies (SEIMC guidelines for the treatment of infections by multiresistant Gram-negative bacilli).
2. Integration in the FORTALECE Project of IRYCIS/ISCIII, which aims to strengthen the emerging and established groups through the development of therapies and innovative actions for transference to clinical practice.
3. Fundraising in competitive calls for international (ERADIAMR) and national ISCIII projects (PI23/01036, PI23/01945, PI23/00175 and PI23/01194), FOR23/00046 FORTALECE, IM\_MISIÓN22), including HR: 1 Río Hortega, 1 agreement for attracting researcher talent "César Nombela" of the Community of Madrid and agreements with pharmaceutical, biotechnology and diagnostic companies (QUANTAMATRIX, SHIONOGI, VIRCELL, Becton Dickinson, Mikrobiomik and Canal de Isabel II) and Foundations (Familia Alonso).
4. Awarding of two new JPIAMR networks for in-network coordination studies of European groups: TEAPOTS "Tools for the Epidemiology of AMR Plasmids, One-Health Transmission and Surveillance" e ISARPAE "Improving surveillance of antibiotic-resistant *Pseudomonas aeruginosa* in Europe").
5. Participation in international Global Health programmes in collaboration with local health ministries, for the implementation of projects to improve the diagnosis and follow-up of HIV infection in countries with low to medium resources, as well as in the training of local personnel in these countries destined for their reference laboratories.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	81	397,37	5,23	59	73	15	19
2020	104	413,83	4,36	72	69	19	18
2021	108	686,36	6,60	80	74	19	18
2022	114	856,67	8,16	85	75	15	13
2023	92	699,12	8,32	67	73	19	21
	499	3053,35	6,53	363	73	87	17



# Area 2

## Microbiology, Immunology and Infection

### Reprogramming of Prokaryotic and Eukaryotic Microbial Processes and Systems Group

# 21



#### GROUP COMPOSITION

##### Head

María Molina Martín  
Professor at Universidad Complutense de Madrid  
molmifa@ucm.es  
91 394 18 88

##### Principal Investigators

María Molina Martín  
Concepción Gil García  
Javier Arroyo Nombela  
Jesús Pla Alonso

##### Contributing Staff

Aida Pitarch Velasco  
Alba Victoria Rubio Lozano  
Alejandro Fernández-Vega Granado  
Ana Belén Sanz Santamaría  
Ana Borrajo López  
Ángela Sellers Moya  
Antonio Daniel Prieto Prieto  
Beatriz Lavilla García  
Carmen García Durán  
Claudia Marcela Parra Giraldo  
Elba del Val Oriza  
Elvira Román González  
Gema González Rubio  
Gloria Molero Marín-Portugués  
Humberto Martín Brieua

José Manuel Rodríguez Peña  
Lucía Monteoliva Díaz  
M<sup>a</sup> Isabel Rodríguez Escudero  
María Isabel Cortés Prieto  
Marta Valentí Sanguino  
Mónica Pavón Vergés  
Óscar Alberto Barbero Ruiz  
Raquel Martínez López  
Raúl García Sánchez  
Rebeca Alonso Monge  
Sara López Montesino  
Teresa Fernández-Acero Bascones  
Víctor Arribas Antón  
Víctor Jiménez Cid  
Victoria Mascaraque Martín  
Yuliya Petryk



#### LOCATION

Department of Microbiology and Parasitology  
Faculty of Pharmacy  
Universidad Complutense de Madrid  
Plaza Ramón y Cajal s/n

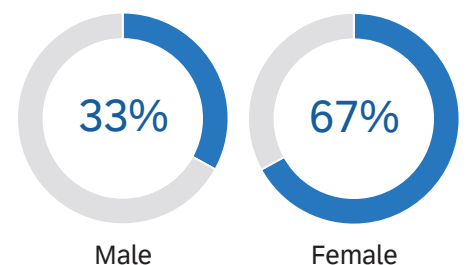


#### KEY WORDS

yeasts, Saccharomyces, Candida, signal transduction, antifungals, fungal infections, commensalism, microbiota, bacterial virulence, oncogenic pathways, proteomics, transcriptomics, functional genomics



#### GENDER DISTRIBUTION



# Area 2

## Microbiology, Immunology and Infection

### Reprogramming of Prokaryotic and Eukaryotic Microbial Processes and Systems Group

#### LINES

- The cell integrity pathway in yeasts as an essential survival circuit: molecular mechanisms of activation, development and regulation of adaptation responses.
- Signal transduction in *Saccharomyces cerevisiae*. Reprogramming of the cell integrity pathway through synthetic biology and expression of bacterial virulence proteins, human oncogenic proteins and related to signalling through Toll-like receptors of innate immunity.
- Mechanisms of pathogenicity and adaptation to the commensal state of *Candida albicans*: the role of microbiota and the host's immune response.
- Proteomics of the microorganism-host interaction, of the intestinal microbiota and of human-related proteins.

#### STRATEGIC OBJECTIVES

- Identification of effector proteins of the yeast cell wall integrity pathway of *Saccharomyces cerevisiae* as potential therapeutic targets for drugs that block the adaptation mechanisms in stress conditions that compromise cell integrity.
- Reconfiguration of the cell integrity pathway through the spatial redistribution of its components or of human heterologous proteins that activate this pathway. Reconstitution in yeast of supramolecular complexes (SMOCs) associated with TLR4. Interference in cell signalling caused by effectors of bacterial virulence.
- Study of the involvement of signal transduction pathways in pathogenesis and in the modulation of the host's immune response, as well as the genetic mechanisms that regulate adaptation to the commensal state for the development of fungal probiotics.
- Proteomic study in the host-microorganism interaction using the model of *Candida albicans* and human macrophages and the development of diagnostic and prognostic methods for infectious diseases using protein arrays, antibody arrays and directed proteomics methods (SRM).

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project: H2020 (RltrainPlus-101008503)
- 10 competitive national public projects led: ISCIII, MICINN, CAM
- 4 private projects led
- 5 publications
- IF: 37.20
- Publications in Q1: 3 (60%)
- Publications in D1: 1 (20%)
- 3 supervised doctoral theses read
- Evaluators of public research agencies: 4 researchers.
- Editorial committee members: 6 researchers.
- 5 actions with societal impact (informative articles, interviews, project in secondary schools of the Community of Madrid, social networks and information websites, radio programmes, among others)
- 3 months stay in a foreign institution:
  - Lerner in the Instituto de Fisiología, Biología Molecular y Neurociencias, UBA – CONICET. Buenos Aires (Argentina)

#### NOTEWORTHY MILESTONES

1. Five REACT-ANTICIPA PR38/21-03 projects, led by Dr Arroyo, Dr Gil and Dr Pla.
2. Valenti M, Molina M, Cid VJ. Human gasdermin D and MLKL disrupt mitochondria, endocytic traffic and TORC1 signalling in budding yeast. *Open Biol.* 2023 May;13(5):220366. doi: 10.1098/rsob.220366. Epub 2023 May 24. PMID: 37220793.
3. Sá-Pessoa J, López-Montesino S, Przybyszewska K, Rodríguez-Escudero I, Marshall H, Ova A, Schroeder GN, Barabas P, Molina M, Curtis T, Cid VJ, Bengochea JA. A trans-kingdom T6SS effector induces the fragmentation of the mitochondrial network and activates innate immune receptor NLRX1 to promote infection. *Nat Commun.* 2023 Feb 16;14(1):871. doi: 10.1038/s41467-023-36629-3. PMID: 36797302.
4. González-Rubio G, Martín H, Molina M. The Mitogen-Activated Protein Kinase Stt2 Promotes Asymmetric Cell Cycle Arrest and Reduces TORC1-Sch9 Signaling in Yeast Lacking the Protein Phosphatase Ptc1. *Microbiol Spectr.* 2023 Jun 15;11(3):e0524922. doi: 10.1128/spectrum.05249-22. Epub 2023 Apr 12. PMID: 37042757.
5. Fernandes TR, Mariscal M, Serrano A, Segorbe D, Fernández-Acero T, Martín H, Turrà D, Di Pietro A. Cytosolic pH Controls Fungal MAPK Signaling and Pathogenicity. *mBio.* 2023 Apr 25;14(2):e0028523. doi: 10.1128/mbio.00285-23. Epub 2023 Mar 2. PMID: 36861989.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	14	89,23	6,37	11	79	2	14
2020	12	47,18	3,93	8	67	3	25
2021	17	111,09	6,54	15	88	3	18
2022	16	93,62	6,24	15	94	1	6
2023	5	37,20	7,44	5	100	1	20
	64	378,32	6,11	54	84	10	16

# Area 2

## Microbiology, Immunology and Infection

### Health Outcomes Research Group



#### GROUP COMPOSITION

##### Head

Jesús M<sup>a</sup> Aranaz Andrés  
Head of Preventive Medicine and Public Health  
jesusmaria.aranaz@salud.madrid.org  
91 336 83 72

##### Principal Investigator

Jesús M<sup>a</sup> Aranaz Andrés

##### Contributing Staff

Abelardo Claudio Fernández Chávez  
Amaranta Mcgee Laso  
Ana García de la Santa Viñuela

Carmen Garrote Liarte  
Cornelia Bischofberger Valdés  
Cristina Díaz-Agero Pérez  
Diana Carretero Gómez  
Diego San José Saras  
Eva Elisa Álvarez León  
Francisco Bolumar Montrull  
Gema Nieto Gómez  
Gerardo Gómez Montero  
Jessica Alía Herrero  
Jorge de Vicente Guijarro  
Juan Daniel Miranda Cortés  
Manuela Serrano Pareja  
Marco Antonio Espinel Ruiz

M<sup>a</sup> del Carmen Martínez Ortega  
Mercedes García Haro  
Miguel Ignacio Cuchi Alfaro  
Miriam Roncal Redín  
Moisés David Espejo Mambié  
Nerea Armenteros Arzá  
Paloma Moreno Núñez  
Paloma Navas Gutiérrez  
Raquel Arguedas Sanz  
Raquel Gutiérrez Gallardo  
Sara de la Hoz San Clemente  
Tayeb Bennouna Dalero  
Víctor Ramón Martínez Gómez



#### LOCATION

Department of Preventive Medicine and Public Health. Floor 3 Left  
Hospital Universitario Ramón y Cajal

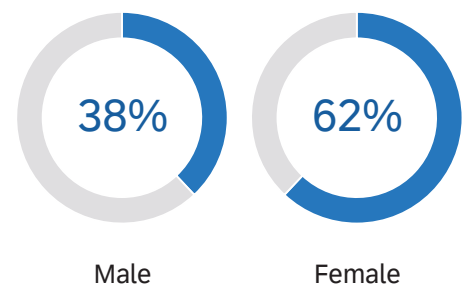


#### KEY WORDS

research in health results, patient safety, adverse events, healthcare quality, patient satisfaction, use and evaluation of healthcare centres and services, clinical epidemiology



#### GENDER DISTRIBUTION



# Area 2

## Microbiology, Immunology and Infection

### Health Outcomes Research Group

#### NETWORKS AND ALLIANCES

- CIBER of Epidemiology and Public Health
- Universidad Politécnica de Madrid
- Center for Risk Management and Patient Safety of Toscana, Italy
- Escola Nacional de Saúde Pública - Universidade Nova de Lisboa
- Cost Action: ERNST-CA19113



#### LINES

- Health results research
- Research of results in public health

#### STRATEGIC OBJECTIVES

- Surveillance of health problems, to evaluate changes and trends in health and the factors that determine them, especially those that belong to the hospital setting, through the application of the principles and methods of epidemiology.
- Intervention, through the activities of individual preventive medicine and others of a generic or collective nature (preparation of regulations, guidelines, protocols, etc.) for improving the effectiveness of clinical practice, quality care and patient safety.
- Health promotion and protection, directed at improving the level of health and controlling the factors that determine it.
- Risk assessment –in the hospital and community– and improving the management of risks.
- Evaluation of the effectiveness, efficiency and usefulness of the various actions.

#### INDICATORS OF ACTIVITY 2023

- 2 competitive national projects led: MICINN, Ministry of Labour and Social Economy
- 9 private projects led
- 9 publications
- IF: 41.90
- Publications in Q1: 4 (44%)
- 1 supervised doctoral thesis read
- 7 awards
- Evaluators of national public agencies: 3 researchers
- Editorial committee members: 2 researchers
- 1 new registration of a utility model (facemask for inhaling nebulised substances with an incorporated aspiration system U202230357)
- 4 registrations of intellectual property: SER+COVID APP (1609022147992) and 3 other new APPS: Quickvaccine (2205271226694), No hacer (2207261668651) and ADECUAS (2209232069733)
- 1 new registration of intellectual property for the project “Manual cleaning and decontamination of medical-surgical material and instrumentation (2211022547215)”
- 1 registration of intellectual property for Mounting and Preparation: “those great forgotten in sterilisation” (1910012057062)
- 1 clinical guideline, 1 protocol of implanted healthcare processes and 1 protocol of improvements in clinical practice
- 2 activities with societal impact (news in the press and organisation of congresses)
- 5 visitors hosted and 21 months of stay:
  - Universidad Politécnica de Madrid
- 4 months stay in foreign institutions:
  - Escola Nacional de Saúde Pública – Universidade Nova de Lisboa (Portugal)
  - Medical University of Lublin. Polonia

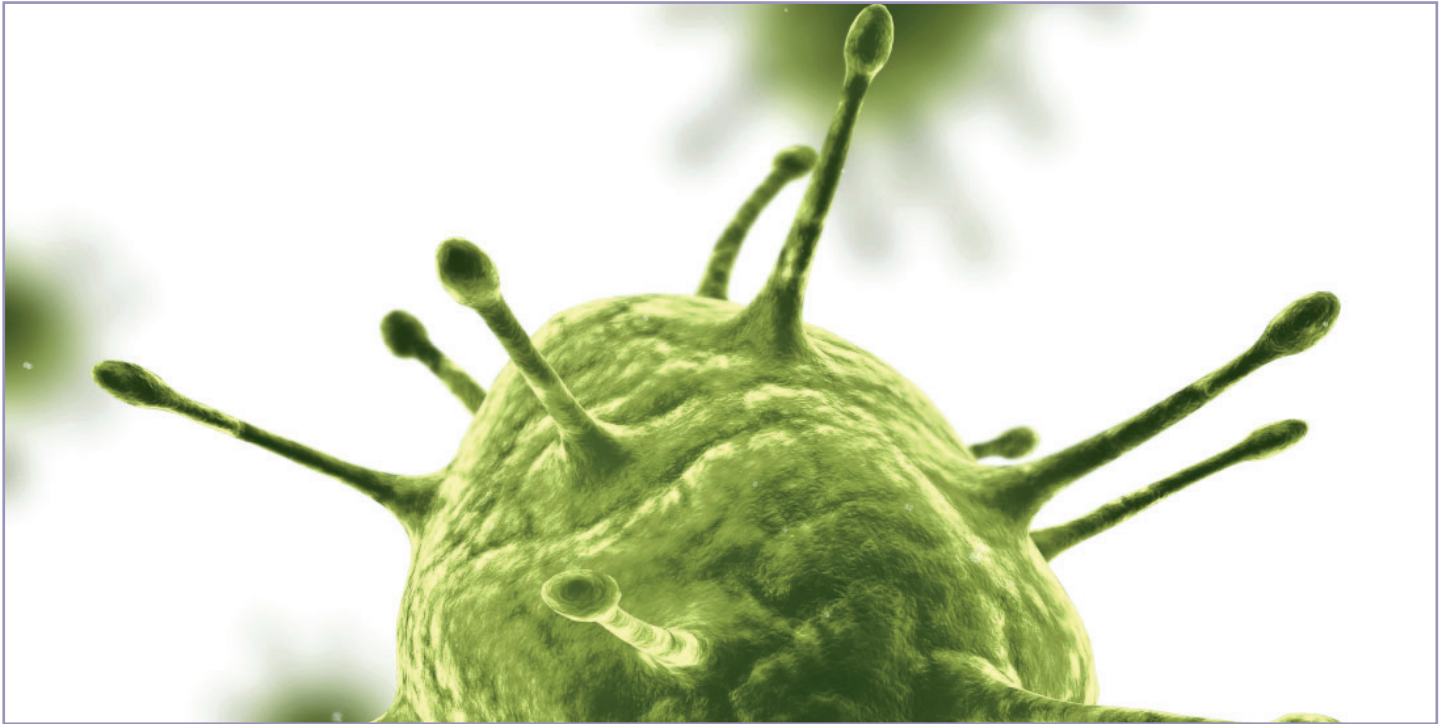
#### NOTEWORTHY MILESTONES

1. Universidad Internacional de La Rioja (UNIR) has recognised the professional experience of Dr Jesús María Aranaz Andrés (director of the Master's programme In Management of Patient Clinical Safety and Healthcare Quality of UNIR).
2. San Jose-Saras D, Vicente-Guijarro J, Sousa P, Moreno-Nunez P, Aranaz-Andres JM; Health Outcomes Research Group of the Ramón y Cajal Institute for Health Research (IRYCIS). Inappropriate hospital admission as a risk factor for the subsequent development of adverse events: a cross-sectional study. BMC Med. 2023;21(1):312. Published 2023 Aug 17. doi:10.1186/s12916-023-03024-0. PMID: 37592294. The article has received numerous mentions and reviews in media of recognised prestige.
3. The doctoral thesis of Dr Cristina Díaz-Agero Pérez received the following recognition: 1) Extraordinary Award of UAH and 2) XIX Award of the UAM-ASISA Chair to the best doctoral thesis published in 2022 on healthcare management and economics of health.
4. Consolidation of the alliance with Escola Nacional de Saude Publica de la Universidade NOVA of Lisbon, having conducted the following actions: 1) Holding of a conference for disseminating the activities of the Department of Preventive Medicine; 2) Implementation of a research stay by the researcher Ana García de la Santa, within the framework of a doctorate with an International Mention option; and 3) Joint publication of two high-impact articles.
5. Winners of the Sandoz challenge for the proper use of antibiotics by the project "Visualization of Surveillance Data of Multiresistant Microorganisms (VIDAVIMM)". VIII National Hackathon of Health. 2023.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	10	22,83	2,28	5	50	0	0
2020	15	48,27	3,71	7	47	1	7
2021	17	57,20	3,81	10	59	1	6
2022	16	37,77	3,43	6	38	0	0
2023	9	41,90	5,24	6	67	0	0
	67	207,97	3,69	34	51	2	3



#### GROUP COMPOSITION

##### Head

Melchor Álvarez de Mon Soto  
Professor of the Dept. of Medicine and  
Medical Specialties  
melchor.alvarezdemon@uah.es  
91 885 45 98

##### Principal Investigators

Melchor Álvarez de Mon Soto  
Miguel Ángel Álvarez de Mon González

##### Contributing Staff

Alfredo Prieto Martín  
Ana Isabel Sánchez Atrio  
Atusa Movasat Hajkhan  
Cielo García Montero  
Cristina Bohórquez Heras  
David Díaz Martín  
Eva María Sanz Merino  
Fátima Navarro Expósito  
Federico Carabot Villanueva

Jorge Monserrat Sanz  
José Barbarroja Ecudero  
José Luis López González  
Laura Villalobos León  
Manuel Miguel Rodríguez Zapata  
Mercedes Rodríguez Rodríguez  
Mónica Arroyo Yustos  
Raquel Molina Villaverde  
Raúl Díaz Pedrero  
Sonia Rodríguez Martín  
Susana Núñez Nagy



##### LOCATION

Department of Medicine and Medical  
Specialties  
Faculty of Medicine and Health Sciences  
Universidad de Alcalá  
A-2 Km 33,600. 28805 Alcalá de Henares  
(Madrid)

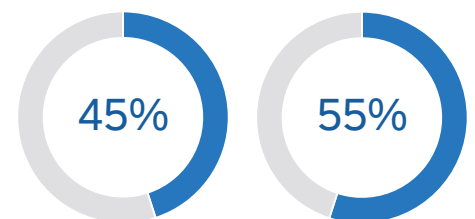


##### KEY WORDS

T cells, B cells, myelomonocytic cells,  
inflammation, immunomodulation



##### GENDER DISTRIBUTION



Male

Female

#### NETWORKS AND ALLIANCES

- CIBER of Liver and Gastrointestinal Diseases
- Individualised Translational Medicine Programme in Inflammation and Cancer (MITIC-CM)



#### LINES

- Study of T and B-cell compartment abnormalities and of innate response cells in diseases of established immune inflammatory pathogenesis. Special emphasis on autoimmune diseases with musculoskeletal and systemic involvement. Analysis of the diagnostic and therapeutic significance.
- Study of the pathogenic participation of the immune system in diseases with central nervous system involvement. Analysis of the clinical and therapeutic significance. Development, study and use of biomaterials as tissue substitutes.
- Research on the aetiopathogenic mechanisms of immune system disorders. Analysis of the relevance of interactions with microbiota and with other bodily systems.
- Clinical and therapeutic applications of immune system modulation.

#### STRATEGIC OBJECTIVES

- Analysis and characterisation of the immune system response to diseases with inflammatory pathogenesis.
- Clinical and therapeutic significance of immune system disorders in diseases with inflammatory pathogenesis.
- Development of strategies for diagnostic and therapeutic individualisation in diseases of immune pathogenesis and of immunomodulatory therapies.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive national public project led: ISCIII
- 2 private projects led
- 45 publications
- IF: 238.46
- Publications in Q1: 22 (49%)
- Publications in D1: 9 (20%)
- 1 supervised doctoral thesis read
- 1 award
- Evaluators of public research agencies: 2 PIs
- Editorial committee members: 1 PI

#### NOTEWORTHY MILESTONES

1. Consolidation of the MITIC-CM Consortium of the Programmes of R&D Activities in Biomedicine of the Community of Madrid (B2022/BMD-7321).
2. Miguel Ángel Ortega et al. A comprehensive look at the psychoneuroimmunoendocrinology of spinal cord injury and its progression: mechanisms and clinical opportunities. *Mil Med Res.* 2023 Jun 9;10(1):26. doi: 10.1186/s40779-023-00461-z. PMID: 37291666.
3. Defended doctoral thesis by a young clinical researcher with quality indices and 5 publications in JCR.
4. Implementation of the University Chair of Research on the Central Nervous System (ADAMED).
5. Intense sponsorship activities with more than half a million euros in the framework of clinical and translational research.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	12	58,56	4,88	10	83	2	17
2020	14	59,21	4,23	13	93	1	7
2021	40	174,69	4,48	34	85	4	10
2022	49	307,13	6,27	42	86	3	6
2023	45	238,46	5,55	38	84	9	20
	160	838,05	5,08	137	86	19	12

## Research Groups

Molecular Pathology of Cancer

Biomarkers and Personalised Approach to Cancer (BioPAC)

Intestinal Morphogenesis and Homeostasis

Translational Haematology





# Area 3

## Cancer

# 21

### Funding and scientific output in the past five years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€24,3M 

R&D PROJECTS  
AND INITIATIVES

973 

PUBLICATIONS

762 

PUBLICACIONES  
in Q1 & Q2

77%

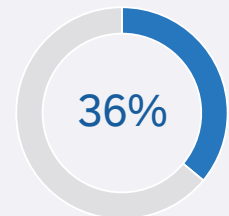
PUBLICATIONS  
headed by IRYCIS members

35%

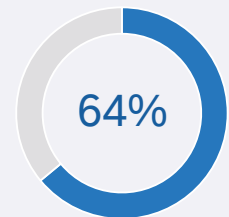
THESES  
supervised doctoral theses read

15

### GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

Linardou H, Adjei AA, Bajpai J, Banerjee S, Berghoff AS, Mathias CC, Choo SP, Dent R, Felip E, Furness A, Garassino MC, Garralda E, Konsoulova A, Letsch A, Menzies AM, Mukherji D, Peters S, Sessa C, Tsang J, Yang JC, **Garrido P**. Challenges in oncology career: are we closing the gender gap? Results of the new ESMO Women for Oncology Committee survey. *ESMO Open*. 2023;8(2): 100781 - 100781. DOI:10.1016/j.esmoop.2023.100781. PMID: 36842299

Mirza MR, González A, Graybill WS, O'Malley DM, Gaba L, Stephanie OW, **Guerra EM**. Prospective evaluation of the tolerability and efficacy of niraparib dosing based on baseline body weight and platelet count: Results from the PRIMA/ENGOT-OV26/GOG-3012 trial. *Cancer*. 2023;129(12): 1846 - 1855. DOI:10.1002/cncr.34706. PMID: 37060236

Bargiela J, **Herrero JM**, Pajuelo N, Perez M, Perona R, Quiroga AG, Calés C, **Sanchez I**. Regulatory effects of miR-19a on MAD2 expression and tumorigenesis in gastric cancer. *Genes Dis*. 2023;10(4): 1180 - 1182. DOI:10.1016/j.gendis.2023.02.025. PMID: 37397556

**Collado M**, Castillo M, Muñoz de Mier GJ, **de la Pinta C**, **Peña C**. The Diet as a Modulator of Tumor Microenvironment in Colorectal Cancer Patients. *Int J Mol Sci*. 2023;24(8). DOI:10.3390/ijms24087317. PMID: 37108477

**Pizarro D**, Romero I, **Pérez B**, Redondo A, **Caniego T**, **Carretero I**, Cristóbal E, Gutiérrez A, Santaballa A, D'Angelo E, Hardisson D, Vieites B, Matías X, Estévez P, **Guerra E**, Prat J, Poveda A, López JA, **Palacios J**. The Prognostic Significance of Tumor-Infiltrating Lymphocytes, PD-L1, BRCA Mutation Status and Tumor Mutational Burden in Early-Stage High-Grade Serous Ovarian Carcinoma-A Study by the Spanish Group for Ovarian Cancer Research (GEICO). *Int J Mol Sci*. 2023;24(13). DOI:10.3390/ijms241311183. PMID: 37446361.

# Area 3

## Cancer

### Molecular Pathology of Cancer Group



#### GROUP COMPOSITION

##### Head

José Palacios Calvo  
Jefe del Servicio de Anatomía Patológica  
jose.palacios@salud.madrid.org  
91 336 83 37

##### Principal Investigators

José Palacios Calvo  
Belén Pérez Mies  
Alfonso Cortés Salgado

##### Contributing Staff

Almudena Santón Roldán  
Amparo Benito Berlinches  
Elena López Miranda  
Eva Cristóbal Lana  
Eva M<sup>a</sup> Guerra Alía  
Ignacio Ruz Caracuel  
Irene Carretero del Barrio  
Luis Cristian Perna Monroy

M<sup>a</sup> Eugenia Reguero Callejas  
María Fernández Abad  
Marta Rosas Hernández  
Mónica García-Cosío Piqueras  
Noelia Martínez Jáñez  
Sílvia González Martínez  
Tamara Caniego Casas  
Teresa Alonso Gordo



#### LOCATION

Pathology Department  
Hospital Universitario Ramón y Cajal  
Floor -3 Left.

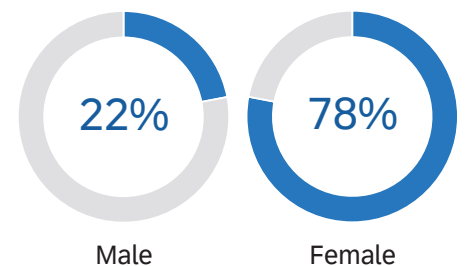


#### KEY WORDS

breast cancer, endometrial cancer,  
ovarian cancer, molecular pathology,  
mesenchymal-epithelial transition,  
prognostic and predictive factors and  
biomarkers in cancer



#### GENDER DISTRIBUTION



# Area 3

## Cancer

### Molecular Pathology of Cancer Group

#### NETWORKS AND ALLIANCES

- CIBER in Cancer
- Spanish Group for Ovarian Cancer Research (GEICO)
- IMPaCT - Infraestructura de Medicina de Precisión asociada a la Ciencia y la Tecnología
- The Ovarian Tumor Tissue Analysis (OTTA)



#### LINES

- Clinical and molecular characterisation of breast, ovarian and endometrial cancer and its diagnostic, prognostic and predictive implications.

#### STRATEGIC OBJECTIVES

- To investigate the molecular disorders related to the most aggressive histological types of breast, endometrial and ovarian cancer and determine their possible role as prognostic and predictive factors. Evaluation of new treatments and therapeutic targets.

#### INDICATORS OF ACTIVITY 2023

- 5 national competitive public projects: ISCIII and FIBioHRC
- 1 competitive private project led: AECC
- 2 private projects led
- 117 clinical studies led
- 1 competitive HR agreement
- 41 publications
- IF: 354.21
- Publications in Q1: 18 (44%)
- Publications in D1: 7 (17%)
- 1 consensus document and 1 document of recommendations
- 2 implementations for lymphoma diagnosis/screening
- 1 Ramón y Cajal award given to Dr Palacios by SEAP
- Evaluator of national public agency projects: 1 PI
- National and international editorial committee member: 1 PI
- 4 visitors hosted and 11 months of stay:
  - Universidad de Alcalá
  - CEU Universidad San Pablo
  - Universidad Politécnica de Madrid
  - University Chieti-Pescara, Italia

#### NOTEWORTHY MILESTONES

1. Piloting of the CAM population screening programme for cervical cancer (CERVICAM).
2. CAM reference center for determining biomarkers using NGS in solid tumours.
3. Participation in 3 ISCIII Personalised Medicine projects.
4. Participation in the collaborative research network in cancer in the CIBERONC framework.
5. Incorporation of new researchers of the Department of Medical Oncology of Hospital Universitario Ramón y Cajal, reinforcing the group's translational capacity and opening new lines of research.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	13	38,02	2,92	7	54	1	8
2020	17	69,25	4,07	12	71	5	29
2021	17	102,25	6,01	13	76	2	12
2022	25	149,83	5,99	18	72	6	24
2023	41	354,21	10,42	27	66	7	17
	113	713,56	5,89	77	68	21	19

# Area 3

## Cancer

### Biomarkers and Personalised Approach to Cancer Group (BIOPAC)



#### GROUP COMPOSITION

##### Head

Bruno Sainz Anding  
Senior Researcher  
bsainz@iib.uam.es  
91 497 54 20

##### Principal Investigators

Bruno Sainz Anding  
Alfredo Carrato Mena

Julie Earl  
María Ángeles Vaz Salgado  
María Isabel Sánchez Pérez

##### Contributing Staff

Adrián Palencia Campos  
Ainara Soria Rivas  
Diego Navarro Vera  
Emma Barreto Melián  
Federico Longo Muñoz

Jorge Melones Herrero  
Jorge Juan Villalón López  
Juan Carlos López Gil  
Laura Martín Hijano  
Laura Ruiz Cañas  
María Reyes Ferreiro Monteagudo  
Mercedes Rodríguez Garrote  
Sonia Alcalá Sánchez



#### LOCATION

FFaculty of Medicine. Laboratory B17  
Universidad Autónoma de Madrid

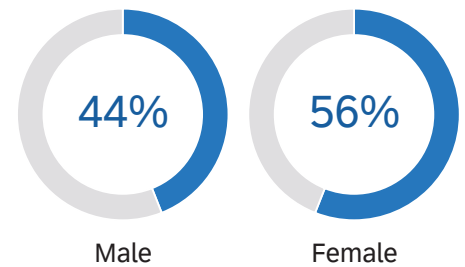


#### KEY WORDS

cancer stem cells, biomarkers, liquid biopsy, free circulating tumour DNA, National Registry of Familial Pancreatic Cancer, pancreatic ductal adenocarcinoma, stomach cancer, colorectal cancer, glioblastoma, oligodendrogliomas, sarcomas, tumour microenvironment, tumour-associated macrophages, chemoresistance, mitochondrial respiration



#### GENDER DISTRIBUTION



### Biomarkers and Personalised Approach to Cancer Group (BIOPAC)

#### NETWORKS AND ALLIANCES

- CIBER in Cancer
- CIBER in Rare Diseases
- Pancreatic Cancer Europe
- Hub Salud CIVIS, a European Civic University
- The Pancreatic Cancer Early Detection Consortium (PRECEDE)
- COST Action CA21116: TRANSPAN
- Alianza de Investigación en Cáncer de Páncreas (ALIPANC)
- Sociedad Española de Patología Digestiva (SEPD)
- Gastrointestinal Tumour Treatment (GTT) Group



#### LINES

- Identification and characterisation of new biomarkers for the early detection of cancer, treatment response and cancer stem cell detection in different solid tumours.
- Development of liquid biopsy platforms for isolating circulating cancer cells (stem cells) for their characterisation and/or free circulating tumour DNA as a marker for the early detection of cancer.
- Management of the National Registry of Familial Pancreatic Cancer (PanGen-Fam), with the biobank of samples and associated clinical data for the phenotypic and molecular characterisation of families.
- Management of the screening programme for individuals at high risk and the development of new techniques and approaches for image analysis (e.g., radiomics) for early detection.
- Identification of new genes, pathways and/or variants (i.e., potentially pathogenic mutations) associated with the risk of cancer (e.g., pancreatic, gastric, colorectal, glioblastoma and oligodendroglioma) using omic approaches, and their exploitation in personalised medicine. Study of the deregulation of gene expression in the mentioned tumours.
- Characterisation of the cell niche and tumour microenvironment, with special attention on the immune cell infiltrates such as tumour-associated macrophages (TAM).
- Development of new biomodels and in vitro and in vivo platforms for testing and discovering new therapies, such as metallodrugs, nanotechnology, siRNA and anti-CSC agents. Promotion of translation of new therapies to the clinic and participation in clinical trials with a translational component.

#### STRATEGIC OBJECTIVES

- To develop new technologies and systems for personalised medicine, focused on identifying selected drugs based on the tumour characteristics, biomarkers, and/or cancer stem cells as universal targets for aggressive tumours.
- To actively participate in national and international networks and projects in the field of cancer, with a focus on tumour biology, cancer stem cells, immune tumour microenvironment and preclinical models of cancer such as patient-derived xenografts (PDX).
- To strengthen the national and international alliances and collaborations between the business sector, the academic sector and the public health sector.
- To promote scientific and technological excellence at the European level, constituting a fundamental framework of reference in cancer-based studies.

### Biomarkers and Personalised Approach to Cancer Group (BIOPAC)

#### INDICATORS OF ACTIVITY 2023

- 4 European projects: H2020 (NANO4GLIO, VISION, NEXt, HE-PANCAID)
- 5 competitive national public projects led: ISCIII, MICINN
- 4 competitive private projects
- 2 private projects led
- 119 clinical studies led
- 8 competitive HR contracts
- 18 publications
- IF: 125.10
- Publications in Q1: 12 (67%)
- Publications in D1: 6 (33%)
- 3 supervised doctoral theses read
- 1 award
- Evaluators in public entities: 4 PIs
- Members of editorial committees: 2 PIs
- 3 visitors hosted and 2.5 months of stay:
  - Department of Propaedeutic Surgery, Athens Medical School (Grecia)
  - Pathology Department of the General Hospital of Athens "Hippocratio" (Grecia)
- 8 months stay in foreign institutions:
  - University Hospital Zurich (Zurich, Suiza)
  - Paris Lodron University of Salzburg – PLUS (Salzburg, Austria)
  - Department of Surgery, Aretaieio Hospital (Atenas, Grecia)
  - Fraunhofer Institute for Biomedical Engineering (IBMT) (Sulzbach, Alemania)

#### NOTEWORTHY MILESTONES

1. Incorporation of new researchers of the Department of Medical Oncology of Hospital Universitario Ramón y Cajal, reinforcing the group's translational capacity and opening new lines of research.
2. Strengthening of the group's international aspect. Therefore, during 2023, the European project of the Horizon Europe programme, PANCAID-101096309 "PANcreatic CAncer Initial Detection via liquid biopsy" was launched, led by Dr Alfredo Carrato and Dr Julie Earl, as well as the VESPA study, a clinical trial whose PI is Dr Mercedes Rodríguez and is encompassed in the European project of the Horizon Europe programme REMEDI4ALL-101057442.
3. ISCIII Biomodels and Biobanks Platform - Units of the ISCIII Platforms for R&D support in Biomedicine and Health Sciences (ISCIII: PT23/00098): Lead the PDXs and Organoids platforms.
4. COST Consortium: Identification of Biological Markers for Prevention and Translational Medicine in Pancreatic Cancer (TRANSPAN:CA21116).
5. EvolutiONC GI Project award given to the School of Patients with Colorectal Cancer as the best healthcare practice in managing patients with gastrointestinal tumours. The school is promoted by the Hospital's Multidisciplinary Colorectal Cancer Committee and coordinated by Dr Reyes Ferreiro.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	6	51,59	8,60	6	100	3	50
2020	11	70,19	6,38	11	100	3	27
2021	9	96,74	10,75	9	100	2	22
2022	4	68,01	17,00	4	100	3	75
2023	18	125,10	6,95	17	94	6	33
	48	411,63	9,94	47	98	17	35

# Area 3

## Cancer

### Intestinal Morphogenesis and Homeostasis Group



#### GROUP COMPOSITION

##### Head

Fernando Martín Belmonte  
Professor of Research at CSIC and  
coordinator of the Cell Architecture &  
Organogenesis Unit, Program of Tissue  
and Organ Homeostasis in the Severo  
Ochoa Molecular Biology Centre  
fmartin@cbm.csic.es  
91 196 47 21

##### Principal Investigators

Fernando Martín Belmonte  
Nuria Martínez Martín

##### Contributing Staff

Alejandra Isabel Ramos Manzano  
Gabriel Baonza Martínez  
Gonzalo Herranz Gómez  
Jonathan Ruiz García

María Velasco de la Esperanza  
Marta Iborra Pernichi  
Tamara González Martínez  
Tatiana Alfonso Pérez



##### LOCATION

Centro de Biología Molecular Severo  
Ochoa (CSIC-UAM) (lab 120)  
Universidad Autónoma de Madrid

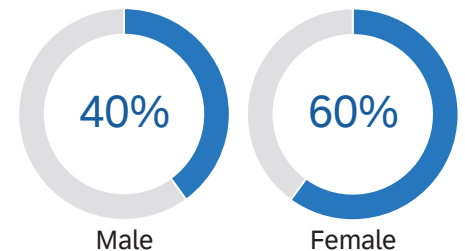


##### KEY WORDS

cell polarity, epithelia, intestine,  
morphogenesis, organoids, protein  
trafficking, cancer



##### GENDER DISTRIBUTION



### Intestinal Morphogenesis and Homeostasis Group

#### NETWORKS AND ALLIANCES

International campus of excellence (CEI-UAM + CSIC)



#### LINES

- Characterisation of the role of lysosome-rich enterocytes (LRE) in the initial stages of development, the metabolism and the effect on intestinal homeostasis.
- Cell strategy for improving drug absorption for the treatment of cancer.
- Characterisation of the role of immune B-cell metabolism in the immune response.
- Characterisation of the role of smoothelin-like 2 (SMTNL2) in the reorganisation of the cytoskeleton and in the progression of carcinoma in intestinal tissues.

#### STRATEGIC OBJECTIVES

- To address the mechanical response of intestinal cells and the orientation of the mitotic spindle in order to generate key information for treating colorectal cancer.
- To analyse the biochemical and biomechanical properties of epithelial organoids during intestinal development and address their impact on cancer development and progression, taking advantage of the organoid model “organ-in-a-chip”.
- To expand our understanding of intestinal cells and their relationship with autophagy, cell metabolism and paracellular communication, essential for intestinal development and homeostasis, and their related conditions such as colorectal cancer.
- To examine the high absorption capacity of LREs for use in facilitating the oral entry of nanocarriers to provide new approaches in administering biological drugs through biological barriers such as the intestinal tract.
- To characterise the role of metabolism as a regulator of B-cell activation and differentiation in normal physiological conditions, to then understand its role in disease and identify new biomarkers of the disease and potential therapeutic targets.

#### INDICATORS OF ACTIVITY 2023

- 2 competitive European projects led: H2020-MSCA- IF and HE-MSCA-DN
- 4 competitive national public projects: MICINN
- 2 competitive private projects led: Fundación La Caixa and AECC
- 4 competitive HR agreements
- 1 publication
- 1 award of the Huygens scientific images contest
- Evaluators of projects from national and international public agencies: 2 PIs
- Editorial committee members: 1 PI
- + 2 months of stay in external institutions
  - Molecular Biology Institute of Barcelona (IBMB)

#### NOTEWORTHY MILESTONES

1. SurfEx project. Epithelial Exchange Surfaces – From organizing principles to ex vivo disease models of the gatekeepers of the body - PI: Fernando Martín-Belmonte. EU (Horizon-MSCA-2022-DN -101119504).
2. Start of the competitive public project funded by MICINN “Exploration of Polyamine Metabolism as a Driver of Diffuse B-cell Lymphoma” (CNS2022-135636) led by Dr Martínez Martín.
3. Andrés-San Román JA, Gordillo-Vázquez C, Franco-Barranco D, Morato L, Fernández-Espartero CH, Baonza G, Tagua A, Vicente-Munuera P, Palacios AM, Gavilán MP, Martín-Belmonte F, Annese V, Gómez-Gálvez P, Arganda-Carreras I, Escudero LM. (2023) CartoCell, a high-content pipeline for 3D image analysis, unveils cell morphology patterns in epithelia. *Cell Rep Methods*. 2023 Oct 23;3(10):100597. DOI: 10.1016/j.crmeth.2023.100597. PMID: 37751739.
4. Spanish Thematic Network of the Interaction between Cell Metabolism and the Microenvironment in Homeostasis and Diseases. Coordinator Fernando Martín Belmonte. Granting body MICINN. RED2022-134927-T.
5. Professor Martín Belmonte has been appointed full professor of research at CSIC.



# Area 3

## Cancer

### Translational Haematology Group



#### GROUP COMPOSITION

##### Head

Francisco Javier López Jiménez  
jjjimenez@salud.madrid.org  
91 336 89 67

##### Principal Investigators

Francisco Javier López Jiménez  
José Valentín García Gutiérrez

##### Contributing Staff

Alejandro Luna de Abia  
Ana Lario Arribas  
Anabelle China Rodríguez  
Clara Sánchez Menéndez  
Claudia Nuñez-Torrón Stock  
Fernando Martín Moro  
Gemma Moreno Jiménez

Jesús Villarrubia Espinosa  
Juan Marquet Palomares  
Kyra Velázquez Kennedy  
M<sup>a</sup> Concepción Tenorio Núñez  
M<sup>a</sup> Jesús Blanchard Rodríguez  
M<sup>a</sup> Luisa Palacios Berraquero  
M<sup>a</sup> del Mar Meijón Ortigueira  
Miguel Piris Villaespesa  
Pilar Herrera Puente



##### LOCATION

Department of Haematology Floor 8  
Center  
Hospital Universitario Ramón y Cajal

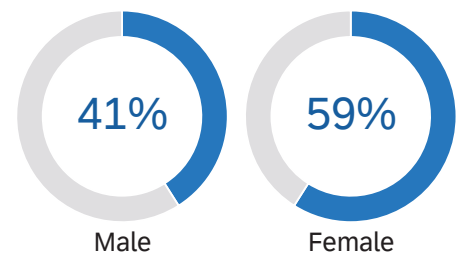


##### KEY WORDS

translational haematology,  
oncohaematology, immune reconstitution,  
cell therapy, haematopoietic stem cell  
transplantation, myeloproliferative  
neoplasia, lymphoproliferative  
syndromes, coagulopathies, transfusion  
therapy



##### GENDER DISTRIBUTION



### Translational Haematology Group

#### NETWORKS AND ALLIANCES

- International Chronic Myeloid Leukemia Foundation RiboRed
- Spanish Group for Chronic Myeloid Leukaemia
- Spanish Group for Philadelphia-Negative Myeloproliferative Neoplasia (GEMFIN)
- Hospital Clínic de Barcelona
- National Cell Therapy Network



#### LINES

- Study of the immune system in the response to pathogens in oncohaematologic diseases.
- Effect of the immune response against oncohaematologic neoplasms and its modulation by new drugs.
- Cell therapy in patients who undergo haematopoietic stem cell transplantation and non-neoplastic diseases.
- Study and prevention of cardiac dysfunction secondary to certain drugs.
- Search for predictors of response in myeloproliferative neoplasia.
- Clinical and biological characterisation (lymph node and bone marrow) of chronic B-cell lymphoproliferative syndromes.
- Implementation of genetic diagnosis in diagnosing red blood cell diseases to establish phenotype-genotype relationships.
- Development of diagnostic algorithms with serological and genetic tests that facilitate the resolution of complex immunohaematologic problems in transfusion medicine.
- Study of the long-term side effects of conventional chemotherapy and new drugs.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project H2020: RESILIENCE
- 3 competitive public projects led: ISCIII
- 3 private projects led
- 152 clinical studies led
- 42 publications
- IF: 404.51
- Publications in Q1: 22 (52%)
- Publications in D1: 11 (26%)
- 4 supervised doctoral theses read
- 1 award
- Translation: 1 protocol of use (SEHH), 3 clinical practice guidelines implemented in HURYC and 1 recommendations guideline.
- Evaluators of national institution projects: 3 PIs
- Editorial committee member: 1 PI
- 1 visitor hosted and 3 months stay:
  - Universidad Politécnica de Madrid
- 8 months stay in a foreign institution:
  - Memorial Sloan Kettering cancer center (USA)
- Impact on society: 2 actions (II Conferences of the Network of Advanced Therapies of CAM and hosting 18 Mexican haematologists: Preceptorship Visit).

#### STRATEGIC OBJECTIVES

- To find new pathways involved in the immune response against oncohaematologic diseases and infections susceptible to therapeutic intervention.
- To study therapeutic strategies in patients who undergo haematopoietic stem cell transplantation as optimisation of the graft-versus-host disease effect.
- To develop cell therapy with clinical and researcher goals with applications in medical and surgical specialties.
- To implement immunophenotypic diagnosis of haematological neoplasms for the application of targeted therapies (individualised treatment) and for improved follow-up in residual disease.
- To optimise strategies in transfusion therapy.
- To integrate multidisciplinary teams in the management of frail patients with haematological neoplasms.
- To promote multidisciplinary teams for the prevention and management of long-term complications caused by current treatments.
- To boost participation and to promote leadership in cooperative groups and national and international registries of real-world evidence.
- Fundraising from public and private entities for the support and growth of the group.

#### NOTEWORTHY MILESTONES

1. Clean Room undergoing validation for CAR-T production. Collaboration with Hospital Clínic for the decentralised production of CART ARI003 (implementation of scaled and centralised production of viral vectors for the manufacture of varnimbtagene autoleucel (var-cel) for its commercial development and international expansion (INVECTO). PMPTA22/00093.
2. Start of clinical trials with CART therapy for multiple myeloma (CARTITUDE-6) and non-Hodgkin's lymphoma (CAR T LEDA) and in collaboration with other multiple sclerosis (CA061) and ovarian carcinoma (SURPASS-3) specialties.
3. Awarding of a research project in the National Plan call (ISCIII), led by Dr Luna de Abia, entitled: "Infection in recipients of solid organ transplants: correlation with the immune function. Identification of predictive biomarkers and evaluation of feasibility with cell therapy CD45RAneg" (PI23/01924). Integration in the FORTALECE Project of IRYCIS/ISCIII, which aims to strengthen the emerging and established groups through the development of therapies and innovative actions for transference to clinical practice (FORT23/00046).
4. García-Gutiérrez V et al. Toxicity of Asciminib in Real Clinical Practice: Analysis of Side Effects and Cross-Toxicity with Tyrosine Kinase Inhibitors. Cancer (Basel). 2023 Feb 7;15(4):1045. doi: 10.3390/cancers15041045. PMID: 36831388.
5. García-Gutiérrez V et al. Regular Humoral and Cellular Immune Responses in Individuals with Chronic Myeloid Leukemia Who Received a Full Vaccination Schedule against COVID-19. Cancer (Basel). 2023 Oct 20;15(20):5066. doi: 10.3390/cancers15205066. PMID: 37894433.

### Research Groups

Nanomaterials for Bioimaging

Aptamers

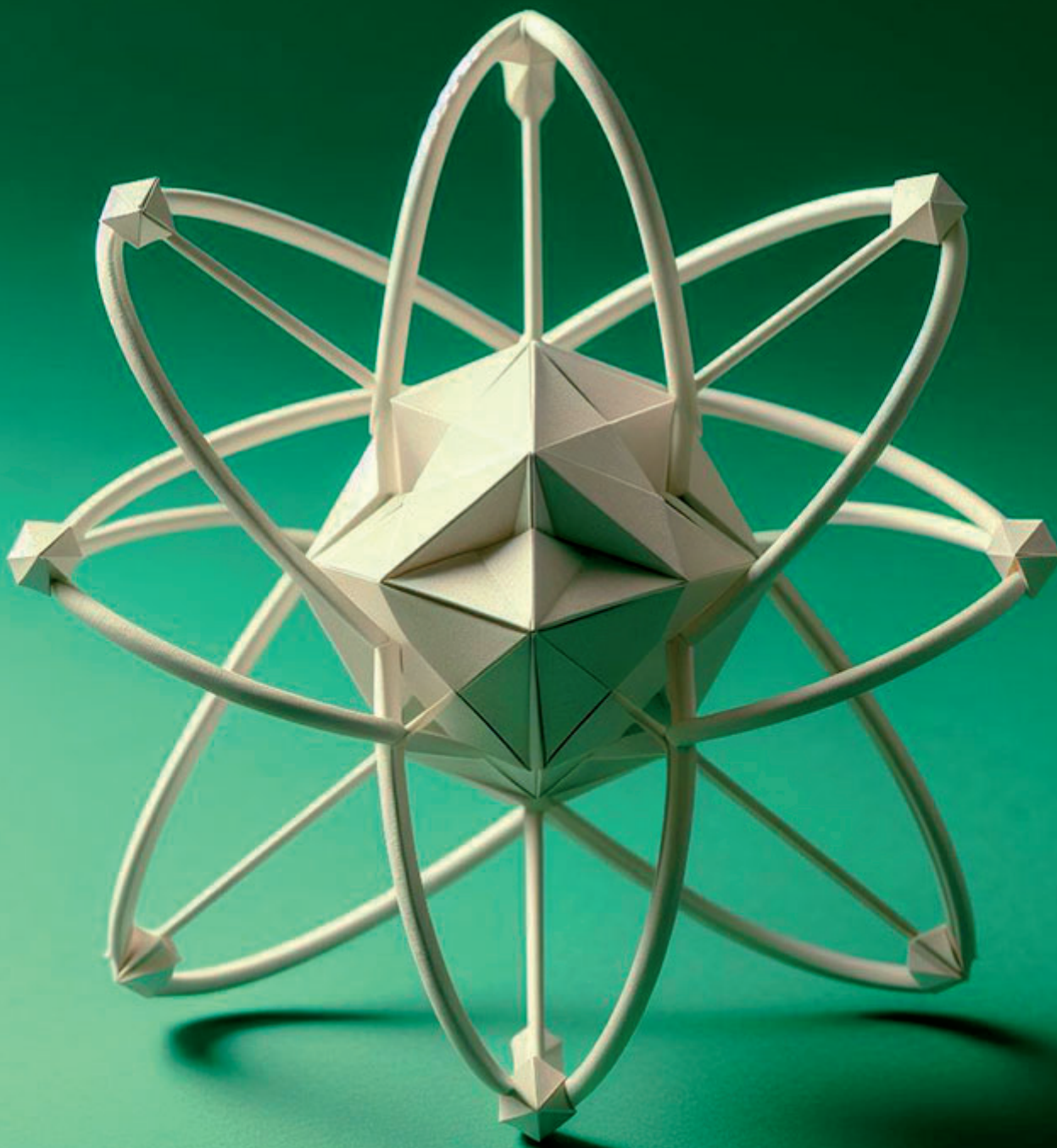
Biomarkers and Therapeutic Targets

Tissue Engineering and Regenerative Medicine

Biomedical Research in Biomaterials and Healing (GIBBYC)

Biological Chemistry

Dendrimers for Biomedical Applications



# Area 4

## Tools for Advanced Medicine

# 21

### Funding and Scientific Output in the Past 5 Years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€3,3M



R&D PROJECTS  
AND INITIATIVES

57



PUBLICATIONS

572



PUBLICATIONS  
in Q1 & Q2

82%

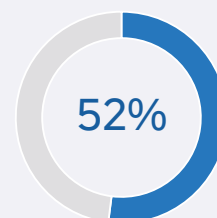
PUBLICATINOS  
headed by IRYCIS members

65%

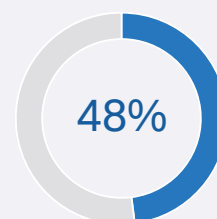
THESES  
supervised doctoral theses read

72

GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

Muñoz T, Alayeto I, **Lifante J**, **Ortgies DH**, Marin R, **Martín E**, **Iglesias de la Cruz MDC**, Lifante G, **Rubio J**, **Jaque D**. 3D Optical Coherence Thermometry Using Polymeric Nanogels. *Adv Mater.* 2023;35(33): e2301819. DOI:10.1002/adma.202301819. PMID: 37352307.

**Ortega MA**, **Fraile O**, **García C**, Haro S, **Álvarez MÁ**, De Leon D, Gomez AM, **Montserrat J**, Atienza M, **Díaz D**, Lopez E, **Álvarez M**. A comprehensive look at the psychoneuroimmunoendocrinology of spinal cord injury and its progression: mechanisms and clinical opportunities. *MILITARY MED. RES.* 2023;10(1): 26 - 26. DOI:10.1186/s40779-023-00461-z. PMID: 37291666.

**Ming L**, Zabala I, **Rodríguez P**, **Retama JR**, **Jaque D**, **Marin R**, **Ximendes E**. Neural Networks Push The Limits of Luminescence Lifetime Nanosensing. *Adv Mater.* 2023;e2306606. DOI:10.1002/adma.202306606. PMID: 37787978.

Naharros A, Caballo MÁ, **de la Mata FJ**, **García S**. Shell Formulation in Soft Gelatin Capsules: Design and Characterization. *Adv Healthc Mater.* 2023;e2302250. DOI:10.1002/adhm.202302250. PMID: 37775861.

**Milian A**, Sanchez L, **Tostado J**, **Vaquero JJ**, **Fernandez MA**, **García P**. Total Synthesis of Laetevirenol A via Regioselective Gold-Catalyzed and Acid-Promoted Cyclizations. *ADV SYNTH CATAL.* 2023. DOI: 10.1002/adsc.202301136.

# Area 4

## Tools for Advanced Medicine

### Nanomaterials for Bioimaging Group



#### GROUP COMPOSITION

##### Head

Daniel Jaque García  
Vicerrector de Política Científica y  
Catedrático de la UAM  
daniel.jaque@uam.es

##### Principal Investigators

Daniel Jaque García  
Antonio Benayas Hernández  
Emma Martín Rodríguez

Jorge Rubio Retama  
Marco Laurenti  
Nuria Fernández Monsalve

##### Contributing Staff

Álvaro Artiga Folch  
Diego Méndez González  
Dirk Ortgies  
Ely Anira Bravo Tapia  
Erving C. Ximendes

Francisco Sanz Rodríguez  
José García Solé  
José Lifante Cañavete  
Juan Pedro Cascales Sandoval  
Lyan Ming  
Luis Monge Sánchez  
M<sup>a</sup> Carmen Iglesias de la Cruz  
Miriam Granado García



#### LOCATION

Universidad Autónoma de Madrid  
Dpto de Física de Materiales  
Facultad de Ciencias  
Dpto. de Fisiología  
Facultad de Medicina

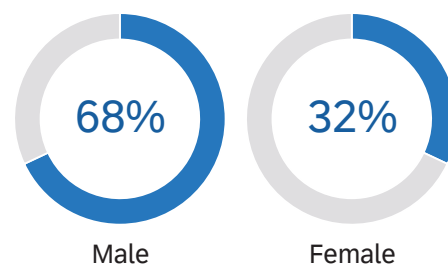


#### KEY WORDS

biomedicina, nanotecnología, bio-imagen



#### GENDER DISTRIBUTION



# Area 4

## Tools for Advanced Medicine

### Nanomaterials for Bioimaging Group

#### NETWORKS AND ALLIANCES

- COST Action CA17140: Nano2Clinic
- RENIM-CM Renim 2: S2022/BMD-7403
- Concordia University (Quebec, Canada)
- Institut National de la Recherche Scientifique (Quebec, Canada)
- Universidade Federal de Alagoas (Brazil)
- Heriot-Watt University (Scotland, UK)
- National University of Singapore (Singapore)
- University of Lyon (France)
- Shandong University (China)
- University Grenoble Alps and CRNS (Grenoble, France)
- RMIT (Royal Melbourne Institute of Technology. Melbourne, Australia)
- Instituto de Ciencias de Materiales de Madrid of CSIC
- Universidad de La Laguna



#### LINES

- Development of new luminescent nanostructures for obtaining three-dimensional images of high penetration.
- Development of new luminescent nanostructures for the development of minimally invasive therapies.
- Development of new experimental bio-imaging systems for in vivo and in vitro applications of high penetration and minimal interaction.
- Development of optical tools for handling individual cells for the study of their intracellular dynamics.
- Understanding and prediction of the toxicity phenomena of luminescent nanoparticles.
- Biocompatible nanoparticle synthesis for microRNA vehicularisation.

#### STRATEGIC OBJECTIVES

The group's strategic plan is centred on the transfer of all knowledge and known techniques on the handling of luminescent nanoparticles to fields of direct application in the field of biomedicine through the establishment of solid and actual collaborations with clinical groups

#### INDICATORS OF ACTIVITY 2023

- 9 competitive national projects led: MICINN, CAM
- 6 competitive HR contracts
- 15 publications
- IF: 159.9
- Publications in Q1: 10 (67%)
- Publications in D1: 6 (40%)
- 3 supervised doctoral theses read
- 1 award
- Evaluators of public agencies: 5 researchers
- Editorial committee members: 4 researchers
- 3 visitors hosted and 6 months of stay:
  - o Universidad de Guanajuato (México)
  - o Universidad Nacional de Ingeniería de Lima (Perú)
  - o Instituto Politécnico Nacional de México
- 5 months stay in national institutions:
  - o Instituto de Ciencia de Materiales de Madrid (ICMM) del Consejo Superior de Investigaciones Científicas (CSIC)

#### NOTEWORTHY MILESTONES

1. Success in competitive HR calls. In 2023, the group incorporated 1 "Maria Zambrano" researcher, 1 "Talent Attraction" and 1 "Juan de la Cierva" in training.
2. Every year, there are more researchers in the group who have national competitive projects as PI.
3. Three doctoral students successfully defended their theses: 1) Optical rotation of luminescent microparticles for remote sensing and manipulation; 2) Nanoparticles for cardiovascular molecular imaging by optical coherence tomography: Influence of functionalization and temperature; 3) Rare-earth doped nanoparticles for biological and sensing applications.
4. Dr José García Solé has received the prestigious award from the International Conference of Luminescence given in recognition of his applications for understanding luminescence, diffusion and photonic applications of luminescent materials.
5. Three studies published in the prestigious journal Advanced Material in the same year (10.1002/adma.202306606; 10.1002/adma.202302749, 10.1002/adma.202301819).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	10	48,86	4,89	8	80	2	20
2020	16	156,65	9,79	16	100	7	44
2021	13	197,60	15,20	11	85	7	54
2022	20	175,12	8,76	16	80	6	30
2023	15	159,90	12,30	13	87	6	40
	74	738,13	10,19	64	88	28	38

# Area 4

## Tools for Advanced Medicine

### Aptamers Group



#### GROUP COMPOSITION

##### Head

Víctor M. González Muñoz  
victor.m.gonzalez@hrc.es  
91 336 81 73

##### Principal Investigators

Víctor M. González Muñoz  
Manuel Soto Álvarez  
M<sup>a</sup> Elena Martín Palma

##### Contributing Staff

Ana García Sacristán  
Ana M<sup>a</sup> Salgado Figueroa  
Celia Pinto Díez  
Gerónimo Fernández Gómez-Chacón  
Laura Herráiz Benítez  
Ignacio Iturrieta Zuazo  
Juan Manuel Gómez Hernández  
Mariana Fuentes-Quintana Miralles

Marta García Hernández  
M<sup>a</sup> Isabel Pérez Morgado  
M<sup>a</sup> del Val Toledo Lobo  
Miriam Barragán Usero  
Raquel Ferreras Martín  
Silvia Sacristán López



#### LOCATION

Aptamer Laboratory  
Floor -1 Right  
Hospital Universitario Ramón y Cajal

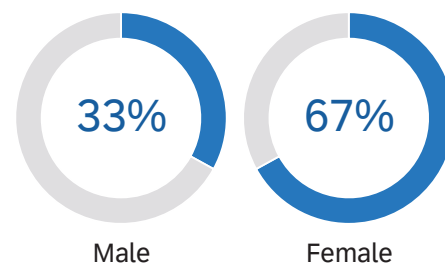


#### KEY WORDS

aptamers, diagnosis, MNK, therapy



#### GENDER DISTRIBUTION



# Area 4

## Tools for Advanced Medicine

### Aptamers Group

#### NETWORKS AND ALLIANCES

- Aptus Biotech
- RiboRed
- RICET
- Red Iberoamericana de Aptámeros (REDIBA)
- Participation in three research consortia with companies, hospitals, IIS and universities



#### LINES

- Development of aptamers with therapeutic potential.
- Development of aptamer-based diagnostic systems.
- Involvement of the kinase Mnk1b in tumorigenesis.

#### STRATEGIC OBJECTIVES

- Development of detection systems based on aptamer technology aimed at improving the diagnosis and/or prognosis of various diseases and enable better care for patients and cost savings for the health system.
- Development of aptamers for targets involved in various diseases (cancer, infections, etc.) for their use in the design of drugs that represent new therapeutic options for patients.
- Identification of new therapeutic targets in cancer.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project led: EU-LAC
- 6 competitive public projects led: ISCIII, MINECO, MICINN
- 1 competitive HR agreement
- 12 publications
- IF: 79.92
- Publications in Q1: 6 (50%)
- Publications in D1: 1 (8.3%)
- 3 supervised doctoral theses read
- Evaluators of national institution projects: 3 PIs
- Editorial committee member: 1 PI
- 7 active patent families with patent priority:
  - P201430955 “Specific aptamers of TLR4 and their potential use for treating stroke”. Entry into national phases in 15 countries
  - P201930524 “FPR2 aptamer agonists” with PCT/ES2020/070378 and entry into the national phase in the US and Europe
  - EP 18 382 888.8 “Specific aptamer agonists of the human MNK1 protein and their use as a detection method for MNK1 and as an MNK1 inhibitor” with PCT/EP2019/083547 and entry into the national phase in Europe and the US
  - EP17382610 “MAFG as a potential therapeutic target to restore chemosensitivity in platinum-resistant cancer cells” with PCTEP2018/06815 extended in the US and Europe
  - EP21382710.8 “Aptamers against the hepatitis C virus core protein” with PCT/EP2022/071188
  - EP22382616.5 “DNA aptamer conjugates recognizing and degrading coronavirus proteins”
  - EP22382617.3 DNA aptamer conjugates recognizing and degrading coronavirus proteins”
- 5 visitors hosted and 12.4 months of stay:
  - Aptus Biotech S.L.
  - Universidad Complutense de Madrid
  - Universidad de Alcalá
  - IES Benjamín Rúa
- 3 actions with societal impact (podcast, Week of Science and Innovation, lectures)



# Area 4

## Tools for Advanced Medicine

### Aptamers Group

#### NOTEWORTHY MILESTONES

1. Awarding of the first competitive European project of the group “ABSarbo”, funded in the European EU-LAC call, which seeks new biotechnology tools using aptamers against arboviruses.
2. Awarding of a research project in the National Plan call (ISCIII), led by Dr Maria Elena Martín, entitled “Study of the mechanism of action of the aptamer APMNKQ2 versus MNK1 as an antitumor drug (PID2022/142086OB-100)”.
3. Defence of 3 new doctoral theses by members of the research group, which describe the therapeutic use in cancer of aptamers developed in our laboratory.
4. Publication of the results of the phase 2a clinical study of the aptamer APTOLL, developed by the IRYCIS Aptamers Group in collaboration with Aptus Biotech (Hernandez-Jimenez et al., 2023. Safety and Efficacy of ApTOLL in Patients With Ischemic Stroke Undergoing Endovascular Treatment A Phase 1/2 Randomized Clinical Trial. JAMA Neurology. AMER MEDICAL ASSOC. 80-8, pp.779-788. <https://doi.org/10.1001/jamaneurol.2023.1660>).
5. Participation of the Aptamers CSU, consisting of the research group, providing aptamer selection services to third parties, in various project applications by research groups and companies.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	0	0,00	0,00	0	0	0	0
2020	6	24,41	4,88	5	83	1	17
2021	6	38,28	6,38	6	100	1	17
2022	8	50,99	6,34	6	75	1	12
2023	12	79,92	7,27	11	92	1	8
	32	193,61	4,97	28	70	4	11

# Area 4

## Tools for Advanced Medicine

### Biomarkers and Therapeutic Targets Group



#### GROUP COMPOSITION

##### Head

M<sup>a</sup> Laura García Bermejo  
Doctorate in Cellular Biology and Genetics  
garciabermejo@gmail.com  
91 336 80 75

##### Principal Investigators

M<sup>a</sup> Laura García Bermejo  
Carolina de la Pinta Alonso  
Elisa Conde Moreno

##### Contributing Staff

Ángela Rodríguez García-Rendueles  
Ángel Candela Toha  
Carolina Pilar Blanco Agudo  
Elena Martín García  
Esperanza Macarena Rodríguez Serrano  
Fernando Liaño García  
Konstantinos Stamatakis Andriani  
Javier del Moral Salmoral

Laura Romero Crespo  
Lorena Crespo Toro  
Manuel Collado Valero  
Miren Edurne Ramos Muñoz  
Patricia Alonso Andrés  
Sandra Villatoro Gómez



##### LOCATION

Floor 7 Right  
Hospital Universitario Ramón y Cajal

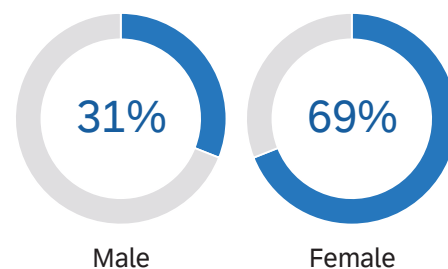


##### KEY WORDS

biomarkers, therapeutic targets, miRNAs,  
translational research, personalised  
medicine



##### GENDER DISTRIBUTION



# Area 4

## Tools for Advanced Medicine

### Biomarkers and Therapeutic Targets Group

#### NETWORKS AND ALLIANCES

- RICORS2040- Kidney diseases
- EATRIS-European Infrastructure for Translational Medicine
- ReTBioH-Biobank Network
- AMADIX
- AMPHARMA Group
- European Alliance of Medical Research Infrastructures (EU-AMRI)
- QUIBIM
- International Consortium for Personalised Medicine (ICPer-Med)
- European Partnership for Personalised Medicine (EP PerMed)
- CIFRA\_COR-CM: Consortium for the study of kidney failure and its impact on cardiovascular disease



#### LINES

- Mechanisms of development of kidney fibrosis. New biomarkers and targets of therapeutic action in chronic kidney disease.
- Mechanisms of polarisation of macrophages in nephropathies: new potential therapeutic approaches in kidney inflammation.
- Pathophysiological mechanisms in uncommon nephropathies: characterisation and new patient stratification tools.
- Pathophysiological mechanisms and new useful biomarkers in kidney cancer: stratification of patients for personalised therapy.
- miRNA as new diagnostic and prognostic biomarkers in pancreatic cancer.
- New targets of therapeutic action in pancreatic cancer: KIF3B.
- miRNAs as biomarkers in heart failure and mechanisms of cardiac remodelling.
- miRNAs as stratification tools and new targets of therapeutic action in colorectal cancer.

#### STRATEGIC OBJECTIVES

Generation and validation of useful tools for the diagnosis, prognosis, stratification and treatment of patients with various diseases

#### INDICATORS OF ACTIVITY 2023

- 3 European projects: H2020- EATRIS-Plus, HE-REMEDI4ALL, HE-EUGLOH 2.0
- 6 competitive projects led: ISCI, CAM and MICINN
- 1 FIBioHRC intramural project
- 3 competitive private innovation projects led
- 3 competitive HR agreements
- 17 publications
- IF: 107.12
- Publications in Q1: 10 (59%)
- Publications in D1: 4 (24%)
- 3 supervised doctoral theses read
- 1 award
- Project evaluator: 1 PI
- Editorial committee member: 1 PI
- 2 patent families:
  - 1 international patent application (USA and Europe) that protects miR127 as a new therapeutic target in chronic kidney disease. European Application 16382399.0
  - 1 European patent application (EP22383047.2) that protects microRNAs in colorectal cancer with application PCT/EP2023/080239
- 1 study protocol
- More than 10 activities with societal impact (encounters, interviews, debates, podcasts, day of Patient Engagement, European Researchers' Night, among others)
- 5 visitors hosted and 13 months of stay:
  - Sapienza Università di Roma (Italia)
  - UPM

#### NOTEWORTHY MILESTONES

1. Consolidation of the transference activity of the group in biomarkers of gastrointestinal tumours: i) collaboration with AMADIX, (CHALLENGES-Collaboration project) for a diagnostic kit in pancreatic cancer; ii) biomarkers of response in the repositioning of drugs in this tumour, with generic drug companies (REMEDI4ALL); iii) prognostic multimodal biomarkers (miRAmut) in colorectal cancer, including radiomic markers, in collaboration with QUIBIM (Project DTS); iv) Collaboration with Radiation Oncology and Medical Oncology. 1 doctoral thesis and incorporation of postdoctoral staff.
2. Consolidation of the research line in useful biomarkers for personalised medicine in clear cell renal cell carcinoma. Identification of molecular signatures that include non-coding RNA and radiomic parameters that predict the response to new lines of treatment in this tumour context. Collaboration with Medical Oncology and Radiation Oncology (ISCI Health project and new ISCI project application). 2 doctoral theses defended. 1 new competitive predoctoral resource (PFIS22).
3. Consolidation as a European reference group in multiomics and multimodal biomarkers, starting the development of artificial intelligence tools, through national and European projects such as EATRIS Plus, with leadership in the generation of tools such as MultiomicToolBox (<https://motbx.eatris.eu/>).
4. Consolidation as a reference group in the repositioning of drugs, through European initiatives and projects such as REMEDI4ALL, in collaboration with policy makers (EU commission), regulatory agencies (EMA) and patient organisations (PEOF, EURORDIS, POP).
5. Scientific management of the Spanish node of the Translational Medicine Infrastructure of EATRIS: European positioning of the Spanish node in EATRIS: consisting of 32 of the 35 accredited institutes, and leadership in initiatives at the national and European level of "Patient Engagement" and digital transformation of health systems.

#### BIBLIOMETRICS 2019-2023

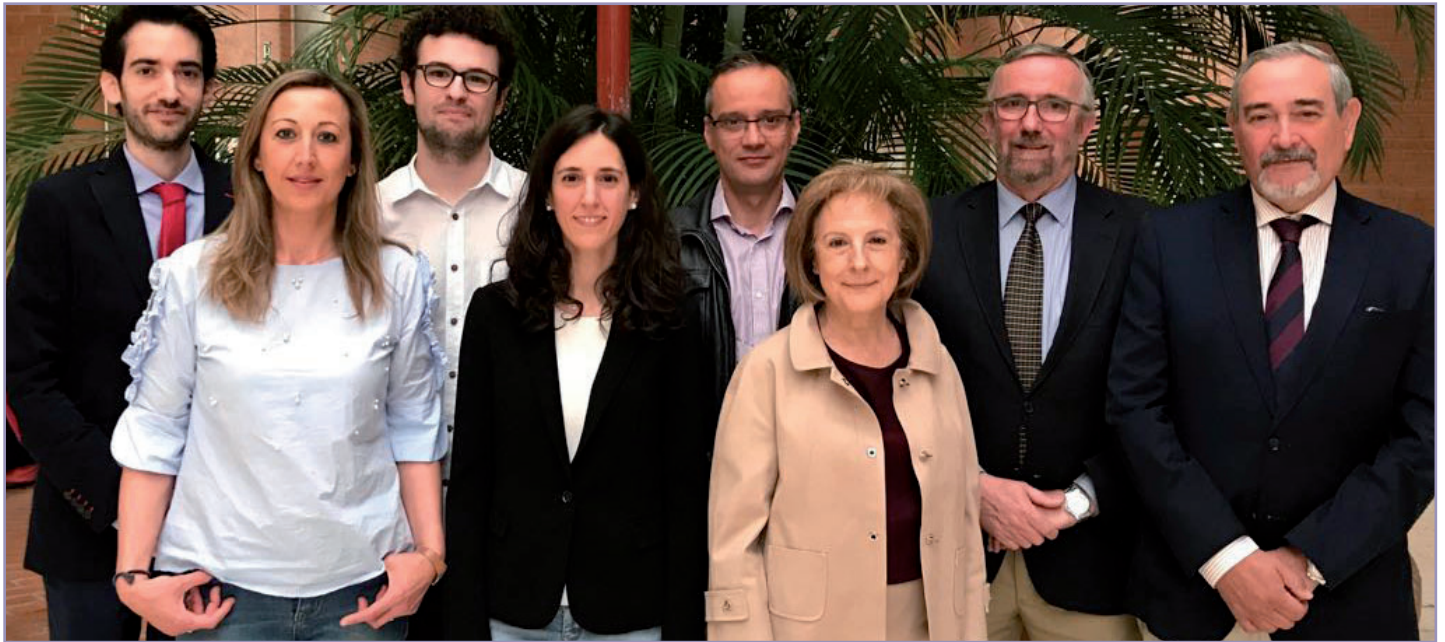
(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	11	54,90	9,15	8	73	3	27
2020	14	77,19	12,87	11	79	4	29
2021	18	93,99	15,67	14	78	3	17
2022	13	106,48	8,19	12	92	3	23
2023	17	107,12	7,14	13	76	4	24
	73	439,68	10,60	58	79	17	23

# Area 4

## Tools for Advanced Medicine

### Tissue Engineering and Regenerative Medicine Group



#### GROUP COMPOSITION

##### Head

Julia Buján Varela  
Head of Relationships with Healthcare  
Institutions and Health Policies of  
Universidad de Alcalá  
mjulia.bujan@uah.es  
91 885 45 40

##### Principal Investigators

Julia Buján Varela  
Natalio García Honduvilla

##### Contributing Staff

Alberto Haddad Riesgo  
Ángel Asunsolo del Barco  
Basilio de la Torre Escuredo  
Bianca Lago Beack  
Eduardo Sánchez-Jáuregui Alpañes  
Fernando Almeida Parra  
Julio Jesús Acero Sanz  
Luis Alberto González Guijarro  
Miguel Ángel Ortega Núñez  
Patricia de Leyva Moreno  
Pedro López Hervás  
Santiago Coca Menchero

Salud Soledad Aguado Henche  
Silvestra Barrena Blázquez  
Loreto Barrios Rodríguez  
María del Carmen Boyano Adánez  
Patricia de Castro Martínez  
Óscar Fraile Martínez  
Luis María García-Puente Mesa  
Ignacio García-Tuñón Llanio  
Laura López González  
Leonel Pekarek  
María del Mar Royuela García  
Fernando Ruiz Grande  
Miguel Ángel Sáez García



##### LOCATION

Department of Medicine and Medical  
Specialties  
Medicine and Health Sciences Bldg.  
Universidad de Alcalá  
A-2 Km 33,600  
28805 Alcalá de Henares (Madrid)

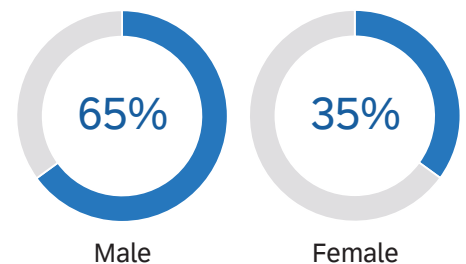


##### KEY WORDS

Tissue engineering, Regenerative  
medicine, Injury-repair, Aging,  
Biomaterials



##### GENDER DISTRIBUTION



# Area 4

## Tools for Advanced Medicine

### Tissue Engineering and Regenerative Medicine Group

#### NETWORKS AND ALLIANCES

- CIBER of Liver and Gastrointestinal Diseases



#### LINES

- Development and study of experimental models of tissue repair-regeneration.
- Study of the aging process and tissue degeneration and its clinical implications.
- Development, study and use of biomaterials as tissue substitutes.

#### STRATEGIC OBJECTIVES

- To generate and disseminate knowledge on the research lines through the implementation of projects and contracts, both public and private.
- To encourage interest and critical mass in these fields through the training of research and technical staff.
- To increase the presence of researchers in international network and European projects through collaboration with national and international groups.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive public project led: ISCIII
- 1 intramural project: FIBioHRC
- 4 private projects led
- 3 clinical studies led
- 2 competitive HR agreements
- 55 publications
- IF: 277.97
- Publications in Q1: 24 (44%)
- Publications in D1: 10 (18%)
- 2 supervised doctoral theses read
- 1 recognition of a group member
- Evaluators in public international agencies: 3 PIs
- Evaluators in national public agencies: 2 PIs
- Members of editorial committees: 2 PIs

#### NOTEWORTHY MILESTONES

1. The project entitled: "Impact of intraoperative navigation on surgical margins in locally advanced malignant tumours of the middle third of the face: correlation with the immune inflammatory response as therapeutic and prognostic target", whose PI is Dr Acero, has been recognised in the "XX Health Research Grants" of Fundación Mutua Madrileña.
2. Consolidation of the MITIC-CM Consortium of the Programme of R&D Activities in Biomedicine of the Community of Madrid (B2022/BMD-7321)
3. Dr Julio Acero incorporated as Full Member in Academia Médico Quirúrgica Española.
4. Participation in implementing the Programme Researchers and Citizens: Facing Together the European Challenges.
5. Ortega MA, Fraile O, García C, Haro S, Álvarez MÁ, De Leon D, Gomez AM, Monserrat J, Atienza M, Díaz D, Lopez E, Álvarez M. A comprehensive look at the psychoneuroimmunoendocrinology of spinal cord injury and its progression: mechanisms and clinical opportunities. MILITARY MED. RES. 2023;10(1): 26 - 26. DOI:10.1186/s40779-023-00461-z. PMID: 37291666.

#### BIBLIOMETRICS 2019-2023

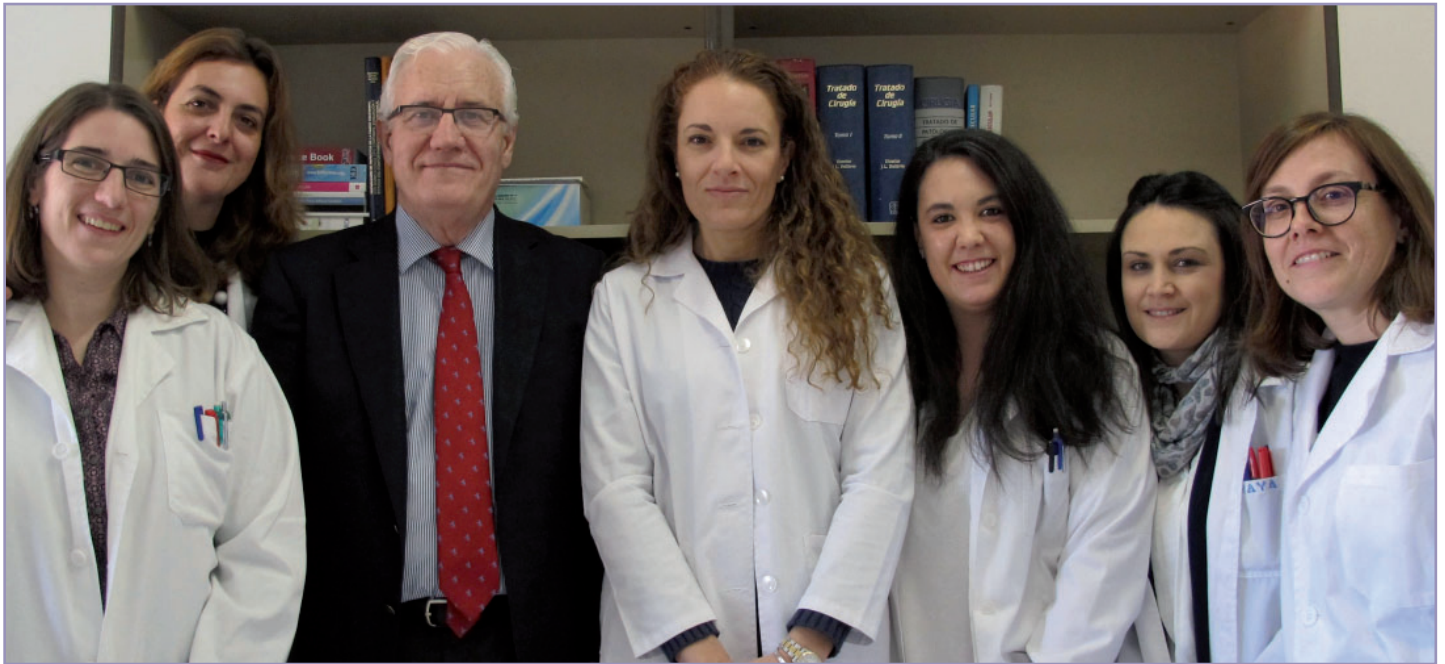
(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	13	34,6	2,88	8	62	2	15
2020	24	66,94	3,04	14	58	0	0
2021	52	212,05	4,16	44	85	3	6
2022	53	243,54	4,6	45	85	2	4
2023	55	277,97	4,6	44	80	10	18
	197	835,1	3,86	155	79	17	9

# Area 4

## Tools for Advanced Medicine

### Biomedical Research in Biomaterials and Healing (GIBBYC)



#### GROUP COMPOSITION

##### Head

María Gemma Pascual González  
gemma.pascual@uah.es  
91885 45 38

##### Principal Investigators

M<sup>a</sup> Gemma Pascual González  
Juan Manuel Bellón Caneiro

##### Contributing Staff

Selma Benito Martínez  
Francisca García-Moreno Nisa  
Bárbara Pérez Köhler  
Marta Rodríguez Mancheño



#### LOCATION

Department of Medicine and Medical Specialties and the Department of Surgery and Medical and Social Sciences. Module 5, Floor 2. Faculty of Medicine and Health Sciences  
Universidad de Alcalá. Ctra. Madrid-Barcelona, Km 33,600

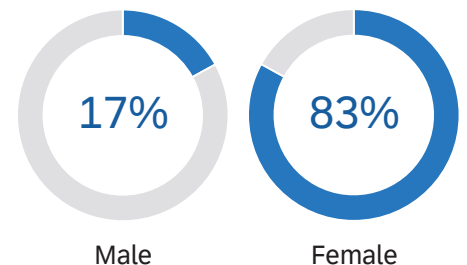


#### KEY WORDS

injury-repair of soft tissues, abdominal wall, herniogenesis, biomaterials, new prosthetic designs, infection prevention, tissue adhesives, skin, skin lesions, wound healing, animal models



#### GENDER DISTRIBUTION



# Area 4

## Tools for Advanced Medicine

### Biomedical Research in Biomaterials and Healing (GIBBYC)

#### NETWORKS AND ALLIANCES

- CIBER of Bioengineering, Biomaterials and Nanomedicine
- NANBIOSIS – Unique Scientific and Technical Infrastructure (ICTS) for the production and characterisation of nanoparticles, biomaterials and systems in biomedicine
- AO Research Institute, AO Foundation Davos
- TU Wien – Vienna University of Technology
- INSERM – French Institute of Health and Medical Research
- CovidSurg Collaborative – International platform
- ICTP-CSIC
- Universidad de Zaragoza
- CIAMIT-UPM
- NanoBioCel – Universidad del País Vasco
- BIMPS-IBEC – Instituto de Bioingeniería de Cataluña
- IQM – CSIC – Instituto de Química Médica
- ESTES SnapAppy
- MANCTRA-1



#### STRATEGIC OBJECTIVES

- To develop, analyse and preclinically validate new prosthetic materials for hernia repair and next-generation fixation methods.
- To study skin healing and preclinically evaluate the effect of various treatments on the outcome of skin lesions.
- To design and validate therapeutic and preventive strategies for optimising the use of antimicrobials in treating prosthetic and skin infections.
- To generate knowledge and clinical translation, within our research lines, through the development of public/private projects/contracts.
- To establish synergies with national and international groups, in the mechanisms of soft tissue lesion-repair, to promote collaboration and the exchange of knowledge and experiences.

#### INDICATORS OF ACTIVITY 2023

- 2 competitive national projects led: MICINN, CAM
- 1 publication
- 2 supervised doctoral theses read
- 1 recognition for the research and innovation work of Professor Juan Manuel Bellón of UAH.
- Evaluators of projects in national and international agencies: 2 PIs
- Editorial committee members: 4 group members
- 6 actions with societal impact: interviews, projects, courses, participation in the Week of Science and Innovation.
- 3 visitors hosted and 5 months of stay:
  - Washington University School of Medicine, St. Louis. EEUU
  - Universidad Nacional Autónoma de México (UNAM)
  - Escuela Profesional Superior de Madrid (EPSUM)

#### LINES

- Injury-repair of abdominal wall defects with prosthetic materials, in the presence or absence of bacterial infection.
- Skin healing in models of the repair of normal and compromised tissue, and the application of treatments for improving wound closure.



## Tools for Advanced Medicine

### Biomedical Research in Biomaterials and Healing (GIBBYC)

#### NOTEWORTHY MILESTONES

1. Start of the research project in competitive tendering “Proofs of Concepts”. State R&D programme aimed at the Challenges of Society, of the State Plan for Scientific and Technical Research and Innovation 2017-2020. Ministry of Science and Innovation. Optimisation of innovative antibacterial 3D printing gels for coating meshes for hernia repair (PDC2021-121809-100).
2. Research project in competitive tendering. “R&D Projects among Research Groups of the Community of Madrid in Biomedicine, 2022”. Community of Madrid New therapeutic solutions for treating radiated skin (RADIOPROTECT-CM; S2022/BMD-7406).
3. Reading of the doctoral thesis “Preoperative radiological markers in patients operated on for thyroid nodules. Updated systemisation and standardised classification”. Doctoral student: Sara Corral Moreno, obtaining the maximum qualification.
4. Reading of the doctoral thesis “Usefulness of the Radioguided Seed Localisation (RSL) technique in the surgery of non-palpable breast lesions”. Doctoral student: Odile Ajuria Illaramendi, obtaining the maximum qualification.
5. Membership in international groups ESTES SnapAppy (European Society for Trauma and Emergency Surgery Cohort Study Snapshot Audit 2020 - Acute Appendicitis) and MANCTRA-1 (coMpliAnce with evideNce-based cliniCal guidelines in the management of acute biliary pancreAtitis).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	9	17,02	1,89	5	56	1	11
2020	7	22,42	3,20	7	100	0	0
2021	6	25,72	4,29	6	100	0	0
2022	4	13,32	3,33	3	75	0	0
2023	1	2,90	2,90	0	0	0	0
	27	81,38	3,12	21	66,11	1	11

# Area 4

## Tools for Advanced Medicine

### Chemical Biological Group

21



#### GROUP COMPOSITION

##### Head

Juan José Vaquero López  
University Professor  
juanjose.vaquero@uah.es  
91 885 47 61

##### Principal Investigators

Juan José Vaquero López  
Estibaliz Merino Marcos  
Javier Carreras Pérez-Arados  
Manuel Ángel Fernández Rodríguez  
Patricia García García

##### Contributing Staff

Ana M<sup>a</sup> Cuadro Palacios  
Alberto Domingo Galán  
Álvaro González Molina  
Clara Mañas Hernández  
David Sucunza Sáenz  
Francisco Maqueda Zelaya  
Guillermo Germán Otárola Tejada  
Javier García Marín  
José Antonio García García  
Isabel Valencia Nieto

Jaime Mateos Gil  
Jaime Tostado Sánchez  
José Luis Aceña Bonilla  
Julia Altarejos Salido  
Marcos Humanes Bastante  
Marta Durán Martínez  
Mercedes Zurro de la Fuente  
Rafael Martín Romero Segura  
Rubén Manzano San José  
Sergio Torres Oya



##### LOCATION

Department of Organic and Inorganic  
Chemistry  
Faculty of Pharmacy  
Universidad de Alcalá

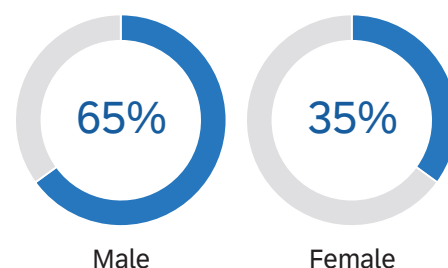


##### KEY WORDS

cell staining and bioimaging, chronic  
kidney disease, bioactive azaheterocycles  
and azaborines, metal catalysis, PET  
reagents, peptides and PNAs



##### GENDER DISTRIBUTION



#### NETWORKS AND ALLIANCES

- INTEGRATED RESEARCH NETWORK IN ORGAN FIBROSIS  
Organ fibrosis network
- INNOREN-CM– Biomedicine Programme of CAM



#### LINES

- Medical chemical strategies in kidney disease.
- Development of new inhibitors on targets involved in kidney disease (calpains, PTP1B and NIK).
- Vehicularisation of PNAs and drugs to the renal environment.
- Search for alternatives to the use of glucose in solutions for peritoneal dialysis.
- Design and study of new chromophores for multiphoton absorption with potential application in cell staining and bioimaging.
- Development of synthetic methodology for carbocycles and heterocycles of biological interest. Organocatalysis. Photocatalysis.
- Synthesis, reactivity and applications of BN-arenes.

#### STRATEGIC OBJECTIVES

The group's research activity is aimed at the design, synthesis and evaluation of small molecules of biological interest or pharmaceutical activity. To this end, we maintain collaborations with expert groups in validated and emerging targets in various therapeutic areas. The active research lines are focused on the development of new inhibitors on several targets involved in kidney disease, in the search for reagents for cell staining and bioimaging and in the development of synthetic methodology applicable to carbocycles and heterocycles of biological importance.

#### INDICATORS OF ACTIVITY 2023

- 13 competitive national public projects led: ISCIII, CAM, MICINN, UAH
- 13 competitive HR agreements
- 10 publications
- Cumulative IF: 40.6
- Publications in Q1: 6 (60%)
- Publications in D1: 2 (20%)
- 4 defended doctoral theses read
- 2 awards
- Evaluator of merits in national agency: 1 PI
- Editorial committee members: 2 PIs
- 1 patent application (P202230612) through UAH-CSIC "Solutions for peritoneal dialysis that contain a natural flavonoid as an osmotic agent"
- 3 actions with societal impact (Week of Science, Science through books and conference in the Master's Chemistry for Sustainability and Energy).

#### NOTEWORTHY MILESTONES

1. Señorans S, Valencia I, Merino E, Iglesias M, Fernández Rodríguez MA, Maya EM. Hyper-Cross-Linked Porous Polymer Featuring B-N Covalent Bonds (HCP-BNs): A Stable and Efficient Metal-Free Heterogeneous Photocatalyst. *ACS Macro Lett.* 2023, 12, 949. DOI: 10.1021/acsmacrolett.3c00217. PMID: 37384421.
2. Valencia I, Sucunza D, Mendicuti F, Garcia-Garcia P, Vaquero JJ.  $\beta$ -Functionalization of 4 a-aza-8a-boranaphthalene via Iridium-catalyzed C-H Borylation. *Adv. Synth. Catal.* 2023; 365(15), 2545-2552. DOI: 10.1002/adsc.202300408.
3. Garnes-Portoles F, Merino E, Leyva-Perez A. Mizoroki-Heck Macrocyclization Reactions at 1 M Concentration Catalyzed by Sub-nanometric Palladium Clusters. *ChemSusChem* 2023. 16, e202300200. DOI: 10.1002/cssc.202300200. PMID:37115962.
4. Research and development of new synthesis pathways for CFTR protein modulator drugs C (Project CAFTORES), led by Dr JJ. Vaquero & Dr MA. Fernández, with private funding from Justesa Imagen SA.
5. Spanish patent in the application process entitled "Peritoneal dialysis solutions containing a natural flavonoid as an osmotic agent", whose inventors are David Sucunza, Juan J. Vaquero, Manuel López Cabrera, Guadalupe Gonzalez Mateo, Valeria Kopytina. Joint holders: Universidad de Alcalá and CSIC.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	3	9,67	3,22	2	67	1	33
2020	8	30,81	3,85	7	88	1	13
2021	10	53,00	5,30	10	100	0	0
2022	11	74,54	6,78	11	100	4	36
2023	10	40,60	4,51	9	90	2	20
	42	208,62	4,73	39	93	8	19

# Area 4

## Tools for Advanced Medicine

### Dendrimers for Biomedical Applications Group



#### GROUP COMPOSITION

##### Head

Francisco Javier de la Mata de la Mata  
Professor Universidad de Alcalá  
javier.delamata@uah.es  
91 885 46 54

##### Principal Investigators

Francisco Javier de la Mata de la Mata  
Matilde Alique Aguilar  
Rafael Gómez Ramírez  
Sandra García Gallego

##### Contributing Staff

Andrea Figuer Rubio  
Clara Gómez Serrano  
Javier Sánchez-Nieves Fernández  
Jesús Cano Sierra  
Judith Recio Ruiz  
Laura Madrid González  
Marcos Hernando Gozalo  
Óscar Barrios Gumiel

Paula Ortega López  
Rafael Ramírez Chamond  
Samuel Takvor Mena  
Sandra Sánchez Esteban  
Silvia Moreno Pinilla  
Silvia Muñoz Sánchez



#### LOCATION

Department of Organic and Inorganic  
Chemistry  
Faculty of Pharmacy  
Universidad de Alcalá

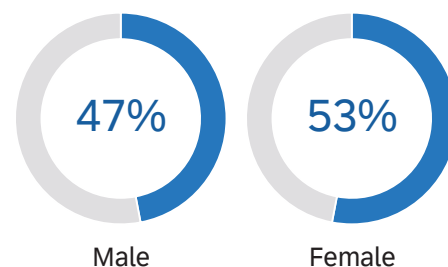


#### KEY WORDS

dendrimers, dendron, nanoparticles,  
hydrogels, carbosilane, biomedicine,  
cancer, HIV, microbial resistance



#### GENDER DISTRIBUTION



## Tools for Advanced Medicine

### Dendrimers for Biomedical Applications Group

#### NETWORKS AND ALLIANCES

- Network of Dendrimers For Biomedical Applications CTQ2017-90596-REDT
- BerliMed S.L.



#### LINES

- Synthesis of carbosilane dendritic systems for their application as nonviral vectors for drugs or nucleic acids or as therapeutic agents.
- Dendronisation of molecules of pharmacological importance (drugs, peptides, antibodies, etc.)
- Preparation of carbosilane metallodendritic systems aimed at bioinorganic applications.
- Dendronisation of nanostructured materials for application in biomedicine.
- Dendritic nanogel synthesis for drug encapsulation.
- Application of dendritic systems against microbial resistance.
- Application of dendritic systems against viruses, particularly HIV.
- Applications of dendritic systems against cancer.
- Applications of dendritic systems against neurodegenerative diseases.

#### STRATEGIC OBJECTIVES

- To synthesise a dendritic systems platform able to act as nonviral vectors in transporting drugs and nucleic acids.
- To synthesise a dendritic systems platform with therapeutic activity per se, against cancer and microbial diseases and as antiviral agents.
- To establish collaborations with groups belonging to the Institute that might have research interests common to our group.
- To participate in applying for European projects for which the Institute could be eligible.

#### INDICATORS OF ACTIVITY 2023

- 13 competitive public projects: ISCIII, MICINN, CAM, CAM-UAH and UAH
- 1 private project led
- 8 competitive HR contracts
- 20 publications
- IF: 106.52
- Publications in Q1: 15 (75%)
- Publications in D1: 2 (10%)
- Project evaluators: 4 PIs
- Members of editorial committees: 3 researchers
- 3 patents
- 5 months stay in foreign institutions:
  - University: Freie Universitat Berlín (Germany)
  - Western University London (Canada)

#### NOTEWORTHY MILESTONES

1. Start of the competitive public project in the framework of the call for R&D programmes in biomedicine 2022 of CAM: New therapeutic solutions for treating radiated skin. Ref. CAM\_Radioprotect\_P2022/BDM-7406.
2. Incorporation of Dr Silvia Moreno as distinguished researcher "Beatriz Galindo Junior". Dr Moreno has extensive international experience in the field of macromolecular chemistry for biomedical applications.
3. Consolidation of the research line established with the pharmaceutical company Berlimed S.L through formalisation of a new Industrial Doctorate co-financed by the Community of Madrid.
4. Sandra García-Gallego et al. Shell Formulation in Soft Gelatin Capsules: Design and Characterization. Advanced Healthcare Materials 2023. DOI: 10.1002/adhm.202302250. PMID: 37775861.
5. 1 patent awarded ES2932900- "Extraction and purification of proteins with magnetic nanoparticles stabilised with carbosilane dendritic systems", 1 patent requested EP23383337-"Stable soft capsule preparations with solid fill for moisture-sensitive active ingredients" and a PCT extension ES2940914B2-"Hydrogels with carbosilane dendritic domains, their preparation and uses".

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	20	88,94	4,45	19	95	1	5
2020	32	141,92	4,43	32	100	4	13
2021	16	83,21	5,20	15	94	3	19
2022	18	119,13	6,62	18	100	3	17
2023	20	106,52	6,27	17	85	2	10
	106	539,72	5,39	101	95	13	12

### Research Groups

Lipid Metabolism

Diabetes, Obesity and Human Reproduction

Respiratory Diseases

Paediatric research

Cardiovascular Diseases

Endocrine-Metabolic and Gastrointestinal Surgery and Nutrition

Multisystem Diseases

Geriatric research

Liver and Gastrointestinal Diseases

Surgical Research in Urology and renal Transplantation Physiology and Renal and Vascular physiopathology

Diagnosis and Treatment of Allergic Diseases



# Área 5

## Chronic pathologies and surgery research

# 21

### Funding and scientific output in the past 5 years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€12,5M 

R&D PROJECTS  
AND INITIATIVES

616 

PUBLICATIONS

2.077 

PUBLICATIONS  
in Q1 & Q2

66%

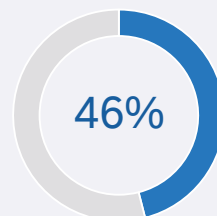
PUBLICATIONS  
headed by IRYCIS members

50%

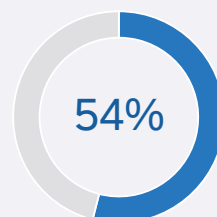
DOCTORAL theses  
(supervised) read

64

### GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

**Guerrero A, Campo LD, Piscaglia F, Scheiner B, Han G, Violi F, Ferreira CN, Téllez L, Reiberger T, Basili S, Zamora J, Albillos A, Baveno Cooperation:** an EASL C. Anticoagulation improves survival in patients with cirrhosis and portal vein thrombosis: The IMPORTANT competing-risk meta-analysis. *J Hepatol.* 2023;79(1): 69 - 78. DOI: 10.1016/j.jhep.2023.02.023. PMID: 36858157.

González D, Navarro P, Muñoz JI, Sánchez L, Henriques A, **de-Andrés A, Peralta D,** Mayado A, Jara M, García AC, Orfao A, Álvarez I. Clinical impact of the TPSAB1 genotype in mast cell diseases: A REMA study in a cohort of 959 individuals. *Allergy.* 2023; DOI: 10.1111/all.15911. PMID: 37818990

Arteagoitia A, **Monteagudo JM,** Mahia P, Pérez E, González T, Sitges M, Li CH, Alonso D, Carrasco F, Luna M, Adeba A, de la Hera JM, **Zamorano JL.** Determinants of Tricuspid Regurgitation Progression and Its Implications for Adequate Management. *JACC Cardiovasc Imaging.* 2023; DOI: 10.1016/j.jcmg.2023.10.006. PMID: 38069980

Millán M, **Luque M, Nattero L, Escobar HF.** PCOS during the menopausal transition and after menopause: a systematic review and meta-analysis. *Hum Reprod Update.* 2023;29(6): 741 - 772. DOI: 10.1093/humupd/dmad015. PMID: 37353908

**Jiménez D,** Tapson V, Yusen RD, Becattini C, Moores L, Barnes GD, Monreal M, Konstantinides S, Bikdeli B. Revised Paradigm for Acute Pulmonary Embolism Prognostication and Treatment. *Am J Respir Crit Care Med.* 2023;208(5): 524 - 527. DOI: 10.1164/rccm.202212-2234VP. PMID: 37450886.

# Area 5

## Chronic pathologies and surgery research

### Lipid Metabolism Group



#### GROUP COMPOSITION

##### Head

Diego Gómez-Coronado Cáceres  
diego.gomez@hrc.es  
91 336 80 77, 91 336 86 84

##### Principal Investigators

Diego Gómez-Coronado Cáceres  
Antonia Martín Hidalgo  
Javier Martínez-Botas Mateo  
Óscar Pastor Rojo  
Rebeca Busto Durán

##### Contributing Staff

Carlos Fernández Lozano  
Diana María Arrebola Mesa  
Francisco Jesús Arrieta Blanco  
Irene Chavarría Cubel  
Karla Belén Cevallos Ibarra  
Gema de la Peña Martín  
Gonzalo Muñoz Ulzurrun de Asanza  
Miguel Ángel Lasunción Ripa  
Milagros Lerma Fernández

Nadia Alonso Recio  
Sara Poyatos Peláez  
Tamara Villanueva Blanco



##### LOCATION

Biochemical-Research Laboratories  
Floor S1 Right  
Hospital Universitario Ramón y Cajal

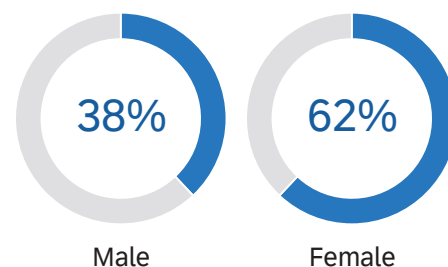


##### KEY WORDS

cholesterol, ceramides, lipid metabolism, cell proliferation, food allergy, intracellular trafficking of lipids, male fertility, HDL, genetic expression, lipidomics, non-alcoholic fatty liver disease (NAFLD), selective oestrogen receptor modulators (SERM), antipsychotics, hypocholesterolemic agents



##### GENDER DISTRIBUTION





# Area 5

## Chronic pathologies and surgery research

### Lipid Metabolism Group

#### NETWORKS AND ALLIANCES

- Clinical Lipidomics Interest Group (CLIG-Trial)



#### LINES

- Cholesterol activity in cell proliferation
- Food allergies
- Effects of amphiphilic amine drugs on lipid homeostasis
- Intracellular lipid trafficking disorders
- Effects of impaired lipid metabolism on male fertility
- HDL functionality and its disorders
- Regulation of gene expression in obesity and its relationship to lipid metabolism
- Lipidomics applied to the study of disease-associated metabolic disorders

#### STRATEGIC OBJECTIVES

To study lipid metabolism, especially cholesterol, in physiology and pathology, in order to establish the biological role of certain lipids, identifying the mechanisms and designing strategies with therapeutic potential.

#### INDICATORS OF ACTIVITY 2023

- 3 competitive national public projects led: ISCIII, Instituto Tecnológico de Santo Domingo
- 1 private project led
- 1 observational study led
- 4 competitive HR agreements
- 22 publications
- IF: 111.92
- Publications in Q1: 15 (68%)
- Publications in D1: 2 (9%)
- Evaluators of national public agencies: 6 researchers
- Editorial committee members: 2 researchers
- Protection of a method for predicting the efficacy of oral immunotherapy for treating cow milk protein allergy. Patent family internationally extended to 5 countries
- 1 consensus document
- 1.5 month stay in foreign institutions
  - Yale School of Medicine (United States)
- 5 visitors hosted and 19 months of stay:
  - IES Benjamín Rúa
  - IES las Musas
  - IES OPESA
  - IMIBIC, Córdoba
  - Universidad de Alcalá

#### NOTEWORTHY MILESTONES

- MiRNA-7 controls cholesterol biosynthesis through posttranscriptional regulation of DHCR24 expression (Fernández-de Frutos et al. "MiR-7 controls cholesterol biosynthesis through posttranscriptional regulation of DHCR24 expression" *Biochim Biophys Acta Gene Regul Mech.* 2023 Jun;1866(2):194938. DOI: 10.1016/j.bbagr.2023.194938. PMID: 37086967)
- The functional characterisation of the apolipoprotein B variant p.(Lys3344Glu) has revealed that the variant is pathogenic, while the variant p.(Ser3801Thr), whose significance until now has been uncertain, is benign (Rodríguez-Jiménez et al. Identification and Functional Analysis of APOB Variants in a Cohort of Hypercholesterolemic Patients. *Int J Mol Sci.* 2023 Apr 21;24(8):7635. DOI: 10.3390/ijms24087635. PMID: 37108800)
- Dihydroceramide concentration is correlated to the progression of metabolic dysfunction-associated steatotic liver disease in patients and animal models (Babiy et al. Dihydroceramides are associated with steatosis and increased fibrosis damage in non-alcoholic fatty liver disease. *Biochim Biophys Acta Mol Cell Biol Lipids.* 2023 Jul;1868(7):159318. DOI: 10.1016/j.bbalip.2023.159318. PMID: 37059386)
- The trials of lymphocyte proliferation and cytokine secretion helped identify the drugs responsible for skin lesions during SARS-CoV-2 infection (Fernández-Lozano et al. Value of the Lymphocyte Transformation Test for the Diagnosis of Drug-Induced Hypersensitivity Reactions in Hospitalized Patients with Severe COVID-19. *Int J Mol Sci.* 2023 Jul 17;24(14):11543. DOI: 10.3390/ijms241411543. PMID: 37511302)
- Obesity induces changes in lipid homeostasis in mice testicles, affecting HSL expression, the lipid receptors/transporters (SR-BI, LDL receptor and ABCA1) in the cell membrane and the concentration of spermatozoa (Project PI16/00154, ISCIII).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	21	101,66	4,84	18	86	7	33
2020	22	108,55	4,93	15	68	3	14
2021	25	133,92	5,36	20	80	5	20
2022	21	158,84	7,56	16	76	3	14
2023	22	111,92	5,89	17	77	2	9
	111	614,89	5,72	86	77	20	18

# Area 5

## Chronic pathologies and surgery research

### Diabetes, Obesity and Human Reproduction Group



#### GROUP COMPOSITION

##### Head

Héctor F. Escobar Morreale  
Department head of Endocrinology and Nutrition  
Professor at Universidad de Alcalá  
hectorfrancisco.escobar@salud.madrid.org  
91 336 90 29

##### Principal Investigators

Héctor F. Escobar Morreale  
Manuel Luque Ramírez  
M<sup>a</sup> Lía Nattero Chávez

##### Contributing Staff

Andrés Eduardo Ortiz Flores  
Ane Bayona Cebada

Elena Fernández Durán  
Francisco Álvarez Blasco  
José Luis San Millán López  
María Alejandra Quintero Tobar  
María Ángeles Martínez García  
María Rosa Insenser Nieto  
Sara de Lope Quiñones



##### LOCATION

Laboratory of the Research Group in Diabetes, Obesity, and Human Reproduction. Floor 2 Centre / Rear Hospital Universitario Ramón y Cajal

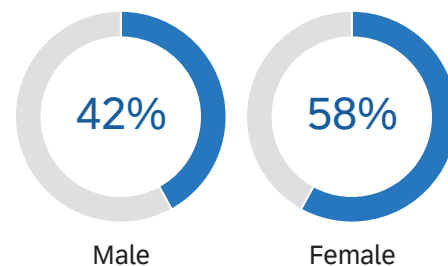


##### KEY WORDS

reproductive endocrinology, androgens, oestrogens, diabetes, obesity, intermediary metabolism, polycystic ovary syndrome, hypogonadism



##### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Diabetes, Obesity and Human Reproduction Group

#### NETWORKS AND ALLIANCES

- CIBER of Diabetes and Associated Metabolic Diseases
- European Society of Endocrinology – Polycystic Ovary Syndrome Special Interest Group (PCOS SIG)
- Androgen Excess & Polycystic Ovary Syndrome Society (AE-PCOS)



#### LINES

- Evolution of obesity-associated female androgen excess after weight loss.
- Evolution of obesity-associated male hypogonadism after weight loss.
- Influence of obesity and gonadal dysfunction on markers of early cardiovascular disease and markers of cardiovascular risk.
- Obesity as a cardiovascular risk factor in women and men.
- Influence of the treatment of gonadal dysfunction in both sexes (polycystic ovary syndrome or functional hypogonadotropic hypogonadism) on visceral adiposity and metabolic dysfunction.
- Sexual dimorphism of cardiac autonomic neuropathy in participants with type 1 diabetes mellitus.

#### STRATEGIC OBJECTIVES

- To lead the approach of sex/gender medicine towards highly prevalent metabolic diseases in Spain.
- To lead transferable research in reproductive endocrinology and intermediary metabolism.
- To lead the transfer of scientific knowledge to clinical practice in reproductive endocrinology.

#### INDICATORS OF ACTIVITY 2023

- 3 competitive national projects: ISCIII
- 6 clinical studies led
- 1 competitive HR agreement
- 16 publications
- IF: 82.60
- Publications in Q1: 8 (50%)
- Publications in D1: 7 (44%)
- 2 supervised doctoral theses read
- Evaluators of public agencies: 4 PIs
- Editorial committee members: 2 PIs
- A European patent application EP19382836.5 entitled "Combined therapy comprising an inhibitor of interleukin-17 activity and a vitamin D receptor agonist", with PCT/EP2020/077227 and European national phase EP20785714.5
- 1 document with recommendations (PubMed Id.: 37359897)
- 1 action with impact on society: Science Week of Madrid.

#### NOTEWORTHY MILESTONES

1. Awarding to Dr Nattero of the projects "Impact of the menstrual cycle on the control of type 1 diabetes mellitus in women of childbearing age who carry an advanced closed-loop system" funded by the Ministry of Science, Innovation and Universities and "Non-alcoholic fatty liver disease in individuals with type 1 diabetes" funded by CIBERDEM.
2. Dr Escobar's participation in the drafting of the "Recommendations for the measurement of sex steroids in clinical practice". The positioning document reviews the current state of standardising the methods for measuring oestradiol and testosterone and its repercussion on various clinical situations (Adv Lab Med. PubMed Id.: 37359897).
3. Millán N, Luque M, Nattero I, Escobar HF. PCOS during the menopausal transition and after menopause: a systematic review and meta-analysis. Hum Reprod Update. 2023;29(6):741-772. DOI: 10.1093/humupd/dmad015. PMID: 37353908. This study confirms that the clinical and biochemical characteristics of women with polycystic ovary syndrome (PCOS) persist during and after menopause, showing significant cardiometabolic associations.
4. Escobar HF, Martínez MÁ, Insenser M, Cañellas N, Correig X, Luque M. Serum metabolomics profiling by proton nuclear magnetic resonance spectroscopy reveals sexual dimorphism and masculinization of intermediate metabolism in women with polycystic ovary syndrome (PCOS). Biol Sex Differ. 2023;14(1): 21 - 21. DOI:10.1186/s13293-023-00507-w. PMID: 37076926. This study analyses the differences in the metabolomic profile between women (with and without polycystic ovaries) and men. The results showed a sexual dimorphism and a masculinisation of the intermediary metabolism in women with PCOS.
5. Awarding of a PFIS contract, under the direction of Dr Nattero with which the doctoral thesis entitled "Sexual dimorphism and inflammatory biomarkers in patients with type 1 diabetes mellitus and cardiac autonomic neuropathy" is developed.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	15	61,25	4,08	12	80	3	20
2020	10	44,07	4,41	9	90	1	10
2021	16	128,57	8,04	13	81	3	19
2022	13	67,69	5,21	7	54	1	8
2023	16	82,60	6,35	9	56	7	44
	70	384,18	5,62	50	72	15	20

# Area 5

## Chronic pathologies and surgery research

### Respiratory Diseases Group



#### GROUP COMPOSITION

##### Head

David Jiménez Castro  
Department Head. Department of  
Pulmonology  
djimenez.hrc@gmail.com 91 336 81 33

##### Principal Investigators

David Jiménez Castro  
Deisy Barrios Barrieto  
Irene Micaela Cano Pumarega

##### Contributing Staff

Agustina Vicente Bártulos  
Aurora Solier López  
Eva Mañas Baena  
Javier Gaudó Navarro  
Jesús Corres González  
Juan Abelardo Rigual Bobillo

Luis M<sup>a</sup> Maiz Carro  
Raquel Morillo Guerrero  
Rosa Nieto Royo  
Laura Pozuelo Sánchez  
Carmen Rodríguez Calle  
Aldara García Sánchez  
José Andrés Tenes Mayen  
Esther Barbero Herranz



##### LOCATION

Department of Pulmonology. Floor 5 Left  
Hospital Universitario Ramón y Cajal

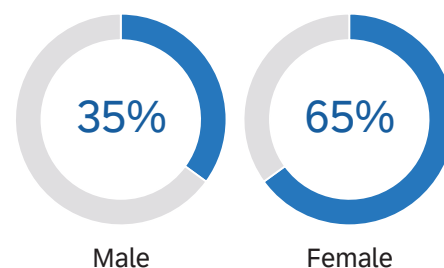


##### KEY WORDS

respiratory diseases, bronchial asthma,  
bronchiectasis, chronic obstructive  
pulmonary disease, cystic fibrosis,  
pulmonary thromboembolism,  
noninvasive mechanical ventilation



##### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Respiratory Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER of Respiratory Diseases
- EPENET
- RIETE registry
- RIBRON
- PII TEP SEPAR
- INVENT - International Network of Clinical VTE Research Networks



#### LINES

- Venous thromboembolism disease.
- Bronchiectasis, cystic fibrosis and chronic bronchial infection. Bronchial infection by Pseudomonas aeruginosa and fungal respiratory colonisation.
- Acute and chronic respiratory failure. Noninvasive mechanical ventilation. High-flow oxygen therapy and ambulatory oxygen therapy.
- Bronchial asthma. Chronic cough
- COPD Self-care in COPD. Respiratory rehabilitation.

#### STRATEGIC OBJECTIVES

The objective is to design and lead scientific projects that advance pulmonology and that have a positive impact on the health of patients with respiratory diseases.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European public project led: HE MORPHEUS
- 4 competitive national public projects led: ISCIII
- 2 competitive private projects led: Merck Health & Caixa Research Health
- 9 clinical studies led
- 37 publications
- IF: 281.11
- Publications in Q1: 27 (73%)
- Publications in D1: 4 (11%)
- 1 research award to the best international publication
- Evaluator of scientific projects and communications: 1 PI
- Member of editorial committees: 1 PI
- 1 consensus document

#### NOTEWORTHY MILESTONES

1. Dr Jiménez has acted as coordinator of the healthcare process for the management of pulmonary thromboembolism (PTE) in the Community of Madrid. Furthermore, he has been recognised as the second leading expert worldwide on the management of PTE.
2. Achievement of the first competitive European project led by the research group: "MORPHEUS. Prognosis improvement of unprovoked venous thromboembolism using personalized anticoagulant therapy". Applied for and granted in the HORIZON-HLTH-2022-TOOL-11 call and funded by the Horizon Europe Research Framework Programme.
3. Obtaining the first CaixaResearch Health grant for Health Research from Fundación "La Caixa" in IRYCIS to fund the project "Registry-based randomized trial to determine the role of Oxygen in acute Pulmonary Embolism. Clinical trial ROPE". Project to assess whether the administration of supplemental oxygen improves the prognosis of patients with pulmonary thromboembolism.
4. Defence of three new doctoral theses by members of the research group, classified as Outstanding Cum Laude, in which pulmonary thromboembolism is approached with different perspectives.
5. The research group are simultaneously implementing three research projects for the National Plan call (ISCIII), led by Dr Irene Cano (PI22/01688), Dr David Jiménez (PI20/00369) and Dr Deisy Barrios (PI18/00172).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	56	315,53	5,63	41	73	11	20
2020	61	414,66	6,80	51	84	16	26
2021	51	497,78	9,76	43	84	13	25
2022	50	490,70	9,81	46	92	15	30
2023	37	281,11	7,60	31	84	4	11
	255	1999,78	7,92	212	83	59	23

# Area 5

## Chronic pathologies and surgery research

### Cardiovascular Diseases Group



#### GROUP COMPOSITION

##### Head

José Luis Zamorano Gómez  
Head of the Cardiology Department  
zamorano@secardiologia.es  
91 336 85 15

##### Principal Investigators

José Luis Zamorano Gómez  
Antonio Hernández Madrid  
Carlos Zaragoza Sánchez  
Javier Angulo Frutos  
Marcelo Sanmartín Fernández  
Marta Saura Redondo  
Rocío Hinojar Baydes

##### Contributing Staff

Ana García Martín  
Ana Pardo Sanz  
Ángel Sánchez Recalde  
Ariana González Gómez

Beatriz Jiménez Guirado  
Claudia González Cucharero  
Clemencia de Rueda Panadero  
Covadonga Fernández-Golfín Lobán  
Cristina García Sebastián  
David Cordero Pereda  
Eduardo Franco Díez  
Eduardo González Ferrer  
Elisa Velasco Valdazo  
Ignacio Hernández Navarro  
Irene Carrión Sánchez  
Javier Díez Mata  
Javier Moreno Planas  
Jesús Álvarez García  
José Julio Jiménez Nacher  
José Luis Mestre Barceló  
Juan Manuel Monteagudo Ruiz  
Laura Botana Veguillas  
Laura Tesoro Santos  
Luis Manuel Domínguez Rodríguez

M<sup>a</sup> Ascensión Sanromán Guerrero  
M<sup>o</sup> Carmen de Pablo Zarzosa  
M<sup>a</sup> Luisa Salido Tahoces  
Manuel Jiménez Mena  
Marta Jiménez-Blanco Bravo  
Miguel Cayetano Amores Luque  
Miguel Castillo Orive  
Nunzio Alcharani de Simone  
Paloma Remior Pérez  
Pilar Agudo Quilez  
Rafael Ramírez Carracedo  
Roberto Matía Francés  
Sandra González Martín  
Sara Fernández Santos  
Sara Jorquera Ortega  
Simón Novo Flores  
Susana del Prado Díaz  
Vanessa Cristina Lozano Granero  
Vivencio Barrios Alonso



#### LOCATION

Department of Cardiology. Floor 2 Left.  
Hospital Universitario Ramón y Cajal

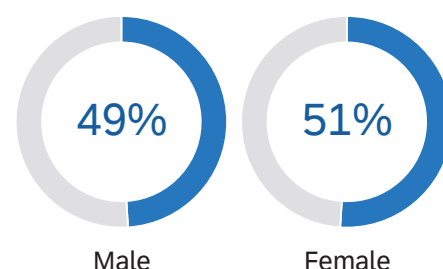


#### KEY WORDS

alve regurgitation, acute coronary syndrome, heart failure, software, cardiovascular imaging, molecular imaging, new technologies, arrhythmias, endothelial dysfunction, biomarkers, cardiac rehabilitation, ubiquitin-proteasome



#### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Cardiovascular Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER of Cardiovascular Diseases
- REDINSCOR



#### LINES

- Imaging techniques in heart valve disease and structural heart disease.
- Ischemic heart disease and structural damage: new biomarkers, molecular imaging and precision medicine.
- Development of new therapies in cardiac arrhythmias.
- Cardiovascular epidemiology, risk factors and rehabilitation.

#### STRATEGIC OBJECTIVES

- To improve our knowledge of cardiovascular diseases, one of the main causes of mortality in developed countries, using a translational basic-clinical research approach.
- To explore the development of new medical imaging technologies and identify and validate biomarkers of diagnosis, prognosis, prevention and treatment response.

#### INDICATORS OF ACTIVITY 2023

- 2 European projects: H2020 (RETENTION) & HE (STRATIFY)
- 6 national public projects: ISCIII and MICINN
- 8 private projects led
- 47 clinical studies led
- 86 publications
- IF: 567.62
- Publications in Q1: 42 (49%)
- Publications in D1: 15 (17%)
- 3 supervised doctoral theses read
- 3 awards/recognitions
- Editorial committee members: 5 researchers
- 1 international patent (EP11845312,5) "Possible use of EMMPRIN inhibitors for treating cardiac damage after ischaemia-reperfusion". (Authors: Dr Carlos Zaragoza et al.) and another in the request phase
- 7 consensus documents and 1 recommendations guide

#### NOTEWORTHY MILESTONES

1. Dr José Luis Zamorano recognised as Highly Cited Researcher (HCR) in the field of Clinical Medicine 2023. Clarivate Analytics.
2. Start of the competitive European project "STRATIFY-HF: Artificial intelligent-based decision support system for risk stratification and early detection of heart failure in primary and secondary care". Applied for and granted in the HORIZON-HLTH-2022-STAYHLTH-01-two-stage call and funded by the Horizon Europe Research Framework Programme.
3. Only public Spanish centre with more than 500 ablations annually in the Arrhythmias Unit, headed by Dr Javier Moreno.
4. Implementation of the ApSTEMI study (A double-blind, placebo-controlled, randomized, Phase II clinical study of ApTOLL for the treatment of ST Elevation Myocardial Infarction), with Dr Zamora as national coordinator and Dr Marcelo Sanmartín as PI in our centre.
5. Transversal research line of the department headed by Dr Rocío Hinojar. International leaders in percutaneous treatment of tricuspid regurgitation, with 37 Cardiobands implanted in the Haemodynamics Unit, directed by Dr Angel Sánchez Recalde.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	73	427,45	5,86	40	55	14	19
2020	87	372,38	4,28	48	55	14	16
2021	95	637,15	6,71	73	77	20	21
2022	102	999,40	9,80	74	73	30	29
2023	86	567,62	6,60	64	74	15	17
	443	3004,00	6,65	299	67	93	21

# Area 5

## Chronic pathologies and surgery research

### Paediatrics Group



#### GROUP COMPOSITION

<b>Head</b> M <sup>a</sup> Jesús del Cerro Marín Head of the Paediatric Cardiology Department mjesus.cerro@salud.madrid.org 91 336 90 27	<b>Contributing Staff</b> Beatriz García Cuartero Carla Díaz García Enrique Otheo de Tejada Barasoain Itziar García Ormazábal Ignacio García Andrade Ignacio Hernández González Inmaculada Sánchez Pérez Isabel Molina Borao	Luis Fernando Rivilla Parra María Álvarez Fuente M <sup>a</sup> Belén Roldán Martín M <sup>a</sup> Elvira Garrido-Lestache Rodríguez- Monte María Toledano Navarro Natalia Rivero Jiménez Óscar Domínguez Yuste
<b>Principal Investigator</b> M <sup>a</sup> Jesús del Cerro Marín		



#### LOCATION

Floor 11 Right  
Hospital Universitario Ramón y Cajal

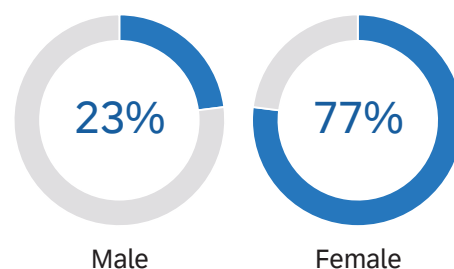


#### KEY WORDS

bronchopulmonary dysplasia, cell therapy, pulmonary arterial hypertension, congenital heart disease, diabetes mellitus, uncommon diseases, paediatric obesity, new technologies in type 1 diabetes, growth, safety of drugs in paediatrics, hospital infection, hyperandrogenism



#### GENDER DISTRIBUTION





# Area 5

## Chronic pathologies and surgery research

### Paediatrics Group

#### NETWORKS AND ALLIANCES

- Type 1 diabetes Genetic Consortium
- PULMESCELL Project: Hospital Niño Jesús & UCM
- RECLIP - Spanish Network of Paediatric Clinical Trials



#### LINES

- Pulmonary arterial hypertension
- Cell therapy in bronchopulmonary dysplasia
- Markers for predicting the risk of developing bronchopulmonary dysplasia
- Safety of new drugs in the paediatric population
- Congenital heart disease of adolescents and adults
- New technologies in type 1 diabetes
- New drugs in type 1 diabetes in childhood and adolescence
- Epidemiology and safety of paediatric hospital infections
- Hyperandrogenism and type 1 diabetes mellitus
- Pituitary tumours in children and adolescents

#### STRATEGIC OBJECTIVES

- To implement new therapies to prevent bronchopulmonary dysplasia.
- To evaluate new therapies in pulmonary arterial hypertension.
- To evaluate new drugs in paediatrics.
- Prognosis and quality of life of congenital heart disease in the mid to long term
- Genetic mapping of type 1 diabetes mellitus
- To develop, implant and disseminate new technologies in type 1 diabetes mellitus in childhood and adolescence.
- New insulins in type 1 diabetes mellitus in childhood and adolescence.
- Lifestyle habits, prevention and treatment in paediatric obesity.
- Epidemiology and genetic analysis of uncommon diseases: pseudohypoparathyroidism (Spanish PHP GROUP), monogenic diabetes.
- Epidemiological safety and efficacy studies in children with growth hormone treatment.
- Hyperandrogenism and type 1 diabetes.

#### INDICATORS OF ACTIVITY 2023

- 3 competitive projects led: ISCIII and MICINN
- 1 private project led
- 6 clinical studies led
- 1 competitive HR agreement
- 1 supervised doctoral thesis read
- 10 publications
- IF: 218.92
- Publications in Q1: 5 (50%)
- Publications in D1: 3 (30%)
- Project evaluator of national association projects: 1 PI
- Member of editorial committees: 1 PI

#### NOTEWORTHY MILESTONES

1. Awarding of 2 National Plan research projects funded by ISCIII (AES 2023): PI23/01302 PI. Dr María Álvarez and PI23/01819 PI. Dr María Jesús del Cerro.
2. Start of the national competitive research project: "Cerebral endophenotypes, genetic and epigenetic effects in transgender adolescents, before and after treatment with puberty blockers" (Ministry of Science in Innovation) Dr Beatriz García Cuartero, PI in our Institution.
3. Recruitment and observation of patients in clinical trials: "Open study to assess the pharmacokinetics, pharmacodynamics and safety of bempedoic acid in paediatric patients (6 to 17 years) with heterozygous familial hypercholesterolemia" led by Dr García Cuartero.
4. Starting in 2024, we will have a new principal investigator in the group, Dr María Álvarez Fuentes.
5. Participation in the first European guidelines on the multidisciplinary management of Fontan-associated liver disease. (Téllez, L. et al. EASL-ERN position paper on liver involvement in patients with Fontan-type circulation. J Hepatol. 2023 Nov;79(5):1270-1301. DOI: 10.1016/j.jhep.2023.07.013. PMID: 37863545).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	11	53,62	4,87	7	64	2	18
2020	14	73,79	5,27	10	71	3	21
2021	9	49,32	5,48	5	56	2	22
2022	11	60,67	5,52	9	82	1	9
2023	10	218,92	21,89	6	60	3	30
	55	456,32	8,61	37	67	11	20

# Area 5

## Chronic pathologies and surgery research

### Metabolic-Endocrine Digestive Surgery And Nutrition group



#### GROUP COMPOSITION

##### Head

José Ignacio Botella Carretero  
Section Head  
Department of Endocrinology and Nutrition  
joseignacio.botella@salud.madrid.org  
91 336 83 43

##### Principal Investigators

José Ignacio Botella Carretero  
Julio Galindo Álvarez  
Marta Araujo Castro

##### Contributing Staff

Alfonso Sanjuanbenito Dehesa  
Álvaro Osorio Ruiz  
Beatriz Ugalde Abiega  
Eduardo Lobo Martínez  
Eider Pascual Corrales  
Jesús Marceliano Gómez Martín  
Luis Alberto Blázquez Hernando  
Luz Divina Juez Sáez  
María Belén Vega Piñero

Marta Cuadrado Ayuso  
Pablo Priego Jiménez  
Pilar Cobeta Orduña  
Víctor Rodríguez Berrocal



#### LOCATION

Department of Endocrinology and Nutrition, Floor 2 Centre  
Hospital Universitario Ramón y Cajal

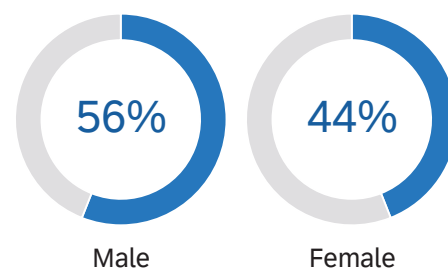


#### KEY WORDS

Endocrine surgery, metabolic surgery, obesity surgery, cardiovascular risk, malnutrition, nutritional support, parenteral nutrition, oncologic surgery, gastrointestinal surgery, neuroendocrine tumours.



#### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Metabolic-Endocrine Digestive Surgery And Nutrition group

#### NETWORKS AND ALLIANCES

- CIBER of Pathophysiology of Obesity and Nutrition
- Sociedad Española de Endocrinología y Nutrición (SEEN)
  - Nutrition workgroup
  - Neuroendocrinology Workgroup
  - Adrenal Workgroup
  - Obesity workgroup
- Scientific committee of the primary hyperaldosteronism group of ENSAT
- Interest group in intestinal failure and home nutrition of ESPEN (European Society for Clinical Nutrition and Metabolism)
- Sociedad de Endocrinología, Nutrición y Diabetes de Madrid (SENDIMAD)
  - Nutrition Group
  - Neuroendocrinology Group
- National Registry of Carcinomatosis Spanish Group for Peritoneal Oncologic Surgery (REGECOP)
- Artificial, Home and Outpatient Nutrition Group of Sociedad Española de Nutrición Clínica y Metabolismo (SENPE).



#### LINES

- Metabolic surgery for obesity and associated comorbidities.
- Malnutrition and nutritional support.
- Oncologic and nononcologic gastrointestinal surgery.
- Neuroendocrine tumours and their surgical treatment.

#### STRATEGIC OBJECTIVES

- To deepen the study of cardiovascular risk and hormonal, metabolic and nutritional disorders associated with severe obesity and their resolution and/or outcome after metabolic/bariatric surgery.
- To advance the development and evolution of techniques in gastrointestinal oncologic surgery, in gastro-oesophageal disease, abdominal wall surgery and pancreatic surgery, as well as in innovative surgical approaches (laparoscopy, robot-assisted, etc.).
- To investigate the diagnostic and therapeutic aspects of gastroenteropancreatic neuroendocrine tumours and adrenal gland tumours, as well as their surgical treatment using modern techniques.
- To investigate the innovative aspects of artificial nutrition in patients with intestinal failure and in patients with cancer, especially in gastrointestinal tract tumours or those that affect the gastrointestinal tract.
- To define strategies for optimising the use of artificial, enteral and parenteral nutrition in treating disease-associated malnutrition in the hospital context, especially in patients with cancer and those undergoing surgery.

#### INDICATORS OF ACTIVITY 2023

- 2 national competitive public projects: ISCIII
- 5 private projects led
- 8 clinical studies led
- 50 publications
- IF: 156.71
- Publications in Q1: 12 (24%)
- Publications in D1: 1 (2%)
- 2 supervised doctoral theses read
- 4 awards
- Editorial committee members: 1 PI
- 1 consensus document, 2 guidelines with recommendations

## Chronic pathologies and surgery research

### Metabolic-Endocrine Digestive Surgery And Nutrition group

#### NOTEWORTHY MILESTONES

1. Initiation of the Research Project in Health funded by ISCIII in the AES 2022 call entitled: "Estimating the risk of fractures using the FRAX scale and the analysis of bone mineral density in CT scans in patients with non-functioning adrenal incidentalomas", led by Dr Marta Araujo.
2. Ruiz JG, Paja M, González M, Pla B, Pascual E, García AM, Parra P, Martín Rojas P, Vicente A, Gómez E, Ferreira R, García I, Recasens M, Barahona San Millan R, Picón MJ, Díaz P, García JJ, Perdomo CM, Manjón L, García R, Percovich JC, Rebollo Á, Gracia P, Robles C, Morales M, Hanzu FA, Araujo M. Effect of Obesity on Clinical Characteristics of Primary Aldosteronism Patients at Diagnosis and Postsurgical Response. *J Clin Endocrinol Metab.* 2023;109(1): 379 - 388. DOI:10.1210/clinem/dgad400. PMID: 37428898. Along with other Q1 and Q2 publications, in 2023, we consolidated the line of neuroendocrine tumours focused on its metabolic and cardiovascular complications.
3. Awarding of the SENPE 2023 Grant to the best research project in nutrition entitled "Universal perioperative nutritional therapy in patients with oesophageal, gastric and pancreatic cancer to assess the reduction of postoperative complications and maintain muscle mass", led by Dr José Ignacio Botella.
4. Ayuso MC, Jiménez PP, Orduña PC, Carretero J, Álvarez JG. Impact of COVID-19 Lockdown on Short-Term Weight Loss After Bariatric Surgery. *Obes. Surg.* 2023;33(3): 961-964. DOI: 10.1016/j.jhep.2023.07.013. PMID: 37863545. Publication included in the doctoral thesis of Dr Marta Cuadrado, defended in 2023 obtaining the maximum qualification.
5. Juez LD, Priego P, Bajawi M, Cuadrado M, Blázquez LA, Sánchez S, Galindo J, Blázquez J, Fernández JM, Botella JI. Impact of Sarcopenic Obesity on Long-Term Cancer Outcomes and Postoperative Complications After Gastrectomy for Gastric Cancer. *J. Gastrointest. Surg.* 2022;27(1): 35 - 46. DOI:10.1007/s11605-022-05492-w. PMID: 36324039. Publication included in the doctoral thesis of the Dr Lumen Divine Judge, supported in 2023 obtaining the maximum qualification.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	-	-	-	-	-	-	-
2020	13	35,94	2,77	6	46	1	8
2021	15	52,05	3,47	10	67	0	0
2022	43	146,07	4,06	18	42	0	0
2023	50	156,71	3,82	23	46	1	2
	121	390,77	3,53	57	47	2	2

# Area 5

## Chronic pathologies and surgery research

### Multisystem Diseases Group



#### GROUP COMPOSITION

##### Head

Luis Manzano Espinosa  
Department Head of Internal Medicine  
luis.manzano@salud.madrid.org  
91 336 88 64

##### Principal Investigators

Luis Manzano Espinosa  
Vicente Gómez del Olmo

##### Contributing Staff

Almudena Vázquez Santos

Andrés González García  
Ángel Manuel Ruedas López  
Cecilia Suárez Carantofia  
Cristina Fernández Soler  
Genoveva Teresa López Castellanos  
Fernando Daniel Hidalgo Salinas  
Ignacio Barbolla Díaz  
Javier Soto Pérez-Olivares  
José María Fernández Rodríguez  
José Luís Calleja López  
José Luis Patier de la Peña  
Judith Jiménez Esteban

Luís Adrián Viteri Noël  
M<sup>a</sup> Belén Pumares Álvarez  
Martín Fabregate Fuente  
Mónica Angélica López Rodríguez  
Myriam M<sup>a</sup> Moralejo Martín  
Nuria Bara Ledesma  
Olivia Sánchez Sánchez  
Pau Llácer Iborra  
Raúl Antonio Ruiz Ortega  
Rosa M<sup>a</sup> Fabregate Fuente  
Sergio José Diz Fariña  
Susana Tello Blasco



#### LOCATION

Department of Internal Medicine  
Floor 4 Right  
Hospital Universitario Ramón y Cajal

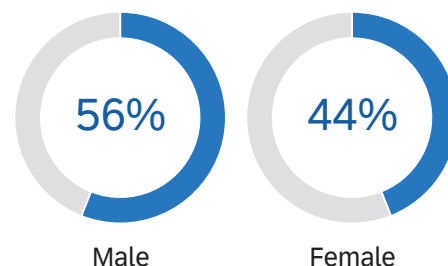


#### KEY WORDS

multisystem diseases, heart failure, complex chronic patient, cardiovascular prevention, venous thromboembolism, systemic autoimmune diseases, rare diseases, hereditary haemorrhagic telangiectasia, inherited metabolic diseases in adults, haemato-oncological diseases, elderly patients, shared care, patients with multiple diseases



#### GENDER DISTRIBUTION



## Chronic pathologies and surgery research

### Multisystem Diseases Group

#### NETWORKS AND ALLIANCES

- Sociedad Española de Medicina Interna (SEMI)
- Orphanet
- Castleman Disease Collaborative Network
- Amelya Lupus Madrid
- Asociación HHT España
- Asociación MPS-LISOSOMALES Spain



#### LINES

- Heart failure in complex chronic patients
- Pathophysiological and therapeutic basis for cardiovascular prevention
- Prophylaxis of venous thromboembolism
- Hereditary haemorrhagic telangiectasia
- Congenital metabolic diseases in adults
- Systemic autoimmune diseases
- Haemato-oncological diseases in elderly patients
- Evaluation of results of shared care in poly pathological patients

#### STRATEGIC OBJECTIVES

- To advance our understanding of the pathophysiological mechanisms involved in various multisystem diseases.
- To identify biomarkers and potential therapeutic targets, as well as to develop prognostic models of clinical utility in complex acute and chronic diseases.
- To develop, apply and evaluate new technologies and diagnostic and therapeutic tools, as well as new strategies for prevention and treatment, in patients with complex diseases.
- To boost the synergies between lines of research and the collaboration with other groups, researchers and structures of IRCIS.
- To integrate and actively participate in cooperative networks, workgroups and multicentre registries, both national and international.
- To strengthen and broaden the alliances and collaborations with the business sector in clinical research.
- To generate new lines of research that complement the current lines and aligned with the strategic objectives of IRCIS and the national and European plans.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive public project led: ISCIII
- 5 private projects led
- 26 clinical studies led
- 32 publications
- IF: 147.81
- Publications in Q1: 6 (19%)
- Publications in D1: 4 (13%)
- 1 supervised doctoral thesis read
- 3 awards
- 2 consensus documents, 2 clinical practice guidelines and 2 action protocols implemented.
- Review committee member: 1 researcher of the group
- Editorial committee members: 2 researchers
- 1 registration of intellectual property MetaDiSc 2.0 maintained.
- 11 visitors hosted and +37 months of stay (equivalent to >3 years of stay) from:
  - Universidad Francisco de Vitoria
  - Universidad Politécnica de Madrid
  - Universidad Complutense de Madrid
  - Universidad de Alcalá

## Chronic pathologies and surgery research

### Multisystem Diseases Group

#### NOTEWORTHY MILESTONES

1. Trullàs JC, Morales-Rull JL, Casado J, Carrera-Izquierdo M, Sánchez-Marteles M, Conde-Martel A, Dávila-Ramos MF, Llàcer P, Salamanca-Bautista P, Pérez-Silvestre J, Plasín MÁ, Cerqueiro JM, Gil P, Formiga F, Manzano L. Combining loop with thiazide diuretics for decompensated heart failure: the CLOROTIC trial. *Eur Heart J.* 2023;44(5):411-421. DOI: 10.1093/eurheartj/ehac689. PMID: 36423214. High-impact publication headed by the group and referenced in the 2023 guidelines for managing heart failure of the European Society of Cardiology (ESC) and of the American College of Cardiology (ACC).
2. Dr Luis Manzano, on behalf of the research team of the independent clinical trial CLOROTIC, "Combining loop with thiazide diuretics for decompensated heart failure: the CLOROTIC trial. *Eur Heart J.* 2023 Feb 1;44(5):411-421. DOI: 10.1093/eurheartj/ehac689. PMID: 36423214. 2023 award for the best article of the Sociedad de Medicina Interna of Madrid and Castilla La Mancha (SOMIMACA).
3. Obtaining of human resources in the competitive call "Grants for procuring research assistants and laboratory technicians 2023" of the Community of Madrid, co-funded by the European Social Fund Plus (ESF+).
4. Suárez Carantoña C, Escobar Cervantes C, Fabregate M, López Rodríguez M, Bara Ledesma N, Soto Pérez-Olivares J, Ruiz Ortega RA, López Castellanos G, Olavarría Delgado A, Blázquez Sánchez J, Gómez Del Olmo V, Moralejo Martín M, Pumares Álvarez MB, Sánchez Gallego MC, Llàcer P, Liaño F, Manzano L. Oral Sodium Chloride in the Prevention of Contrast-Associated Acute Kidney Injury in Elderly Outpatients: The PNIC-Na Randomized Non-Inferiority Trial. *J Clin Med.* 2023;12(8):2965. doi: 10.3390/jcm12082965. PMID: 37109303. Publication of the results of the independent clinical trial PNIC Na (NCT03476460).
5. Doctoral thesis defence by Dr Cecilia Suárez, directed by Dr Luis Manzano and Dr Mónica López, and entitled: "Efficacy of the administration of oral and intravenous sodium chloride in the prophylaxis of iodinated contrast-induced nephropathy in outpatients". Doctoral Programme in Health Sciences (UAH).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	-	-	-	-	-	-	-
2020	22	58,24	2,65	10	45	0	0
2021	43	252,57	5,87	28	65	8	19
2022	33	163,69	4,96	22	67	2	6
2023	32	147,81	4,62	19	59	4	13
	130	622,31	4,79	79	61	14	11

# Area 5

## Chronic pathologies and surgery research

### Liver and digestive Diseases Group



#### GROUP COMPOSITION

##### Head

Agustín Albillos Martínez  
Department Head of Gastroenterology and Hepatology  
Professor of Medicine. Universidad de Alcalá  
agustin.albillos@uah.es  
91 336 80 85

##### Principal Investigators

Agustín Albillos Martínez  
Francisco Gea Rodríguez  
Luis Téllez Villajos

##### Contributing Staff

Almudena Albillos Martínez  
Ana García García de Paredes  
Antonio Guerrero García  
Antonio López San Román  
Beatriz Peñas García  
Carlos Martín de Argila de Prados  
Carolina García Martín  
Enrique Rodríguez de Santiago  
Enrique Vázquez Sequeiros  
Francisco Mesonero Gismero  
Javier Martínez González  
José Luis Lledó Navarro

Juan Ángel González Martín  
Leticia Muñoz Zamarrón  
Miguel Ángel Rodríguez Gandía  
Miguel García González  
Rosa María Martín Mateos  
Rubén Sánchez Aldehuelo



##### LOCATION

Department of Gastroenterology and Hepatology  
Floor -2 Centre  
Hospital Universitario Ramón y Cajal

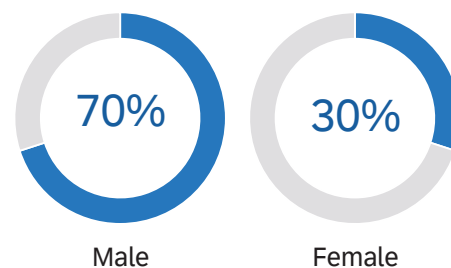


##### KEY WORDS

cirrhosis, bacterial translocation, inflammation, intestines, endoscopy, inflammatory bowel disease, endoscopy



##### GENDER DISTRIBUTION





# Area 5

## Chronic pathologies and surgery research

### Liver and digestive Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER of Liver and Gastrointestinal Diseases



#### LINES

- Pathophysiology, prevention and therapeutic optimisation of complications of cirrhosis and portal hypertension.
- Optimisation of endoscopy in the diagnosis and treatment of gastrointestinal diseases.
- Immunological aetiopathogenic mechanisms in cirrhosis. Relevance of the intestinal bacterial translocation.
- Immunological-based aetiopathogenic mechanisms and therapeutic optimisation in inflammatory diseases of the gastrointestinal tract.

#### STRATEGIC OBJECTIVES

- Contribution of inflammatory mechanisms to cirrhosis progression.
- Relevance of endoscopic ultrasonography in treating biliopancreatic diseases.
- Inflammation of the intestinal mucosa as a therapeutic target in cirrhosis.
- Therapeutic optimisation in inflammatory bowel disease.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project: H2020 DECISION
- 2 national public competitive projects: ISCIII
- 4 private projects led
- 62 clinical studies led
- 1 competitive HR agreement
- 66 publications
- IF: 501.50
- Publications in Q1: 34 (52%)
- Publications in D1: 18 (27%)
- 2 awards: National Doctorate Award from the National Royal Academy of Medicine of Spain and Researcher Excellence Award of Universidad de Alcalá.
- Editorial committee members: 2 PIs
- 1 consensus document (PMID: 35569541)

#### NOTEWORTHY MILESTONES

1. International leadership of the Hospital in coordinating the document of European recommendations for the management of chronic liver disease in patients with Fontan surgery (Fontan-associated Liver Disease) First author: Dr Luis Téllez.
2. Guerrero A, Campo LD, Piscaglia F, Scheiner B, Han G, Violi F, Ferreira CN, Téllez L, Reiberger T, Basili S, Zamora J, Albillos A, Baveno Cooperation: an EASL C. Anticoagulation improves survival in patients with cirrhosis and portal vein thrombosis: The IMPORTAL competing-risk meta-analysis. *J Hepatol.* 2023;79(1): 69 - 78. DOI:10.1016/j.jhep.2023.02.023. PMID: 36858157.
3. Evaluation of the carbon footprint of endoscopic procedures and actions to reduce it. Cunha JA, Roseira J, Cunha MF, Pellino G, Sampietro GM, Rodríguez de Santiago E. Towards a greener endoscopy: Considerations on the strategies to improve sustainability. *Dig Liver Dis.* 2023;55(4): 429 - 430. DOI:10.1016/j.dld.2022.12.017. PMID: 36682924.
4. Establishment of the benefit of beta-blocker treatment for preventing hepatic decompensation in cirrhosis. Rowe IA, Villanueva C, Shearer JE, Torres F, Albillos A, Genescà J, Garcia JC, Tripathi D, Hayes PC, Bosch J, Abraldes JG, PREDESCI I. Quantifying the benefit of nonselective beta-blockers in the prevention of hepatic decompensation: A Bayesian reanalysis of the PREDESCI trial. *Hepatology.* 2023;78(2): 530 - 539. DOI:10.1097/HEP.000000000000342. PMID: 36897269
5. Health results of oesophageal mucosa ablation for treating GERD. Shimamura Y, Inoue H, Tanabe M, Ushikubo K, Yamamoto K, Kimoto Y, Nishikawa Y, Ando R, Sumi K, Navarro MJ, Teruel Sanchez C, Peñas B, Parejo S, Martínez A, Vazquez E, Onimaru M, Albillos A, Rodríguez de Santiago E. Clinical outcomes of anti-reflux mucosal ablation for gastroesophageal reflux disease: An international bi-institutional study. *J Gastroenterol Hepatol.* 2023;39(1): 149 - 156. DOI:10.1111/jgh.16370. PMID: 37787176.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	69	485,80	7,04	47	68	20	29
2020	62	574,58	9,27	43	69	23	37
2021	54	362,49	7,25	41	76	14	26
2022	64	745,19	12,22	48	75	22	34
2023	66	501,50	8,09	45	68	18	27
	315	2669,55	8,77	224	71	97	9

# Area 5

## Chronic pathologies and surgery research

### Geriatrics Group



#### GROUP COMPOSITION

<b>Head</b> Alfonso José Cruz-Jentoft Department Head of Geriatrics geriatria.hrc@salud.madrid.org 91 336 81 72	<b>Contributing Staff</b> Alejandro Garza Martínez Aurora Rexach Cano Beatriz Montero Errasquín Carlota Zárate Sáez Carmen Sánchez Castellano Cristina Jiménez Domínguez Cristina Roldán Plaza Elizabet Sánchez García Erick Rodríguez Espeso Eva Delgado Silveira Jesús Mateos del Nozal	Loreto Álvarez Nebreda Lourdes Rexach Cano Luisa Alejandra Hernández Sánchez Macarena Sánchez-Izquierdo Alonso Manuel Mejía Ramírez de Arellano M <sup>a</sup> Nieves Vaquero Pinto Noelia Pérez Abascal Nuria M <sup>a</sup> Pérez Panizo Paloma Bermejo Bescós Paula Collazo Castiñeira Paula Gutiérrez Viou Paula León Núñez Sagrario Martín-Aragón Álvarez
---	--	--



#### LOCATION

Geriatrics Department. Floor 10 Centre  
Hospital Universitario Ramón y Cajal

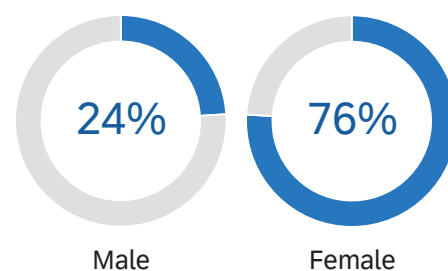


#### KEY WORDS

geriatric pharmacology, sarcopenia, frailty,  
geriatric nutrition, Alzheimer's disease,  
geriatric syndromes



#### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Geriatrics Group

#### NETWORKS AND ALLIANCES

- International Association of Gerontology and Geriatrics - Global Aging Research Network - IAGG GARN
- European Alzheimer’s Disease Consortium - EADC
- IOF - International Osteoporosis Foundation
- ESCEO - European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases
- WHO Clinical Consortium on Healthy Ageing
- Global Leadership Initiative in Sarcopenia (GLIS)



#### LINES

- Appropriate medication prescription for older adults.
- Systematic review of non-pharmacological therapies of geriatric syndromes.
- Prognostic value of comprehensive geriatric assessment.
- Definition of sarcopenia and frailty. Value of nutritional interventions and exercise in preventing physical disability.
- Indications of nutritional intervention in geriatrics.

#### STRATEGIC OBJECTIVES

To improve the knowledge on geriatric medicine (diseases and disability in older adults and healthcare systems), with an approach focused mainly on risk reduction (patient safety) and the prevention or delay of physical and mental disability. To specifically include patients in nursing homes and other complex patients in clinical research projects.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project So-NUTS (ERA-Net “HDHL-INTIMIC” of JPI- HDHL)
- 3 intramural projects FIBIOHRC-IRYCIS-UAH
- 1 private project led
- 6 clinical studies led
- 26 publications
- IF: 128.30
- Publications in Q1: 11 (42%)
- Publications in D1: 5 (19%)
- Project evaluators: 1 PI
- Editorial committee members: 6 researchers
- 2 consensus documents (ESPEN and EASO; EuGMS)
- 1 clinical guideline (UK NICE):
  - Amsterdam University (The Netherlands)
- 1 visitor hosted and +3 months stay:
  - INCLIVA Instituto de Investigación Sanitaria

#### NOTEWORTHY MILESTONES

1. Leadership of the international consortium “Global Leadership Initiative in Sarcopenia” (GLIS), which is preparing the first worldwide definition of sarcopenia.
2. Increase in the number of studies within the department due to the initiative of the members of the group and an increase in participation in editorial committees of scientific journals.
3. First publications resulting from the European project SO-NUTS - Preventing obesity, sarcopenia, and Sarcopenic Obesity in retirement – digital personalized interventions for healthy NUTrition and physical activity for Seniors. (ERA-Net HDHL-PREPHOBES). PMID: 37256475 and 36882046.
4. Major impact and visibility of the publication: Cruz AJ et. al. “STOPP/START criteria for potentially inappropriate prescribing in older people: version 3. Eur Geriatr Med. 2023 Aug;14(4):625-632. doi: 10.1007/s41999-023-00777-y. PMID: 37256475” with an Altmetrics index of 279 (1% greater than the articles of the same age, version 1 & 2).
5. This group has one of the highest participation of women in IRYCIS.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	43	199,53	4,64	30	70	13	30
2020	26	87,94	3,38	15	58	3	12
2021	29	114,84	3,96	14	48	2	7
2022	43	408,88	9,51	18	42	6	14
2023	26	128,30	4,93	14	54	5	19
	167	939,49	5,29	91	54	29	17

# Area 5

Chronic pathologies and surgery research

Surgical Research Group in Urology and renal Transplantation



## GROUP COMPOSITION

### Head

Francisco Javier Burgos Revilla  
Department Head of Urology.  
Professor of Urology Universidad de Alcalá.  
fjavier.burgos@salud.madrid.org  
91 336 87 60

### Principal Investigator

Francisco Javier Burgos Revilla

### Contributing Staff

Alberto del Cristo Artiles Medina  
Álvaro Sánchez González  
Ana Belén Serrano Romero  
Fernando Arias Fúnez  
Guillermo Fernández Conejo  
Inés María Laso García  
Javier Molina Cerrillo  
José Daniel Subiela Henríquez  
José López Menéndez  
Miguel Ángel Jiménez Cidre

Pablo Gajate Borau  
Rafael Rodríguez-Patrón Rodríguez  
Sara Álvarez Rodríguez  
Silvia García Barreras  
Víctor Díez Nicolás  
Victoria Gómez Dos Santos  
Vital Hevia Palacios



### LOCATION

Department of Urology. Floor 6 Left  
Hospital Universitario Ramón y Cajal

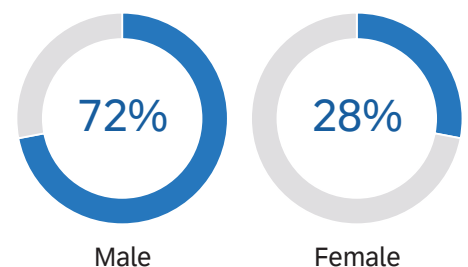


### KEY WORDS

kidney transplantation, kidney preservation, biomarkers, prostate cancer, prostate fusion biopsy, focal therapy, neuronavigation, renal tumour with vascular invasion, urothelial tumour



### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Surgical Research Group in Urology and renal Transplantation

#### NETWORKS AND ALLIANCES

- Clinical Research Office of the Endourological Society (CROES)
- COST Action CA16217-European network of multidisciplinary research to improve the urinary stents (ENIUS)
- Asociación Española de Urología (AEU)
- European Uro-Oncology Group (EUOG)
- European Association of Urology (EAU)-ESTU fellowship on Kidney Transplant
- Young Academic Urologist in Urothelial Cancer
- Human Genetics Group of Centro Nacional de Investigaciones Oncológicas (CNIO)
- FISEVI. Digital Manufacture Lab.: 3D-Biomodel for surgical fixation
- UTUC International Consortium Database (UICD) Registry
- i-RECORD Project



#### LINES

- Kidney transplantation and preservation in the experimental and clinical settings.
- Prostate cancer: diagnostic and therapeutic innovation.
- Diagnostic and therapeutic innovation in bladder disease.
- Diagnostic and therapeutic innovation in renal and urothelial tumour.

#### STRATEGIC OBJECTIVES

- To advance the knowledge on the pathophysiology of ischaemia-reperfusion injury in the context of kidney transplantation, through a translational study from the experimental to the clinical setting.
- To identify biomarkers that help predict the feasibility and function of the graft after kidney transplantation.
- To advance the development of drug modulation models of ischaemia-reperfusion injury during kidney preservation in perfusion devices.
- To evaluate the diagnostic yield and treatment efficacy of new diagnostic and treatment techniques in prostate cancer: MRI-ultrasound fusion biopsy using guided navigation systems, focal ablation techniques for prostate cancer, and intraoperative neurostimulation of neurovascular bundles in prostate surgery.
- To actively participate in multicentre studies for the evaluation of new compounds in treating prostate cancer.
- To actively participate in multicentre studies and cooperative groups for the study and treatment of functional disease and oncologic bladder disease.
- To search for biomarkers that predict treatment response and disease recurrence, as well as to molecularly characterise the neoplasm and the tumour microenvironment in kidney and urothelial cancer.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive European project: HE STBernard
- 1 competitive national private project led: FMM
- 1 private project led
- 68 clinical studies led
- 48 publications
- IF: 185.90
- Publications in Q1: 17 (35%)
- Publications in D1: 3 (6%)
- 3 awards
- 3 doctoral theses read
- Evaluators of national public agencies: 2 researchers
- Evaluators in European institutions: 1 PI
- Editorial committee members: 2 researchers
- 1 clinical guideline: EAU Guidelines on Renal Transplantation
- 3 visitors hosted and 9 months of stay:
  - o Universidad Politécnica de Madrid

## Chronic pathologies and surgery research

### Surgical Research Group in Urology and renal Transplantation

#### NOTEWORTHY MILESTONES

1. Launch of the group's first European competitive project and the first project in Cluster 3 of "Civil Safety for Society" for IRYCIS: "STBERnard. SysTem for SAFE Biological chEmical Radiological and Nuclear Assessment, Rescue and Decontamination", funded by the Horizon Europe programme for improving the safety in situations of risk or emergency, reducing the number and severity of victims and mitigating the environmental impact.
2. "René Kuss Award" to the Best Communication in Transplantation in the European Urology Congress. Translational Model of Normothermic Ex-Vivo Perfusion for the Evaluation of the Feasibility and Rehabilitation of Pre-transplantation Renal Grafts. miRNAs as Biomarkers of Feasibility. Project Funded by Fundación Mutua Madrileña. PI: Dr Victoria Gómez Dos Santos.
3. "Extraordinary Doctorate Award 2022" and "Doctorate Award in Surgical Clinical Sciences 2023 of the Spanish Royal Academy of Medicine" to the thesis entitled: Experimental randomised study on the efficacy of hypothermic machine kidney preservation with oxygen supplementation. Doctoral student: Vital Hevia Palacios. Directors: Dr Burgos Revilla and Dr Gómez Dos Santos.
4. Burgos FJ et al. Vascular closure devices in living donor nephrectomy: a much-needed systematic review and meta-analysis focusing on safety. *BJU International*. *BJU Int.* 2023 Sep;132(3):239-251. DOI: 10.1111/bju.16025. PMID: 37017627.
5. López Menéndez et al. Clinical outcomes and quality of life after contemporary isolated coronary bypass grafting: a prospective cohort study. *Int J Surg*. 2023 Apr 1;109(4):707-715. DOI: 10.1097/JS9.000000000000259. PMID: 36912566.

#### BIBLIOMETRICS 2019-2023

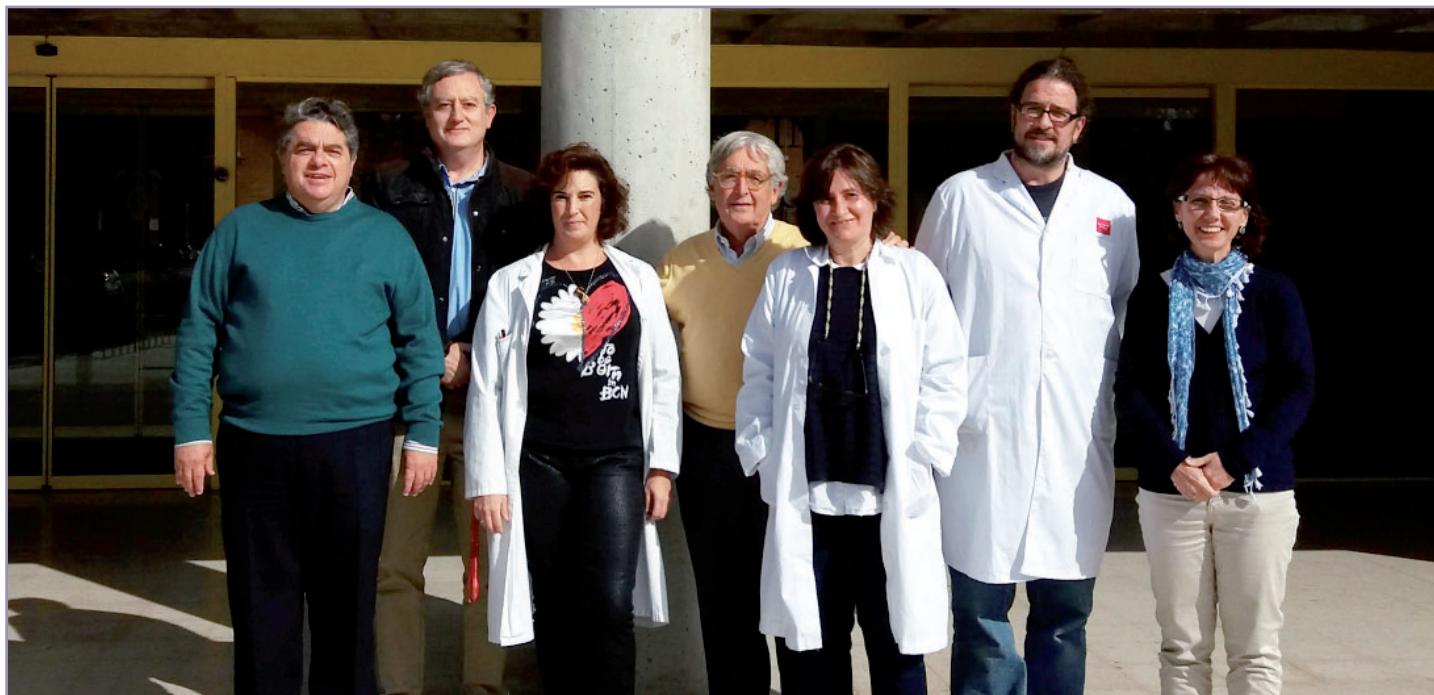
(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	12	11,29	0,94	2	17	0	0
2020	26	46,37	1,78	8	31	1	4
2021	25	67,04	3,53	12	48	1	4
2022	34	101,07	4,04	16	47	1	3
2023	48	185,90	4,43	30	63	3	6
	145	411,67	2,94	68	47	6	4

# Area 5

## Chronic pathologies and surgery research

### Renal and Vascular Physiology and Pathophysiology



#### GROUP COMPOSITION

##### Head

Diego Rodríguez Puyol  
Professor Universidad de Alcalá  
drodriguez.hupa@gmail.com  
91 887 81 00 (ext. 2562)

##### Principal Investigators

Diego Rodríguez Puyol  
José Manuel Gómez Pulido  
Laura Calleros Basilio  
M<sup>a</sup> Piedad Ruiz Torres

##### Contributing Staff

Alberto Garcés Jiménez  
Daniel Rodríguez García  
Elena Alcalde Estévez  
Gema Olmos Centenera  
Javier Bueno Guillén  
José Luis Castillo Sequera  
Juan Antonio Gómez Pulido  
María Luz Polo Luque  
Natalia Canales Bueno

Sofía Campillo De Blas  
Sergio de Frutos García  
Susana García Miranda



#### LOCATION

Faculty of Medicine  
Universidad de Alcalá

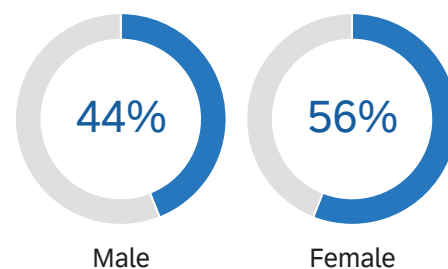


#### KEY WORDS

chronic kidney disease, extracellular matrix, integrin-linked kinase, GLUT4, AQP2, endothelial dysfunction, phosphorus, sarcopenia, cellular senescence, haemodialysis



#### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Renal and Vascular Physiology and Pathophysiology

#### NETWORKS AND ALLIANCES

- Graphenano Medical Care, SL
- NOVELREN – CLINIREN (B2017/BMD3751)
- Fundación Renal Íñigo Álvarez de Toledo (FRIAT)
- RICORS 2040 (Kidney Disease)



#### LINES

- Integrin-linked kinase: possible biomarker of progression in chronic kidney disease (CKD) and modulator of monocyte dysfunction responsible for cardiovascular damage.
- Integrin-linked kinase: role in the progression of insulin resistance and in the development of obesity.
- The importance of phosphorus in the genesis of vascular abnormalities in the elderly and patients with arteriosclerosis. New approaches to evaluating the problem.
- Importance of phosphorus in the genesis of sarcopenia in the elderly and patients with chronic kidney disease. New approaches to evaluating the problem.
- Massive data analysis in preventing the complications associated with haemodialysis.

#### STRATEGIC OBJECTIVES

- Four active research projects of the National Plan.
- Six publications in the first quartile of their area of expertise.
- Two reliably active collaborations with other members of IRYCIS and of Hospital Ramón y Cajal (based on joint projects, publications and/or lines of development).
- At least one annual scientific lecture for the entire Institute (with invitation).
- To facilitate collaboration with other members of IRYCIS in at least one annual teaching activity of Universidad de Alcalá.
- Regular collaboration with at least 1 private company.

#### INDICATORS OF ACTIVITY 2023

- 6 competitive public projects: ISCIII and CAM
- 2 private projects led
- 5 competitive HR contracts
- 4 publications
- IF: 27.30
- Publications in Q1: 3 (75%)
- Publications in D1: 1 (25%)
- Evaluators in various national public agencies and entities: 7 researchers.
- 2 months stay in foreign institutions:
  - Universidad Tecnológica de Panamá

#### NOTEWORTHY MILESTONES

1. Participation in the most important consortia on kidney research at the national level.
2. Sustained generation of relevant knowledge in the field of the application of new materials to biomedicine (de Frutos S, Griera M, Lavín MDP, Martínez M, Martínez JA, Rodríguez M, Rodríguez D. A new graphene-based nanomaterial increases lipolysis and reduces body weight gain through integrin linked kinase (ILK). *Biomater. Sci.* 2023;11(14): 4916 - 4929. DOI:10.1039/d2bm01791a. PMID: 37306667).
3. A collaborative project with companies, jointly funded by CDTI and ISCIII, in the field of artificial intelligence.
4. Obtaining a PFIS agreement (ISCIII) in competitive tendering for the implementation of theses in the research group and 3 youth guarantee contracts.
5. Alcalde E, Sosa P, Asenjo A, Plaza P, Valenzuela PL, Naves M, Olmos G, López S, Ruiz MP. Dietary phosphate restriction prevents the appearance of sarcopenia signs in old mice. *J. Cachexia Sarcopenia Muscle.* 2023;14(2): 1060 - 1074. DOI:10.1002/jcsm.13194. PMID: 36855841.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	2	10,55	5,28	2	100	0	0
2020	6	79,13	13,19	5	83	2	33
2021	13	81,62	6,28	12	92	5	38
2022	4	29,39	7,35	4	100	1	25
2023	4	27,30	6,83	4	100	1	25
	29	227,99	7,78	27	93	9	31



# Area 5

Chronic pathologies and surgery research

Diagnosis and Treatment of Allergic Diseases Group



### GROUP COMPOSITION

#### Head

María Belén de la Hoz Caballer  
Head of the Allergy Department  
alergiamonycajal@gmail.com  
91 336 88 64

#### Principal Investigators

M<sup>a</sup> Belén de la Hoz Caballer  
M<sup>a</sup> Pilar Berges Gimeno

#### Contributing Staff

Aída Vaquero Rey  
Alicia Barra Castro  
Ana de Andrés Martín  
Carmen Vidal Albareda  
Cristiana Lucía Solorzano Zepeda  
Cristina Pueyo López  
Darío Antolín Amérigo  
David González de Olano

Emilio José Solano Solares  
Francisco Javier Sola Martínez  
Laura Gisella Díaz Montalvo  
Laura Victoria Carpio Escalona  
Lorena Bernal Rubio  
María Pía de Calzada Bustingorri  
Sergio Olmos Piñero  
Soledad Terrados Cepeda  
Violeta Sánchez García



#### LOCATION

Department of Allergy  
Floor 2 Left  
Hospital Universitario Ramón y Cajal

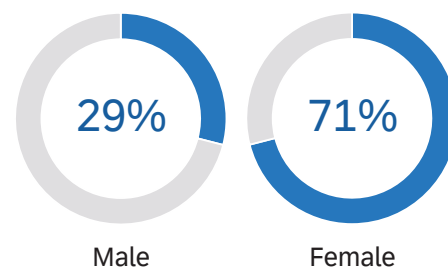


#### KEY WORDS

allergy, B-cell epitopes, IgE,  
food, medication, desensitisation,  
chemotherapy, monoclonal, oral  
food immunotherapy, environmental  
allergen immunotherapy, mastocytosis,  
biomarkers, severe asthma, urticaria,  
quality of life, hymenoptera, molecular  
diagnosis, microarrays, tryptase,  
anaphylaxis



#### GENDER DISTRIBUTION



# Area 5

## Chronic pathologies and surgery research

### Diagnosis and Treatment of Allergic Diseases Group

21

#### NETWORKS AND ALLIANCES

- Network of Asthma, Adverse Reactions and Allergies (ARAD-YAL)
- Red de Investigación de Reacciones Adversas a Alérgenos y Fármacos (RIRAAF)
- Skin in network
- Vaccine Committee of FACME
- AEMPS
- Imperial College London
- Universidad San Pablo CEU
- Universidad Politécnica de Madrid, School of Telecommunications
- Spanish Network of Mastocytosis



#### LINES

- Respiratory allergy
- Anaphylaxis and mastocytosis
- Diagnosis and treatment of allergies to chemotherapy drugs and biological drugs
- Diagnosis and treatment of food allergies

#### STRATEGIC OBJECTIVES

- To search for biomarkers, based on B-cell epitopes and microRNA expression, to improve the diagnosis and treatment of food allergies.
- To measure the quality of life and socioeconomic costs associated with food allergies.
- To develop technological instruments for monitoring patients with food allergies undergoing immunotherapy.
- To evaluate the utility of in vitro techniques of basophil activation and measurement of interleukins for the diagnosis and follow-up of desensitisation treatment with chemotherapy drugs and biological drugs.
- To study the quality of life and costs of drug desensitisation procedures.
- To evaluate the frequency of mast cell disease in patients with anaphylaxis.
- To evaluate the risk factors in severe asthma.
- Technological and clinical validation of a respiratory exposure chamber against aeroallergens.

#### INDICATORS OF ACTIVITY 2023

- 4 competitive national public projects led: ISCIII, Instituto de Medicina Molecular Aplicada (IMMA)
- 8 private projects led
- 18 clinical studies led
- 1 new competitive HR agreement
- 36 publications
- IF: 237.52
- Publications in Q1: 27 (75%)
- Publications in D1: 5 (14%)
- 1 award
- Evaluator staff of medical agencies and societies: 3 researchers
- Editorial committee members: 2 researchers
- 1 extended patent in 5 countries in Europe with priority application P201331200 entitled "Method for the prognosis of the efficacy of oral immunotherapy for treating cow milk protein allergy".
- 1 clinical guideline (PubMed Id.: 37517623)
- 9 visitors hosted and 18 days of stay:
  - Hospital San Joan de Deu
  - Hospital Santa Bárbara
  - Hospital Granollers
  - Hospital Universitario Juan Ramón Jiménez Huelva
  - Hospital Puerta de Hierro Majadahonda
  - Fundación Jiménez Díaz
  - Hospital General Universitario de Castellón
  - Hospital Universitario 12 de Octubre
  - Hospital del Tajo Madrid

# Area 5

## Chronic pathologies and surgery research

### Diagnosis and Treatment of Allergic Diseases Group

#### NOTEWORTHY MILESTONES

1. Completed the technical and clinical validation of the environmental exposure chamber for grass pollen. In development: the search for biomarkers project.
2. Intramural project awarded for the study of hereditary hypertryptasemia, Multidisciplinary Unit of Mastocytosis.
3. Creation of a computer platform for analysing information obtained from trials with peptide microarrays using massive data analysis, with the use of "MicroarrAI Platform" artificial intelligence.
4. Implementation of the subprogramme Beta-lactam Allergy- within PROA (Programme for optimising the use of antibiotics). Healthcare quality programme.
5. Implementation and validation of techniques for measuring IgE and IgG and basophil activation trial by microarray platform and complement in hypersensitivity reactions to platinum and taxanes.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

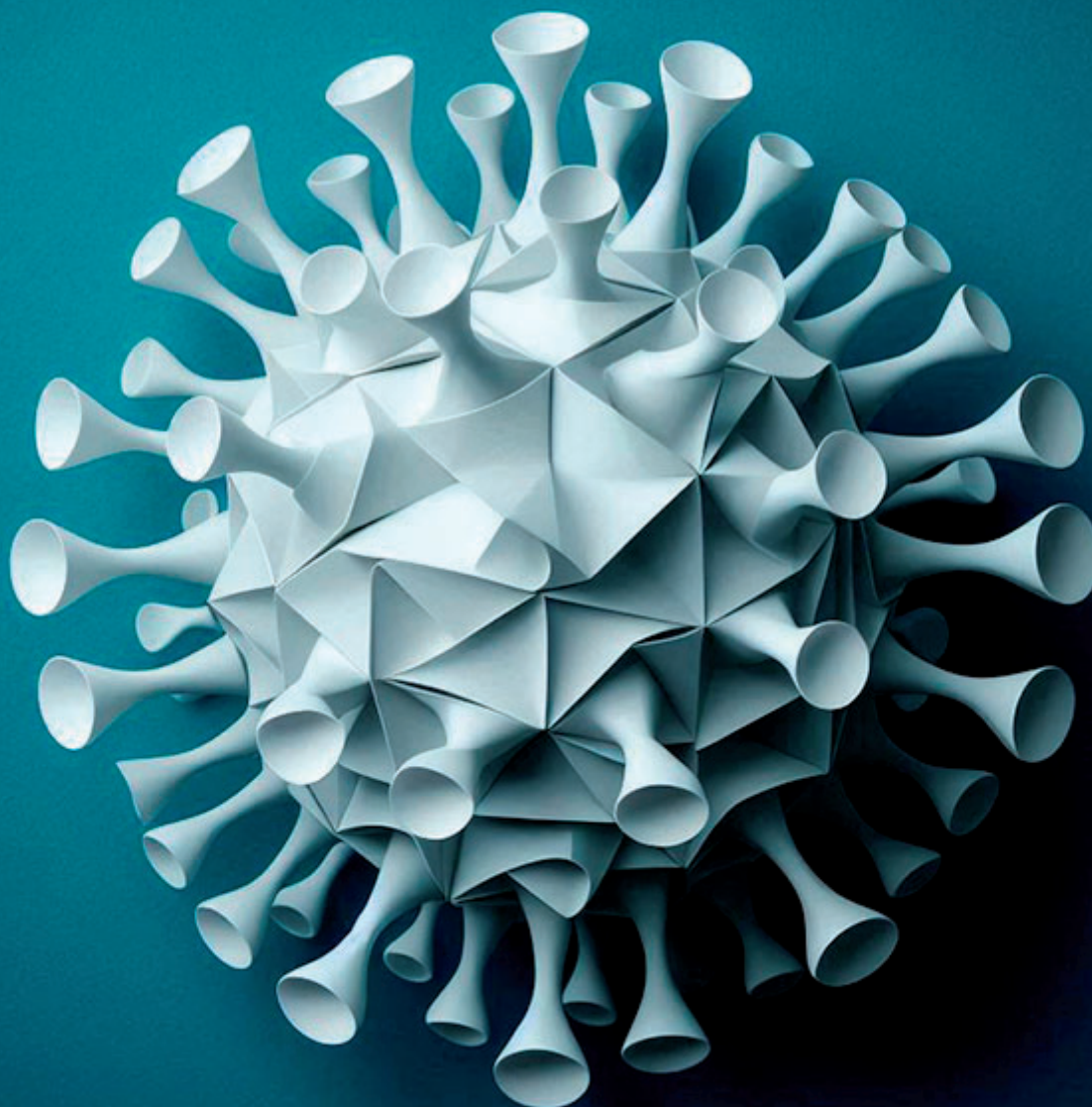
	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	-	-	-	-	-	-	-
2020	17	48,97	2,88	8	47	1	6
2021	17	93,25	5,49	15	88	2	12
2022	12	88,701	9,86	8	67	1	8
2023	36	237,52	7,20	32	89	5	14
	65	419,47	7,51	55	85	8	12

### Research Groups

Epidemiology and Clinical Biostatistics

Pharmacoepidemiology

Physiotherapy in Women's Health



# Area 6

## Epidemiology, Public Health and Health Care

# 21

### Funding and scientific output in the past five years

CUMULATIVE REVENUES  
(private and public projects and clinical trials)

€1,4M



R&D PROJECTS  
AND INITIATIVES

53



PUBLICATIONS

455



PUBLICATIONS  
in Q1 & Q2

65%

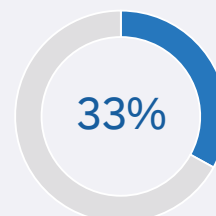
PUBLICATIONS  
headed by IRYCIS members

59%

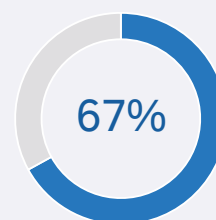
THESES  
supervised doctoral theses read

24

### GENDER DISTRIBUTION



Male



Female

### Annual list of the 5 most relevant publications

**Guerrero A, Campo LD, Piscaglia F, Scheiner B, Han G, Violi F, Ferreira CN, Téllez L, Reiberger T, Basili S, Zamora J, Albillos A.** Baveno Cooperation: an EASL C. Anticoagulation improves survival in patients with cirrhosis and portal vein thrombosis: The IMPORTANT competing-risk meta-analysis. *J Hepatol.* 2023;79(1): 69 - 78. DOI:10.1016/j.jhep.2023.02.023. PMID: 36858157.

**Rodríguez S, Barreira D, Mazzucchelli R, Gil M, García A, Izquierdo L, Pérez A, Rodríguez A, de Abajo FJ.** Association of oral bisphosphonates with cardioembolic ischemic stroke: a nested case-control study. *Front Pharmacol.* 2023;14: 1197238-1197238. DOI:10.3389/fphar.2023.1197238. PMID: 37305544.

**Fernández BM, Corres J, Estelles P, Arana E, Arenaza G, Castillo M, Pecharromán I, San José D, Piqueras R, García de Vicuña A, Gómez V, Vicente A, Zamora J.** Prediction of significant coronary artery disease in acute chest pain without infarction in emergency department: MAPAC Cardio-PreTest model. *Eur J Emerg Med.* 2023;30(1): 40-46. DOI:10.1097/MEJ.0000000000000992. PMID: 36542336.

**Esteban B, Serrano DR, Pérez Menéndez C, Vicente N, Álvarez A, Fortún J, Martín P.** Stability of meropenem in portable elastomeric infusion devices: which protocol should be implemented in clinical practice?. *Microbiol Spectr.* 2023;DOI:10.1128/spectrum.02064-23. PMID: 38088799.

**Mateos M, Novoa M, Sánchez G, Correa A, Gaetano A, Fernández S, Ortega D, Uruña MG, Saceda D, Bennouna T, Giraldo L, Tomlinson J, Vaño S, Zamora J.** Treatments for alopecia areata: a network meta-analysis. *Cochrane Database Syst Rev.* 2023;10(10): 13719 - 13719. DOI:10.1002/14651858.CD013719.pub2. PMID: 37870096.

# Area 6

## Epidemiology, Public Health and Health Care

### Epidemiology and Clinical Biostatistics Group



#### GROUP COMPOSITION

##### Head

Javier Zamora Romero  
Head of the Biostatistics Unit  
javier.zamora@hrc.es  
91 336 81 03

##### Principal Investigators

Javier Zamora Romero  
Alfonso Muriel García  
Ingrid Arévalo Rodríguez

##### Contributing Staff

Andrea Correa Pérez  
Andrea Gaetano Gil

Borja Manuel Fernández Félix  
Elena Christine Stallings  
Gabriel Ruiz Calvo  
Jesús López Alcalde  
Laura del Campo Albendea  
M<sup>a</sup> Nieves Plana Farras  
Miriam Mateos Haro  
Sílvia Fernández García  
Víctor Abraira Santos



#### LOCATION

Biostatistics Unit. Floor 1 of the Teaching Pavilion  
Hospital Universitario Ramón y Cajal

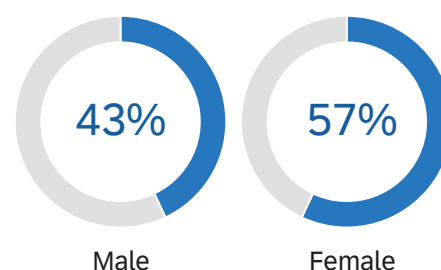


#### KEY WORDS

biostatistics, meta-analyses, systematic reviews, regression models, evidence-based medicine, adaptation



#### GENDER DISTRIBUTION



# Area 6

## Epidemiology, Public Health and Health Care

### Epidemiology and Clinical Biostatistics Group

21

#### NETWORKS AND ALLIANCES

- CIBER of Epidemiology and Public Health
- Centro Colaborador Cochrane de la Comunidad de Madrid
- Queen Mary University London (United Kingdom)
- Monash University (Australia)
- WHO Collaborating Center for Women's Health. University of Birmingham (United Kingdom)



ciber | ESP



MONASH  
University



UNIVERSITY OF  
BIRMINGHAM

#### LINES

- Research synthesis for decision making in health.
- Multivariate models and research on diagnosis and prognosis.
- Causality analysis with Real World Data (observational studies).

#### STRATEGIC OBJECTIVES

- Promote the synthesis of the best scientific understanding available to support informed decision making regarding health.
- To evaluate clinical practice to obtain relevant and useful information for improving the adequacy of diagnostic and therapeutic procedures.
- Evaluation, development and validation of statistical methods for research on prognosis with primary patient data or with secondary data from systematic reviews
- To promote the use of optimal research methodology and the most advanced biostatistics techniques for the implementation of clinical-epidemiological research.

#### INDICATORS OF ACTIVITY 2023

- Competitive European grant led: JRC Tender
- 2 competitive national public projects led: ISCIII
- 3 private projects led
- 2 competitive HR agreements
- 49 publications
- IF: 360.71
- Publications in Q1: 28 (57%)
- Publications in D1: 9 (18%)
- 1 supervised doctoral thesis read
- Evaluators in various national institutions: 3 researchers
- 1 European patent application of an EIT Health project (EP21383224.9) with PCT/EP2022/087806 "Chronic pain: Electrical Quantitative Sensory Assessment System for Failed Back Surgery Syndrome"
- 2 books with registered ISBN (978-84-09-04309 and 978-84-09-04308) on MAPAC algorithms
- 2 registrations of intellectual property: Metadisc 2.0 Request No.: 2110269633104 and MAPAC-DX APP Application No.: 2211082593771)
- 1 document with recommendations (PubMed Id.: 38008602)
- 3 activities with societal impact: "European Researchers' Night" and holding of conferences
- 3 visitors hosted and 16 months of stay:
  - Universidad del Valle (Colombia)
  - Universidad Francisco de Vitoria
  - Universidad Complutense de Madrid

# Area 6

## Epidemiology, Public Health and Health Care

### Epidemiology and Clinical Biostatistics Group

#### NOTEWORTHY MILESTONES

1. Participation in the project PMP22/00084 Personalised Medicine (MedPer) in the early detection of preclinical cognitive impairment (CI). Development of a risk prediction model.
2. Conference for celebrating the 30th Anniversary of the Clinical Biostatistics Unit.
3. Creation of the predictive tool for significant stenosis in the emergency department in patients with acute chest pain. MAPAC-CardioCT Model (<https://www.evidencio.com/models/show/2712>).
4. Miriam Mateos-Haro et al. Treatments for alopecia areata: a network meta-analysis. Cochrane Database Syst Rev. 2023 Oct 23;10(10):CD013719. DOI: 10.1002/14651858.CD013719.pub2. PMID: 37870096. Publication of the systematic Cochrane review on treatments for alopecia areata in collaboration with the Experimental Dermatology group.
5. Update of the recommendations and Good Clinical Practices in the European clinical practice guidelines for the screening and prevention of colorectal, breast and cervical cancer ([https://cancer-screening-and-care.jrc.ec.europa.eu/en/ecicc/european-colorectal-cancer-guidelines?topic=289&usertype=282&filter\\_1=293&updatef2=0](https://cancer-screening-and-care.jrc.ec.europa.eu/en/ecicc/european-colorectal-cancer-guidelines?topic=289&usertype=282&filter_1=293&updatef2=0)).

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

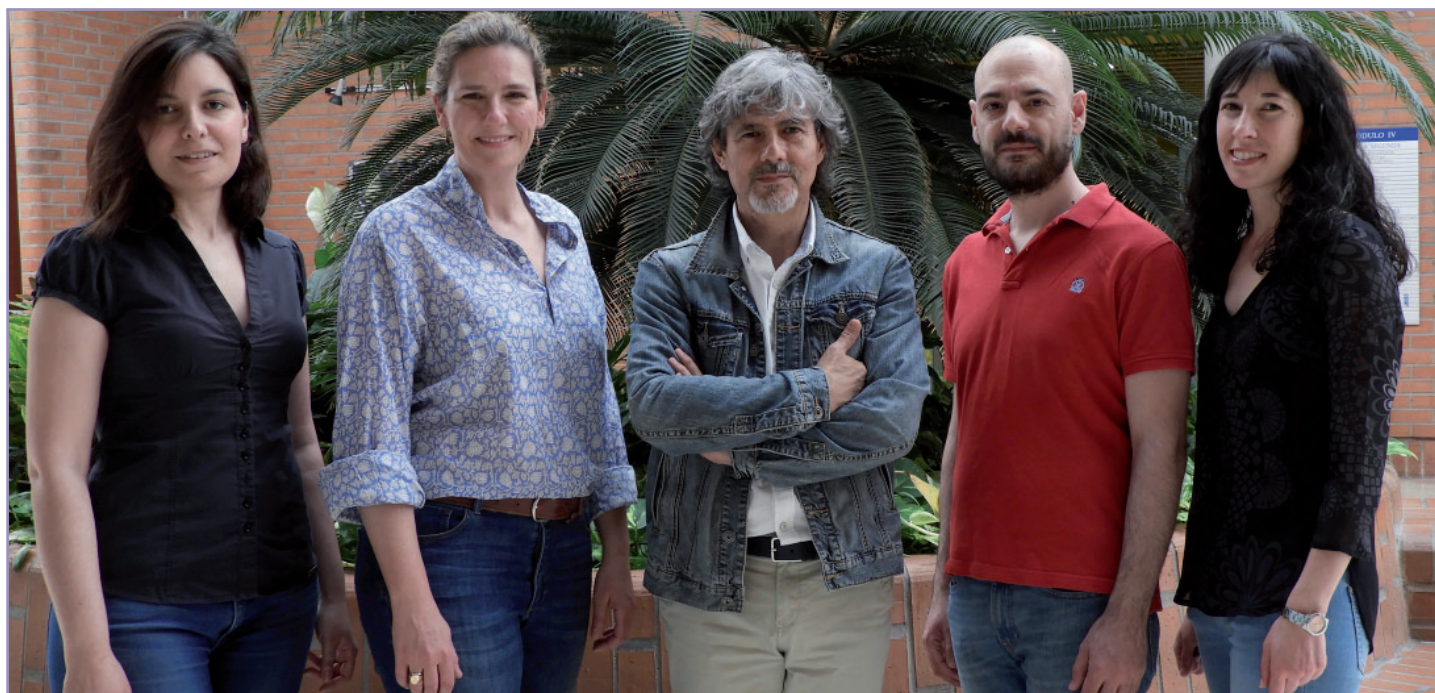
	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	64	432,67	6,76	45	70	19	30
2020	58	279,19	4,81	38	66	20	34
2021	64	394,78	6,17	47	73	17	27
2022	51	629,49	14,31	40	78	20	39
2023	49	360,71	9,02	33	67	9	18
	286	2096,84	8,21	203	71	85	30



# Area 6

## Epidemiology, Public Health and Health Care

### Pharmacoepidemiology Group



#### GROUP COMPOSITION

##### Head

Francisco José de Abajo Iglesias  
francisco.abajo@uah.es  
918878100 (ext 2607 / 2610)

##### Principal Investigator

Francisco José de Abajo Iglesias

##### Contributing Staff

Antonio González Pérez  
Antonio Rodríguez Miguel  
Diana Barreira Hernández  
Encarnación Fernández Antón  
Sara Rodríguez Martín  
Victoria Lerma Hambleton



#### LOCATION

Department of Biomedical Sciences  
(Pharmacology Teaching Unit) – Ctra  
Madrid-Barcelona km 33.6, 28805  
Alcala de Henares, Madrid  
0034 91 885 25 93  
Clinical Pharmacology Unit  
Hospital U. Príncipe de Asturias  
Ctra. Alcalá-Meco s/n, 28805 Alcalá de  
Henares, Madrid  
91 887 81 00 (ext. 2607 o 2610)

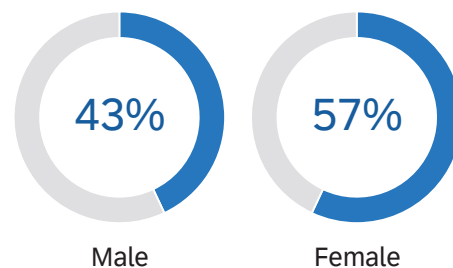


#### KEY WORDS

medications, adverse reactions,  
pharmacoepidemiology,  
pharmacovigilance, safety, risks of  
medication, effectiveness, observational  
studies



#### GENDER DISTRIBUTION



# Area 6

## Epidemiology, Public Health and Health Care

### Pharmacoepidemiology Group

#### NETWORKS AND ALLIANCES

- REGISCAR: Registration of severe cutaneous adverse drug reactions. - International Consortium
- Osteoarthritis Foundation International



#### LINES

- Atherothrombotic events, use of medication and environmental factors.
- Severe cutaneous adverse drug reactions (type IV hypersensitivity reactions). Clinical-epidemiological study and search for susceptibility markers.
- Pharmacoepidemiology evaluation of chemoprotectants in gastrointestinal cancer.

#### STRATEGIC OBJECTIVES

- To achieve the consolidation of the research group once the young members have chosen more stable positions in the university and/or hospital, placing our group as a reference in pharmacoepidemiology research and promoting the collaboration with groups in our clinical-academic setting and in other settings.
- To consolidate PIELenRed in the Community of Madrid as an interdisciplinary research platform and to extend the collaboration to other national hospitals, maintaining its integration in the REGISCAR International Consortium.
- To broaden the access to other additional sources of information to BIFAP.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive public project led: ISCIII
- 3 private projects led
- 1 agreement with a public agency led: AEMPS
- 7 publications
- IF: 35.70
- Publications in Q1: 3 (43%)
- Publications in D1: 1 (14%)
- Editorial committee member: 1 PI
- Review committee member: 1 PI

#### NOTEWORTHY MILESTONES

1. Publications on the risk of cardioembolic stroke and the use of bisphosphonates (Frontiers in Pharmacology - PMID: 37305544) and calcium supplements (Journal of Clinical Medicine - PMID: 37629338).
2. Participation in a special issue of Pharmacological Research on Spanish pharmacology (Special Issue Spanish Pharmacology).
3. Participation by Dr de Abajo as expert in the "Workgroup of the Strategic Line of Research and Training. Update of the ICTUS (stroke) strategy of SNS", organised by the Ministry of Health.
4. Collaboration with the Department of Gastroenterology of Hospital de la Princesa (Dr J. Gisbert) in various projects on Helicobacter pylori eradication therapy and the treatment of inflammatory bowel disease.
5. Collaboration between Dr Rodríguez-Miguel and the Departments of Ophthalmology of Hospital Universitario Príncipe de Asturias (Dr Arruabarrena) and Hospital Clínic de Barcelona (Dr Zarranz- Ventura) in the generation of artificial intelligence-based models that help increase the efficiency of screening programmes for diabetic retinopathy.

#### BIBLIOMETRICS 2019-2023

(only original articles, editorials, guidelines and reviews)

	Articles	Cum. IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	Articles D1	% in D1
2019	10	47,08	4,71	9	90	5	50
2020	9	87,17	9,69	6	67	1	11
2021	3	18,55	6,18	3	100	2	67
2022	11	62,89	5,72	9	82	2	18
2023	7	35,70	5,10	7	100	1	14
	40	251,39	6,28	34	88	11	32

# Area 6

## Epidemiology, Public Health and Health Care

### Physiotherapy in Women's Health research Group



#### GROUP COMPOSITION

<b>Head</b> María Torres Lacomba maria.torres@uah.es	<b>Principal Investigator</b> María Torres Lacomba <b>Contributing Staff</b> Beatriz Navarro Brazález	Beatriz Sánchez Sánchez Carmen María Hernández Iglesias Cristina del Valle Rubido Fernando Vergara Pérez Jesús Lázaro-Carrasco de la Fuente María José Yuste Sánchez
--	--	---



#### LOCATION

Physiotherapy Teaching Unit.  
Faculty of Medicine and Health Sciences  
Universidad de Alcalá. 28805 Alcalá de  
Henares, Madrid

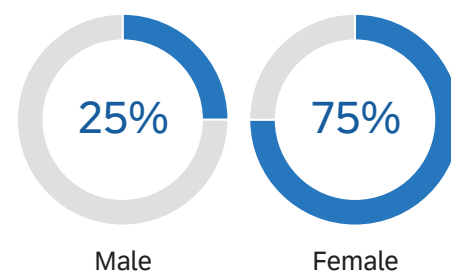


#### KEY WORDS

physiotherapy, women's health, pelvic  
floor dysfunction, breast cancer,  
gynaecological cancer, genitourinary  
syndrome of menopause, pelvic pain,  
therapeutic exercise, clinimetrics



#### GENDER DISTRIBUTION



# Area 6

## Epidemiology, Public Health and Health Care

### Physiotherapy in Women's Health research Group

21

#### LINES

- Evaluation of conservative and invasive therapies in genitourinary syndrome of menopause.
- Preparation of educational programmes for the prevention and/or management of sequelae resulting from oncological treatments in female oncological processes.
- Validation of PRO questionnaires.

#### STRATEGIC OBJECTIVES

- To identify and develop diagnostic and therapeutic strategies for pelvic floor dysfunction secondary to female oncological processes, especially in women treated for breast cancer or gynaecological cancer.
- Design and evaluation of therapeutic interventions for preventing and treating genitourinary syndrome of menopause.
- Design and evaluation of therapeutic interventions for preventing and treating chronic pelvic pain.
- Development of educational programmes for the prevention and/or treatment of pelvic floor dysfunctions, pelvic pain processes and other sequelae that might be associated with female oncological processes.
- Validation of self-administered questionnaires to understand and assess the signs, symptoms and quality of life of Spanish women with pelvic floor dysfunctions.

#### INDICATORS OF ACTIVITY 2023

- 1 competitive public project led: ISCIII
- 3 private projects led
- 2 clinical trials led
- 1 publication
- IF: 3.6
- 5 supervised doctoral theses read
- 1 award
- Editorial committee member: 1 PI
- Review committee member: 1 PI

#### NOTEWORTHY MILESTONES

1. Start of the project on Technological Development in Health: "Intelligent and portable sensory system for monitoring the personalised training of pelvic floor muscles" Ref. DTS22/00141, funded competitively by ISCIII and led by Dr Torres Lacomba.
2. Defence of 5 doctoral theses directed by members of the research group with maximum qualification, which addressed issues such as health in prostate cancer, physiotherapy in idiopathic overactive bladder, addressing pelvic floor disorders, the influence of physical activity on lower limb physiology, and the involvement of the spine in musculoskeletal shoulder pain.
3. Establishment of a coordinated structure for integration and collaboration between the Department of Obstetrics and Gynaecology (Pelvic Floor Unit) and the Physiotherapy Unit in Women's Health of UAH for the implementation of clinical research projects.
4. Initiation of a research assistant agreement funded by CAM and of 5 new private projects funded by Colegio Profesional de Fisioterapeutas de la Comunidad de Madrid (CPFCM).
5. Dr Torres Lacomba was given the second award to the best publication of the Colegio Profesional de Fisioterapeutas of the Community of Madrid (CPFCM) for her study "Torres-Lacomba et al. Manual lymph drainage with progressive arm exercises for auxiliary web syndrome after breast cancer surgery: a randomized controlled trial". DOI: 10.1093/ptj/ pzab314. PMID: 35079831.

# Incorporation of New Groups

In 2023, the incorporation and integration of 4 new research groups was approved. One of these groups is led by a teaching researcher at Universidad de Alcalá (UAH), and the rest are clinical groups that conduct their activity in Hospital Universitario Ramón y Cajal (HURYC).

The 4 groups meet the required criteria of excellence and professionalism and provide new subjects for specialisation and the possibility of creating potential synergies of interest between the rest of the already existing groups.

In compliance with the IRYCIS 2021-2025 Integration Plan, the Scientific Management and Research Committee favourably assessed its assignment to the Institute. Subsequently, the heads and directors of the corresponding areas assigned them the most suitable assignment areas for their scientific development and for their current and potential collaborations within the Institute.

## Area 4: Tools for Advanced Medicine

### Biomedical Data Science and Engineering (Established group)



Directed by **Dr Miguel Angel Sicilia Urbán**, professor of the Department of Computational Sciences of UAH. The group includes two other PIs from the same university and participating research staff belonging to the Central Support Unit (CSU) "Data Science" of IRYCIS, for which he is also responsible.

The group focuses its research on the application of computational methods to all types of problems in biomedical contexts, focusing on Artificial Intelligence (AI), encompassing any of the automated learning techniques, as well as any type of data, from images to natural language.

The group expects to establish synergies with other IRYCIS groups and hospital departments in the use of data science/engineering techniques and big data, so as to improve the quality of care and research, in collaboration with the Data Science Unit of IRYCIS.

## Area 5: Chronic pathologies and Surgery Research

### Surgical Applications of Drug Delivery systems (Established group)



Led by **Dr Federico Soria Gálvez**, Department Head of Experimental Surgery of HURYC, Head of the CSU-Animal facility and Experimental Surgery and Chair of the Ethics Committee on Animal Experimentation at our Hospital. The group has clinical/research staff belonging to various departments of the Hospital.

The group currently has active research and innovation projects, several of them competitive and funded by ISCIII and FIBioHRC, research staff contracts obtained in competitive tendering and notable training experience.

The group focuses its research along four lines:

- 1) Assessment and development of biodegradable ureteral stents
- 2) Assessment and development of drug-eluting ureteral stents
- 3) Evaluation and development of heart devices
- 4) Research in interventionist ultrasound techniques in gynaecology and Evaluation of new oncological approaches in gynaecology and endometriosis.

## Area 5: Chronic Pathologies and Surgery Research

### Rheumatology (Accessing group)



Led by **Dr Mónica Vázquez Díaz**, Department Head of Rheumatology at HURYC. The group has four main lines of research:

- 1) inflammatory arthropathy and development of biomarkers to predict treatment response
- 2) improvement of processes and implementation of clinical research in autoimmune and rare diseases
- 3) innovation in the management of rheumatic diseases using digital devices and artificial intelligence to improve patient follow-up and self-management
- 4) research into health results and quality of life of patients with rheumatic diseases

## Area 6: Epidemiology, Public Health and HealthCare

### Drug Utilisation And Health Outcomes Of Pharmacotherapy (Accessing group)



Directed by **Dr Ana Álvarez Díaz**, Department head of Pharmacy of HURYC. They constitute an expert group on drug therapy and the safe and effective use of medication, applying criteria of efficiency and innovation. Moreover, being a central department, they have experience in process management.

Their clinical areas with a greater presence of pharmacists are Elderly Patients (geriatrics), Infectious Diseases (HIV, HCV, HBV, PROA [antimicrobial stewardship programme]), Haematology, Rheumatology, Dermatology, Neurology and Emergencies.

Their main objective is to promote research of excellence aimed at improving patient care, health and quality of life and with transference of results to clinical practice.



# Associated Clinical Research Staff of IRYCIS (ACRS)

The large group of Associated Clinical Research Staff (ACRS) of IRYCIS consists of personnel from Hospital Universitario Ramón y Cajal who conduct research activity in the Institute, implementing either clinical trials (as both principal investigator and contributor) or research and/or competitive innovation projects, public or private, national or international, as well as signing indexed scientific publications. ACRS are grouped according to each of their departments or units of origin

## INDICATORS OF ACTIVITY 2023

- Staff: 338, from 47 different units/departments.
- 11 active competitive public projects led:
- 212 active clinical studies led
- 32 agreements and other active private contracts
- 215 publications
- Publications in Q1: 74 (34%)
- Publications in D1: 21 (10%)
- Publications led: 50 (23%)
- 6 supervised doctoral theses read
- 10 new innovative ideas in 2023

## CURRENT INDUSTRIAL AND INTELLECTUAL PROPERTY IN 2023

### ISRAEL NIETO

#### Databases of recipients of a kidney transplant

SOFTWARE REGISTRATION

1804196616064

### ANTONIO MENA

#### Manual of surgical emergencies 5th edition

CREATIVE COMMONS

1609029084269

### ANA BELÉN ROMOJARO DESIREÉ DE MIGUEL MARÍA TERESA GÓMEZ

#### Harness for moving patients with reduced mobility

PATENT

P201530553

### PABLO VALDERRÁBANO

#### Intelligent quantification of ultrasound images to improve diagnostic reliability

EUROPEAN PATENT

EP 22 382 403.8

### JOSÉ LUIS DE LA CALLE

#### Chronic pain: Electrical Quantitative Sensory Assessment System for Failed Back Surgery Syndrome

EUROPEAN PATENT

EP21383224.9

### TERESA PRESA MIGUEL CHIVA IRENE VICENTE

PREVEMAMA

BRAND REGISTRATION

M4126360

# Associated Clinical Research Staff of IRYCIS (ACRS)

# 22

List of associated clinical research staff in 2023

Associated clinical research staff	Unit Name
LUCÍA BASELGA SEGIMÓN	ACRS-Alergia
ALMUDENA CARRASCO MORENO	ACRS-Alergia
MARÍA CARMEN ARIÑO PALAO	ACRS-Anatomía Patológica
MARÍA ALEJANDRA CAMINO-A-LIZARRALDE AIZA	ACRS-Anatomía Patológica
SERGIO FONCUEVA CASADO	ACRS-Anatomía Patológica
ANTONIA NAVARRO CANTERO	ACRS-Anatomía Patológica
HÉCTOR GERARDO PIAN ARIAS	ACRS-Anatomía Patológica
ESTEFANÍA ROMIO DE LAS HERAS	ACRS-Anatomía Patológica
ANA SAIZ GONZÁLEZ	ACRS-Anatomía Patológica
CONSTANTINO VARONA CRESPO	ACRS-Anatomía Patológica
ISMAEL ALEJANDRO ACEVEDO BAMBAREN	ACRS-Anestesiología
JOSÉ LUIS DE LA CALLE REVIRIEGO	ACRS-Anestesiología
RAQUEL CASAS DAPENA	ACRS-Anestesiología
CRISTINA CERRO ZABALLOS	ACRS-Anestesiología
ILARIA CORBELLA	ACRS-Anestesiología
FERNANDO DOMÍNGUEZ PÉREZ	ACRS-Anestesiología
LEONOR GIJÓN MORENO	ACRS-Anestesiología
INÉS ISABEL DE LA HOZ POLO	ACRS-Anestesiología
ANA MARÍA MARISCAL ORTEGA	ACRS-Anestesiología
ASCENSIÓN MARTÍN GRANDE	ACRS-Anestesiología
NILDA MARTÍNEZ CASTRO	ACRS-Anestesiología
CRISTINA MEDRANO VIÑAS	ACRS-Anestesiología
MARÍA ANGÉLICA DE PABLO PAJARES	ACRS-Anestesiología
DIEGO JOSÉ PARISE ROUX	ACRS-Anestesiología
CÉSAR PÉREZ-CABALLERO MACARRÓN	ACRS-Anestesiología
GLORIA MARÍA SANTOS PÉREZ	ACRS-Anestesiología
NOELIA ÁLVAREZ DÍAZ	ACRS-Biblioteca
LUCÍA CHACÓN VARGAS	ACRS-Bioelectromagnetismo
MARÍA LUISA HERNÁNDEZ BULE	ACRS-Bioelectromagnetismo
MARÍA ANTONIA MARTÍNEZ PASCUAL	ACRS-Bioelectromagnetismo
ELENA TOLEDANO MACÍAS	ACRS-Bioelectromagnetismo
ALEJANDRO ÚBEDA MAESO	ACRS-Bioelectromagnetismo
IGNACIO ARRIBAS GÓMEZ	ACRS-Bioquímica Clínica
ANA MARÍA GARCÍA CANO	ACRS-Bioquímica Clínica
ANA GÓMEZ LOZANO	ACRS-Bioquímica Clínica
MIRIAM MENACHO ROMÁN	ACRS-Bioquímica Clínica
JOSÉ MANUEL DEL REY SÁNCHEZ	ACRS-Bioquímica Clínica



# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
SONIA RODRÍGUEZ FIÑAGA	ACRS-Bioquímica Clínica
MARTA ROSILLO CORONADO	ACRS-Bioquímica Clínica
MARÍA DEL CARMEN SANTIUSTE PUENTE	ACRS-Bioquímica Clínica
EDUARDO CASAS ROJO	ACRS-Cardiología
MARÍA JESÚS ESTEBAN SASTRE	ACRS-Cardiología
MARÍA PAZ GONZÁLEZ PORTILLA	ACRS-Cardiología
REBECA CARRIÓN MARCHANTE	ACRS-Cardiología Pediátrica
JOSÉ IGNACIO KLETT MINGO	ACRS-Cardiología Pediátrica
JOSÉ LUIS VÁZQUEZ MARTÍNEZ	ACRS-Cardiología Pediátrica
JORGE GÓMEZ-ARNAU RAMÍREZ	ACRS-Centro Salud Externos
MERCEDES LILIANA CASTRO PINTO	ACRS-Cirugía Cardíaca Adultos
SARA CORRAL MORENO	ACRS-Cirugía General y Digestiva
JOSÉ MARÍA FERNÁNDEZ CEBRIÁN	ACRS-Cirugía General y Digestiva
ANTONIO MENA MATEOS	ACRS-Cirugía General y Digestiva
IRENE MORENO MONTES	ACRS-Cirugía General y Digestiva
JAVIER MARÍA NUÑO VÁZQUEZ-GARZA	ACRS-Cirugía General y Digestiva
GLORIA RODRÍGUEZ VELASCO	ACRS-Cirugía General y Digestiva
ELENA BARANDA MANTEROLA	ACRS-Cirugía Maxilofacial
ÁNGELA BUENO DE VICENTE	ACRS-Cirugía Maxilofacial
ÁLVARO RANZ COLIO	ACRS-Cirugía Maxilofacial
CRISTINA CAVESTANY GARCÍA-MATRES	ACRS-Cirugía Torácica
NICOLÁS MORENO MATA	ACRS-Cirugía Torácica
ENRIQUE ARACIL SANUS	ACRS-Cirugía Vascular
CRISTINA BERNAL BERNAL	ACRS-Cirugía Vascular
SANDRA REDONDO LÓPEZ	ACRS-Cirugía Vascular
CARLOS GARCÍA REGAL	ACRS-Endocrinología y Nutrición
MARÍA OLGA GONZÁLEZ ALBARRÁN	ACRS-Endocrinología y Nutrición
MARTA MARCHÁN PINEDO	ACRS-Endocrinología y Nutrición
MALENA DEL OLMO REILLO	ACRS-Endocrinología y Nutrición
PAULA QUINTANA ZAPATA	ACRS-Endocrinología y Nutrición
PABLO VALDERRÁBANO HERRERO	ACRS-Endocrinología y Nutrición
SARA VEGAS VIEDMA	ACRS-Endocrinología y Nutrición
MIGUEL ANTÓN AMEZ SEGOVIA	ACRS-Enfermedades Infecciosas
LAURA LUNA GARCÍA	ACRS-Enfermedades Infecciosas
ALEJANDRA ÁLVAREZ FRANGANILLO	ACRS-Enfermería
MARÍA SONIA AMORES UMBERT	ACRS-Enfermería
ELENA ARCE SEGURA	ACRS-Enfermería
ANA CARRALERO MONTERO	ACRS-Enfermería

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
ANA MARÍA CASTILLO AYALA	ACRS-Enfermería
SARA FERNÁNDEZ GUIJARRO	ACRS-Enfermería
VERÓNICA MARTÍN GUERRERO	ACRS-Enfermería
ANA ISABEL SAYAGUÉS VEGA	ACRS-Enfermería
REGINA SERRADILLA RODRÍGUEZ	ACRS-Enfermería
MARÍA EMILIA TORRES GUERRERO	ACRS-Enfermería
MARÍA VILLARES OJEA	ACRS-Enfermería
ANA YANGUAS GÓMEZ	ACRS-Enfermería
AZUCENA CABELLO BRAVO	ACRS-Farmacia
JORGE FERNÁNDEZ FRADEJAS	ACRS-Farmacia
SERGIO JIMENO AGUADO	ACRS-Farmacia
MARÍA LAVANDEIRA PÉREZ	ACRS-Farmacia
ÁLVARO MOLINA RUANO	ACRS-Farmacia
MARÍA DEL ROSARIO PINTOR RECUENCO	ACRS-Farmacia
ADRIÁN POVEDA ESCOLAR	ACRS-Farmacia
SOFÍA SÁNCHEZ-IZQUIERDO YARNOZ	ACRS-Farmacia
MARÍA SANTOS SAN SEGUNDO	ACRS-Farmacia
LAURA SANZ PÉREZ	ACRS-Farmacia
LAURA CRESPO PÉREZ	ACRS-Gastroenterología
JOSÉ RAMÓN FORUNY OLCINA	ACRS-Gastroenterología
ELENA GARRIDO GÓMEZ	ACRS-Gastroenterología
JAVIER GRAUS MORALES	ACRS-Gastroenterología
LOURDES OÑA DÍEZ	ACRS-Gastroenterología
ELENA GÓMEZ ROSAS	ACRS-Genética Investigación
ESTHER AGEA VIVO	ACRS-Hematología
ENRIQUE ARRONTES CABALLERO	ACRS-Hematología
CRISTINA BLÁZQUEZ TALABÁN	ACRS-Hematología
ALBA GARCÍA ALONSO	ACRS-Hematología
MÓNICA MATILDE GONZÁLEZ SANZ	ACRS-Hematología
VIOLETA HERNÁNDEZ DE ARRIBAS	ACRS-Hematología
ANA JIMÉNEZ MARTÍN	ACRS-Hematología
JOSÉ LUIS LLAGUNO MARTÍN	ACRS-Hematología
VIKTORYIA VAITSEKHOVICH	ACRS-Hematología
ANA VALLÉS CARBONERAS	ACRS-Hematología
ISABEL CASTRO ESCORIAL	ACRS-Hospitalización
MARÍA JOSÉ MARTÍN HURTADO	ACRS-Hospitalización
MARTA NAJARRO DE LA PARRA	ACRS-Hospitalización
ÁNGELA CARRASCO SAYALERO	ACRS-Inmunología
JOSÉ LUIS CASTAÑER ALABAU	ACRS-Inmunología

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
ANA GARCÍA SOIDÁN GONZÁLEZ	ACRS-Inmunología
CARLOTA GARCÍA-HOZ JIMÉNEZ	ACRS-Inmunología
SONIA ORTEGA SÁNCHEZ	ACRS-Inmunología
CLAUDIA GERALDINE RITA	ACRS-Inmunología
VIVIAN LIZETH STEWART DEL CID	ACRS-Inmunología
AARON ROLANDO BLANDINO ORTÍZ	ACRS-Medicina Intensiva
SUSANA GARCÍA PLAZA	ACRS-Medicina Intensiva
JOSEFA AURORA LIETOR VILLAJOS	ACRS-Medicina Intensiva
RAÚL DE PABLO SÁNCHEZ	ACRS-Medicina Intensiva
SUSANA SÁNCHEZ ALONSO	ACRS-Medicina Intensiva
MARÍA CRUZ SORIANO CUESTA	ACRS-Medicina Intensiva
BEATRIZ DEL HOYO CUENDA	ACRS-Medicina Interna
JUAN CARLOS MURCIANO FERNÁNDEZ	ACRS-Medicina Interna
MARÍA DE LA CONCEPCIÓN SÁNCHEZ GALLEGO	ACRS-Medicina Interna
ODILE AJURIA ILLARRAMENDI	ACRS-Medicina Nuclear
ALBERTO MARTÍNEZ LORCA	ACRS-Medicina Nuclear
MARÍA DEL PRADO ORDUÑA DÍEZ	ACRS-Medicina Nuclear
MARGARITA CABELLO VALLEJO	ACRS-Microbiología
MARTA ÁLVAREZ NADAL	ACRS-Nefrología
ESMERALDA CASTILLO RODRÍGUEZ	ACRS-Nefrología
MARINA ANDREA COLLADO ALSINA	ACRS-Nefrología
MARTHA ELIZABETH DÍAZ DOMÍNGUEZ	ACRS-Nefrología
SANDRA NAYIBE ELÍAS TRIVIÑO	ACRS-Nefrología
MILAGROS FERNÁNDEZ LUCAS	ACRS-Nefrología
MARÍA CRISTINA GALEANO ÁLVAREZ	ACRS-Nefrología
ANTONIO GOMIS COUTO	ACRS-Nefrología
SARA JIMÉNEZ ÁLVARO	ACRS-Nefrología
VANESSA LOPES MARTÍN	ACRS-Nefrología
MAITE ELIZABETH RIVERA GORRÍN	ACRS-Nefrología
NURIA MARÍA RODRÍGUEZ MENDIOLA	ACRS-Nefrología
MARÍA TERESA TENORIO CAÑAMAS	ACRS-Nefrología
ROSA MARÍA ESTEBAN CALVO	ACRS-Neumología
ESTHER SAIZ RODRIGO	ACRS-Neumología
SILVIA SÁNCHEZ CUELLAR	ACRS-Neumología
MIRIAM NOVILLO PÉREZ	ACRS-Neurobiología Investigación
RODRIGO CARRASCO MORO	ACRS-Neurocirugía
LUIS LEY URZAIZ	ACRS-Neurocirugía
ANTONIO JESÚS PEDRERA MAZARRO	ACRS-Neurofisiología Experimental

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
CÉSAR AGUILERA VEGA	ACRS-Neurología
ARACELI ALONSO CÁNOVAS	ACRS-Neurología
NURIA GARCÍA BARRAGÁN	ACRS-Neurología
GUILLERMO GARCÍA RIBAS	ACRS-Neurología
DANIEL GONZÁLEZ NIETO	ACRS-Neurología
JOSÉ LUIS LÓPEZ-SENDÓN MORENO	ACRS-Neurología
JUAN CARLOS MARTÍNEZ CASTRILLO	ACRS-Neurología
SILVIA MOREL FERNÁNDEZ	ACRS-Neurología
OTILIA NAVARRO CARRIÓN	ACRS-Neurología
ANA ISABEL PÉREZ MACÍAS	ACRS-Neurología
PAULA PÉREZ TORRE	ACRS-Neurología
AMELIA SÁNCHEZ CAPELO	ACRS-Neurología
SUSANA VALENCIANO ROZALÉN	ACRS-Neurología
ESTHER CIANCAS FUENTES	ACRS-Oftalmología
CRISTINA LÓPEZ CABALLERO	ACRS-Oftalmología
JOSÉ MARÍA RODRÍGUEZ DEL VALLE	ACRS-Oftalmología
JAIME TEJEDOR FRAILE	ACRS-Oftalmología
RAQUEL FUENTES MATEOS	ACRS-Oncología Médica
PILAR GARRIDO LÓPEZ	ACRS-Oncología Médica
MARÍA GION CORTÉS	ACRS-Oncología Médica
ANA GÓMEZ RUEDA	ACRS-Oncología Médica
CARMEN GUILLÉN PONCE	ACRS-Oncología Médica
YOLANDA LAGE ALFRANCA	ACRS-Oncología Médica
IÑIGO MARTÍNEZ DELFRADE	ACRS-Oncología Médica
MARÍA EUGENIA OLMEDO GARCÍA	ACRS-Oncología Médica
JAVIER RUMÍN CAMPILLO	ACRS-Oncología Médica
CRISTINA SAAVEDRA SERRANO	ACRS-Oncología Médica
JUAN JOSÉ SERRANO DOMINGO	ACRS-Oncología Médica
EVA FERNÁNDEZ LIZARBE	ACRS-Oncología Radioterápica
RAÚL HERNANZ DE LUCAS	ACRS-Oncología Radioterápica
ASUNCIÓN HERVÁS MORÓN	ACRS-Oncología Radioterápica
FERNANDO LÓPEZ CAMPOS	ACRS-Oncología Radioterápica
MARGARITA MARTÍN MARTÍN	ACRS-Oncología Radioterápica
MERCEDES MARTÍN SÁNCHEZ	ACRS-Oncología Radioterápica
DANIEL MELERO GARCÍA	ACRS-Oncología Radioterápica
JOSÉ ALFREDO POLO RUBIO	ACRS-Oncología Radioterápica
SONSOLES SANCHO GARCÍA	ACRS-Oncología Radioterápica
LOURDES MONTES-JOVELLAR GONZÁLEZ	ACRS-Otorrinolaringología

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
ELENA MORA RIVAS	ACRS-Otorrinolaringología
ALFONSO SANTAMARÍA GADEA	ACRS-Otorrinolaringología
GONZALO DE LOS SANTOS GRANADOS	ACRS-Otorrinolaringología
AMAYA BELANGER QUINTANA	ACRS-Pediatría
ENRIQUE BLITZ CASTRO	ACRS-Pediatría
RAQUEL BUENACHE ESPARTOSA	ACRS-Pediatría
GUSTAVO LORENZO SANZ	ACRS-Pediatría
MARÍA MARTÍN FRÍAS	ACRS-Pediatría
ANA MORALES TIRADO	ACRS-Pediatría
SARAY REKARTE GARCÍA	ACRS-Pediatría
ANA TABARES GONZÁLEZ	ACRS-Pediatría
MARINA FERNÁNDEZ ESCRIBANO	ACRS-Prevención de Riesgos laborales
CARMEN DÍAZ SASTRE	ACRS-Psiquiatría
PATRICIA FERNÁNDEZ MARTÍN	ACRS-Psiquiatría
LETICIA LEÓN QUISMONDO	ACRS-Psiquiatría
CARMEN LOECK DE LA PUERTA	ACRS-Psiquiatría
CARLOS RIAZA BERMUDO-SORIANO	ACRS-Psiquiatría
MIGUEL VEGA PIÑERO	ACRS-Psiquiatría
FELICIANO GARCÍA VICENTE	ACRS-Radiofísica
JAVIER BLÁZQUEZ SÁNCHEZ	ACRS-Radiología
ELENA CANALES LACHÉN	ACRS-Radiología
EDUARDO FANDIÑO BENITO	ACRS-Radiología
LAURA GALLEGO MARTÍN	ACRS-Radiología
ANA GARCÍA DE VICENTE	ACRS-Radiología
RAQUEL GARCÍA LATORRE	ACRS-Radiología
MIGUEL ÁNGEL GÓMEZ BERMEJO	ACRS-Radiología
MARINA HERRERO HUERTAS	ACRS-Radiología
JESÚS JAVIER MARTÍN PINACHO	ACRS-Radiología
JOSÉ CARLOS MÉNDEZ CENDÓN	ACRS-Radiología
JAIME MOUJIR LOPEZ	ACRS-Radiología
MARÍA JESÚS MUÑOZ BELTRÁN	ACRS-Radiología
MIGUEL NAVARRO FERNÁNDEZ-HIDALGO	ACRS-Radiología
CATALINA NIETO GÓNGORA	ACRS-Radiología
INES PECHARROMÁN DE LAS HERAS	ACRS-Radiología
SILVIA PÉREZ RODRIGO	ACRS-Radiología
CARMEN PICÓN SERRANO	ACRS-Radiología
TERESA PRESA ABOS	ACRS-Radiología
SANTIAGO RESANO PARDO	ACRS-Radiología

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
MARÍA VANESA DE SANTOS SERRANO	ACRS-Radiología
OLGA MARÍA SANZ DE LEÓN	ACRS-Radiología
CARLOS SUEVOS BALLESTEROS	ACRS-Radiología
IRENE VICENTE ZAPATA	ACRS-Radiología
BELÉN ALONSO ÁLVAREZ	ACRS-Rehabilitación
ANA GLORIA GÓMEZ GÓMEZ	ACRS-Rehabilitación
MARÍA TERESA GÓMEZ GONZÁLEZ	ACRS-Rehabilitación
EZEQUIEL HIDALGO GALACHE	ACRS-Rehabilitación
IRENE LÁZARO NAVAS	ACRS-Rehabilitación
LUIS LÓPEZ GONZÁLEZ	ACRS-Rehabilitación
CAROLINA DE MIGUEL BENADIBA	ACRS-Rehabilitación
MARÍA DESIRÉE DE MIGUEL MORALES	ACRS-Rehabilitación
BLANCA PALOMINO AGUADO	ACRS-Rehabilitación
MÓNICA PÉREZ FERREIRO	ACRS-Rehabilitación
ELENA PÉREZ GARCÍA	ACRS-Rehabilitación
CAROLINA PRADOS CABIEDAS	ACRS-Rehabilitación
ANA BELÉN ROMOJARO RODRÍGUEZ	ACRS-Rehabilitación
MARÍA SANTOS OLLETE	ACRS-Rehabilitación
MARÍA NATIVIDAD SEISDEDOS NÚÑEZ	ACRS-Rehabilitación
JAVIER DOMÍNGUEZ BARAHONA	ACRS-Reumatología
SERGIO FERNÁNDEZ ROLDÁN	ACRS-Traumatología
PALOMA MARTÍNEZ UREÑA	ACRS-Traumatología
ROQUE EMILIO PÉREZ EXPÓSITO	ACRS-Traumatología
RAQUEL RUÍZ DÍAZ	ACRS-Traumatología
MIGUEL ANGEL RUIZ IBÁN	ACRS-Traumatología
IGNACIO DE RUS AZNAR	ACRS-Traumatología
JUAN CARLOS SÁNCHEZ HERNÁNDEZ	ACRS-Traumatología
CARLOS VAQUERO COMINO	ACRS-Traumatología
ROSA MARÍA VEGA RODRÍGUEZ	ACRS-Traumatología
VÍCTOR MANUEL DE LA CUEVA GARCÍA	ACRS-UCA/UCS
BEGOÑA CUEVAS SÁNCHEZ	ACRS-UCA/UCS
VAL FERNÁNDEZ LANZA	ACRS-UCA/UCS
MIGUEL AURELIO LLORENTE ARTERO	ACRS-UCA/UCS
LUZ LETICIA OLAVARRIETA SCAPPINI	ACRS-UCA/UCS
LAURA RODRÍGUEZ FERNÁNDEZ	ACRS-UCA/UCS
MÓNICA AGUILAR JIMÉNEZ	ACRS-UCA_Agencia Ensayos Clínicos
MARÍA EUGENIA ALDAMA MARTÍN	ACRS-UCA_Agencia Ensayos Clínicos
MARÍA FERRE SAINZ	ACRS-UCA_Agencia Ensayos Clínicos

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
MARÍA ÁNGELES GÁLVEZ MÚGICA	ACRS-UCA_Agencia Ensayos Clínicos
IRENE GARCÍA BARTOLOMÉ	ACRS-UCA_Agencia Ensayos Clínicos
ISABEL LÓPEZ ALGARRA	ACRS-UCA_Agencia Ensayos Clínicos
MARÍA DEL BREZO MARTÍN MARTÍNEZ	ACRS-UCA_Agencia Ensayos Clínicos
MARÍA SOLEDAD MIRANDA ROLDÁN	ACRS-UCA_Agencia Ensayos Clínicos
ITZIAR DE PABLO LÓPEZ DE ABECHUCO	ACRS-UCA_Agencia Ensayos Clínicos
MARÍA PÉREZ MONGE	ACRS-UCA_Agencia Ensayos Clínicos
CARLOS PRADOS HIDALGO	ACRS-UCA_Agencia Ensayos Clínicos
JOSÉ DANIEL SAN ANDRÉS MUÑOZ	ACRS-UCA_Agencia Ensayos Clínicos
MIRIAM SAZ DELGADO	ACRS-UCA_Agencia Ensayos Clínicos
MÓNICA CASTRO CAMARERO	ACRS-UCA_Animalario
COVADONGA MAESE DEL VALLE	ACRS-UCA_Animalario
ANA ISABEL ORTIZ CHÉRCOLES	ACRS-UCA_Animalario
SONIA CAMAÑO PÁEZ	ACRS-UCA_Biobanco
BÁRBARA LUNA SÁNCHEZ	ACRS-UCA_Biobanco
ESTRELLA MONROY RODRÍGUEZ	ACRS-UCA_Biobanco
SARA MONTAÑA SÁNCHEZ	ACRS-UCA_Biobanco
LORIEN SOTO GARCÍA	ACRS-UCA_Biobanco
ANA MARÍA TORRES REDONDO	ACRS-UCA_Biobanco
LUCÍA ALMAGRO MORALES	ACRS-UCA_UCSEC
IRENE ÁLVAREZ GARCÍA	ACRS-UCA_UCSEC
SARA ARAGONESES LÓPEZ	ACRS-UCA_UCSEC
ROSA MARÍA ARAS LÓPEZ	ACRS-UCA_UCSEC
MARÍA ARRANZ SÁNCHEZ	ACRS-UCA_UCSEC
ASIER ARTAZCOZ CALVO	ACRS-UCA_UCSEC
MARÍA CANTÓN NAVARRO	ACRS-UCA_UCSEC
LAURA CARACUEL CANO	ACRS-UCA_UCSEC
CRISTINA CARRERA ORTIZ	ACRS-UCA_UCSEC
LUCÍA CASTILLO NÚÑEZ	ACRS-UCA_UCSEC
RUTH CORRALES RECIO	ACRS-UCA_UCSEC
LAURA CRESPO MUÑOZ	ACRS-UCA_UCSEC
MIRIAM ESPI PECHARROMÁN	ACRS-UCA_UCSEC
ISABEL FARHANE MEDINA	ACRS-UCA_UCSEC
GLORIA FERNÁNDEZ CURESES	ACRS-UCA_UCSEC
HELENA FERRER ARAPILES	ACRS-UCA_UCSEC
JAVIER GALÁN MARTÍNEZ	ACRS-UCA_UCSEC
DANIEL GARCÍA PALOS	ACRS-UCA_UCSEC
CRISTINA MARINA GARCÍA RIVEIRO	ACRS-UCA_UCSEC

# Associated Clinical Research Staff of IRYCIS (ACRS)

Associated clinical research staff	Unit Name
PALOMA MARÍA GARCÍA ALCALDE	ACRS-UCA_UCSEC
LEIRE GÓMEZ BARRIO	ACRS-UCA_UCSEC
OLAYA HERNÁNDEZ ESTEBAN	ACRS-UCA_UCSEC
SILVIA HERNÁNDEZ FERNÁNDEZ	ACRS-UCA_UCSEC
ILUMINADA HERNÁNDEZ BLÁZQUEZ	ACRS-UCA_UCSEC
JUAN HERRERA PÉREZ	ACRS-UCA_UCSEC
MARGARET LARIO MARTÍNEZ	ACRS-UCA_UCSEC
BLANCA LÓPEZ DE BORBÓN	ACRS-UCA_UCSEC
ROCÍO LÓPEZ PÉREZ	ACRS-UCA_UCSEC
ÁLVARO MARTÍN ZAPATA	ACRS-UCA_UCSEC
MARÍA DEL PILAR MELLADO GARCÍA	ACRS-UCA_UCSEC
SANDRA MERINO ÁVILA	ACRS-UCA_UCSEC
PAULA MOLINA PACHECO	ACRS-UCA_UCSEC
MARTA NAVARRO CARMENA	ACRS-UCA_UCSEC
MARÍA DOLORES OCHOA CASTILLO	ACRS-UCA_UCSEC
BEATRIZ PARDO DE VERA GARCÍA	ACRS-UCA_UCSEC
JULIA PÉREZ YENES	ACRS-UCA_UCSEC
RICARDO DE PLASENCIA MASCUÑANA	ACRS-UCA_UCSEC
ALBERTO RAMÍREZ FOLLARAT	ACRS-UCA_UCSEC
BELÉN RAMÍREZ GONZÁLEZ	ACRS-UCA_UCSEC
MARÍA TERESA RODRÍGUEZ RISUEÑO	ACRS-UCA_UCSEC
SARA RUÍZ PÉREZ	ACRS-UCA_UCSEC
DAVID SÁNCHEZ RUBIO	ACRS-UCA_UCSEC
MARÍA URRUTIA SÁNCHEZ	ACRS-UCA_UCSEC
JULIO VARGAS CÁMARA	ACRS-UCA_UCSEC
ANA JOSEFA VILLA ARÉVALO	ACRS-UCA_UCSEC
FERNANDO ZELEDÓN TOSTADO	ACRS-UCA_UCSEC
MARÍA JESÚS LUCIO PÉREZ	ACRS-Unidad de Identidad de Género
PILAR DE NICOLÁS GAYA	ACRS-Unidad de Trasplante
JOAQUÍN CARREÑO GLARIA	ACRS-Urgencias
NOIVA DÍAZ GARCÍA	ACRS-Urgencias
MARÍA JESÚS ESTÉVEZ RUEDA	ACRS-Urgencias
JAVIER ALBERTO MARCOS ALBA	ACRS-Urgencias
AGUSTÍN FRAILE POBLADOR	ACRS-Urología





INSTITUTO  
RAMÓN Y CAJAL DE  
INVESTIGACIÓN SANITARIA

**IR y CIS**




UNIVERSIDAD  
**COMPLUTENSE**  
MADRID

**UAM**

Universidad Autónoma  
de Madrid



Universidad  
de Alcalá



**Hospital Universitario  
Ramón y Cajal**



Fundación para la Investigación Biomédica  
del Hospital Universitario  
Ramón y Cajal



**Unión Europea**

FONDO EUROPEO DE  
DESARROLLO REGIONAL  
*Una manera de hacer Europa*  
FONDO SOCIAL EUROPEO  
*El FSE invierte en tu futuro*