



# SCIENTIFIC REPORT 2024

*"Any person could, if they were so inclined, be the sculptor of their own brain" Santiago Ramón y Cajal*

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IRYCIS

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**SCIENTIFIC  
REPORT**

**2024**

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# TABLE OF CONTENTS

01	A Message from the Scientific Director .....	6
02	Mission, Vision and Values. ....	8
03	Structure and Organization .....	9
04	FIBioHRC in Figures. ....	16
05	CEIm-HURYC. ....	20
06	CEEA-HURYC .....	22
07	IRYCIS Quality Committee .....	24
08	IRYCIS Human Resources .....	26
09	Equality at IRYCIS .....	28
10	IRYCIS Activity in Figures .....	31
11	Communication .....	34
12	Top Ten Publications and Clinical Guidelines .....	37
13	Clinical Guidelines and Consensus Documents .....	38
14	Major Milestones of the IRYCIS .....	44
15	Impact on Society .....	51
16	Innovation Unit. ....	60
17	Internationalization .....	64
18	Main Networks, Platforms, Alliances and Consortiums .....	71
19	Training .....	77
20	Scientific and Technical Services by IRYCIS in its Hospital .....	80
	Animal Facility and Experimental Surgery .....	81
	Biobank and Biomodels .....	82
	Clinical Biostatistics .....	85
	Lipidomic and proteomic Characterization .....	86
	Translational Genomics and Bioinformatics .....	87
	Clinical Research and Clinical Trials Unit. ....	89
	Biomarkers and Therapeutic Targets .....	90
	Aptamers .....	92
	Data Science .....	94
	Microscopy, Histology, and Comparative Pathology .....	95
	Support for Phase II-IV Clinical Studies and Trials .....	96
	Other Scientific and Technical Services .....	97

<b>21</b>	<b>Priority Areas for IRYCIS</b>	<b>100</b>
	AREA 1: Neurosciences, Sensory Organs and Mental Health	102
	Multiple Sclerosis Group	104
	Neurodegenerative Diseases: Pathogenic Mechanisms Group	107
	Genetics and Sensorineural Pathophysiology Group	109
	Neurodegenerative Diseases: Therapy Development Group	112
	Psychiatric Diseases Group	115
	Neuroproteins-Stroke Group	117
	Ophthalmology Group	120
	Experimental Dermatology and Cutaneous Biology Group	123
	Visual Neurophysiology Group	126
	AREA 2: Microbiology, Immunology and Infection	128
	Infectious Diseases Group	130
	Biology and Evolution of Microorganisms Group	133
	Health Outcomes Research Group	137
	Translational Individualized Medicine in Inflammation and Cancer Group	140
	AREA 3: Cancer	142
	Molecular Pathology of Cancer Group	144
	Biomarkers and Personalized Approach to Cancer Group (BioPAC)	146
	Intestinal Morphogenesis and Homeostasis Group	149
	Translational Haematology Group	151
	AREA 4: Tools for Advanced Medicine	153
	Nanomaterials for Bioimaging Group	155
	Aptamers Group	157
	Biomarkers and Therapeutic Targets Group	160
	Tissue Engineering and Regenerative Medicine Group	163
	Biomedical Research Group on Biomaterials and Healing (GIBBYC)	165
	Biologic Chemistry Group	168
	Dendrimers for Biomedical Applications Group	170
	Science and Data Engineering Group	173
	AREA 5: Chronic Conditions and Surgery Research	175
	Lipid Metabolism Group	177
	Diabetes, Obesity, and Human Reproduction Group	179
	Respiratory Diseases Group	181
	Cardiovascular Diseases Group	183
	Paediatrics Group	185
	Metabolic-Endocrine Digestive Surgery and Nutrition	187
	Multisystemic Diseases Group	190
	Liver and Digestive Diseases Group	193
	Geriatrics Group	195
	Surgical Research on Urology and Renal Transplant Group	197
	Renal and Vascular Physiology and Physiopathology Group	200
	Group for Diagnosis and Treatment of Allergic Conditions	202
	Rheumatology Group	205
	Surgical Applications of Drug Delivery Systems Group	207
	AREA 6: Epidemiology, Public Health and Healthcare	209
	Epidemiology and Clinical Biostatistics Group	211
	Pharmacoepidemiology Group	213
	Physiotherapy in Women's Health Processes Group	215
	Drug Utilization and Health Outcomes of Pharmacotherapy Group	217
	Incorporation of New Research Groups	219
<b>22</b>	<b>Clinical Research Staff Associated to IRYCIS</b>	<b>221</b>



# A Message from the Scientific Director

It is with enormous pride that I present the **2024 Annual Scientific Report** of our Institute, prepared completely by our effective and committed Foundation. This year, an original “plasticine” computer graphic has been included, as a nod to the synaptic plasticity that symbolizes the ability of adaptation that must define us as scientists faced with increasingly dynamic and demanding settings.

I present this Annual Report as Scientific Director, now accompanied in my management tasks by **our new Deputy Director, Dr. González Muñoz**, appointed by our Governing Board. His scientific rigour and innovative drive are further strengthened by his human quality. Welcome to the control bridge, Víctor, and thank you for your loyalty, generosity, and commitment to the IRYCIS.

The incorporation of the Scientific Deputy Director is a very significant contribution to reinforcing the Institute, and to prepare the new strategic plan that must be developed throughout the next annuality, thus providing continuity to the current **ATENEA 2021-2025** plan.

Within an intense activity context, we want to acknowledge once more the valuable work by our advisory bodies, the Research Committee and the External Scientific Committee, in terms of making strategic decisions. I also extend my gratitude to the Training, Quality, Innovation and Equality Committees, as well as to the support groups for the research and communication staff. We must also highlight **the creation of the sustainability group as one of the milestones of 2024**, a key step in order to anticipate future challenges.

In line with the reinforcement intended for the design of the new strategic plan, as an answer to the great challenges in healthcare, there has been a renewal in the dynamization positions of scientific areas and the groups included: **our new area coordinators**. Our thanks to their predecessors, and welcome to those brave ones who have accepted this great challenge.

And speaking about challenges, this year the **climate change** has demonstrated its most devastating impact in Spain, reminding us of the urgency to address it from a scientific point of view. In this context, the IRYCIS, as an active member of EATRIS, **has led the Spotlight Program of the Spanish Node**, gathering over 27 Healthcare Research Institutes in order to analyse the impact of climate change on human health. Some of the effects detected are: the worsening of chronic and respiratory diseases, the reappearance of infectious diseases, and the need to integrate biomedical, clinical, meteorological and social data. This line of work is still active, and will be a priority in the next strategic plan, ATENEA 2026-2030.

Throughout 2024, our two strategic initiatives, **“MISION IRYCIS 2030”** and **“FORTALECE-FAR”**, have continued moving forward; the first one already has 10 upcoming projects and its own relevant investment, and in the second one, 6 initiatives are moving towards meeting their goals and the ISCIII indicators.

As usual, our Institute has maintained its open and collaborative nature, acting as a **meeting space for research staff, patients and citizens**, through the multiple events held.



Some of the most outstanding are: the 9th Health Hackathon, the Stroke Workshop during the Science and Innovation Week, the 10th Anniversary of ACANPAN, and the 4th Health Research Conference of the Community of Madrid.

All this frantic activity as an Institute can be conducted due to the commitment of all of us who are part of this IRYCIS family: over **1,290** persons committed to research, most of them included in the **47 research groups** that we already have and the 4 groups incorporated this year. This has made it possible for us to break records once more in our indicators: **21 new competitive HR contracts, over 1,400 active projects, 1,265 publications** with 59% of them within the first quartile, 147 upcoming innovation projects, which represent 1.2 million euros obtained in competitive innovation tendering, over **1,190 active clinical trials**, and **37 European projects and initiatives**, 3 of them coordinated by our Institution.

Training has undergone a significant increase, both in quantity and quality, with **1,097 hours of training delivered** in total, consolidated in the new virtual formats. We must also highlight the intense academic activity of the Institute, with **59 doctoral theses directed and 41 presented** by IRYCIS members. We must add to this the acknowledgment achieved by the research community, with **94 awards** granted to projects developed within the Institute setting.

One more year, we must proudly emphasize the leadership of IRYCIS in **global science**. We are still an international reference regarding the approach to major health challenges: infectious, chronic and minority diseases (including tu-

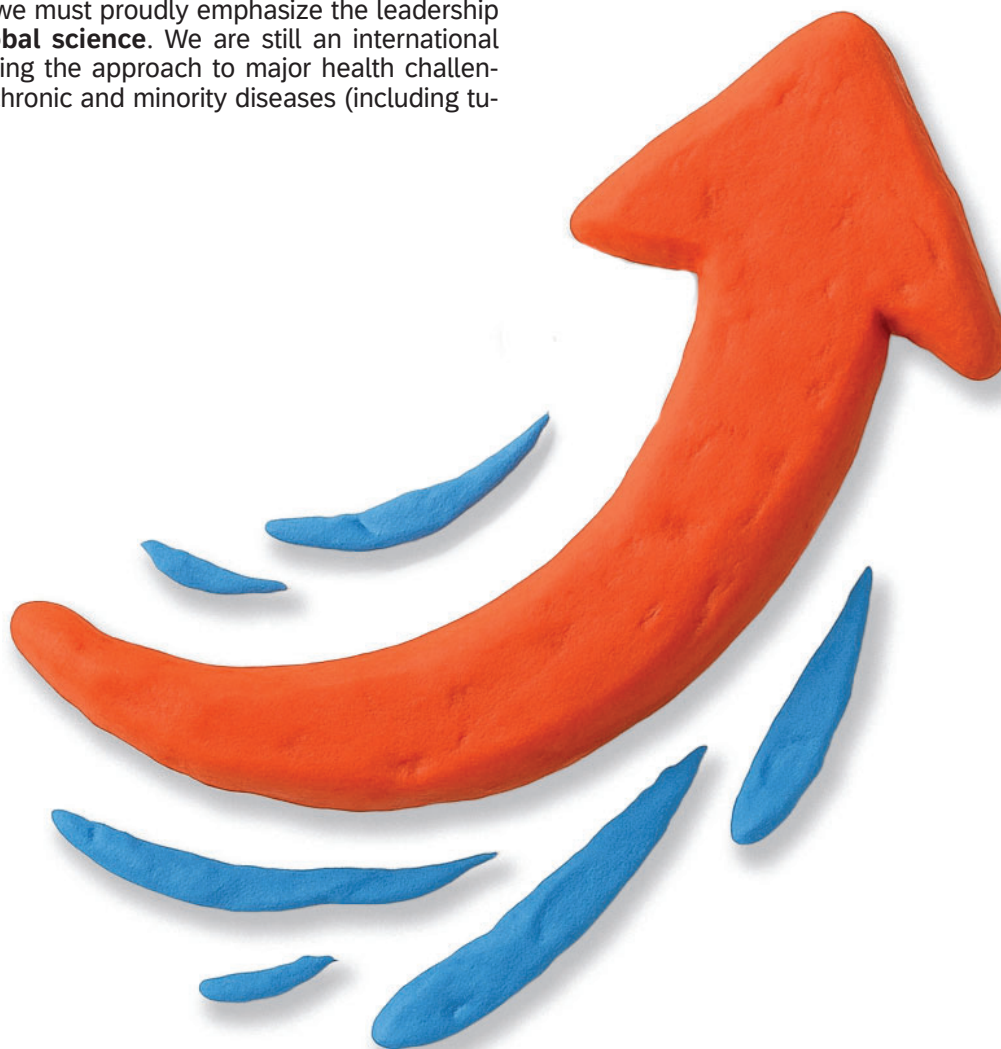
mours with low incidence and high mortality), antimicrobial resistance, ageing, data sciences and artificial intelligence, surgical approaches and simulation.

All these achievements show the constant commitment of our research staff to the improvement of the lives of patients and citizens, increasing the **impact** of IRYCIS and positioning it as a **“gamechanger” in personalized medicine**.

When you close this presentation and open the pages of our **Scientific Report**, let your emotions speak. Each achievement shown here is the result of our constant effort during the past 366 days. This is not just a report; it is the testimony of our joint work which makes us proud. I invite you to go through its pages and celebrate together the milestones achieved. Because being a part of **IRYCIS** is not one more attribute, it means carrying **excellence and commitment** in our DNA.

**Congratulations, we are unstoppable!**

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



# Mission, vision and values

## Mission

To be a space committed to biomedical research of excellence, aimed at generating knowledge useful for the identification and treatment of current or potential diseases and, therefore, with a strong translational nature and the vocation to become a reference at national and international level, applying a philosophy of quality and ongoing improvement in all its actions.

## Vision

To be a leader in basic, clinical and translational scientific research, being a trustworthy reference for society, for the scientific community, and for public and private institutions at national and international level.

To make a significant contribution to the generation of new knowledge, to its application in healthcare practice and the business setting, and to the training of new biomedical researchers.

To identify, through a search in its singularities, a sign of scientific identity which will allow to provide additional value to the national and international scenario of scientific institutions and centers for biomedical research of excellence.

To work in collaboration with society in the permanent search for social impact of the R&D&I of our Institute.

## Values

Search for excellence

Leadership

Innovation and direction towards the transfer of outcomes

Internationalization

Orientation towards the health problems and interests of the population

Basic, clinical and multidisciplinary collaboration

Technical training

Efficient management

Comprehensive quality

Professional acknowledgement

Dissemination of research activities





# Structure and Organization

## Members of IRYCIS

The Ramón y Cajal Health Research Institute consists of the Health System of the Community of Madrid, the University of Alcalá, the Complutense University of Madrid, the Autonomous University of Madrid, the Foundation for Biomedical Research of the Ramón y Cajal University Hospital, and the General Directorate of Research and Teaching of the Community of Madrid, by agreement signed on December 15th, 2009. This Institutional Agreement was renewed on December 14th, 2017, and renewed for the last time in February 2022, reinforcing said alliance for an indefinite period.

### Health System of Madrid

Through the Ramón y Cajal University Hospital, which forms the basic core of the Institute

### Universidad de Alcalá

The University that grants its University nature to the Hospital, and contributes with eight groups to IRYCIS

### Universidad Complutense

Through the participation of two research groups

### Universidad Autónoma de Madrid

Through the participation of four research groups

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

As the single management structure of the Institute

### General Directorate of Research and Teaching

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

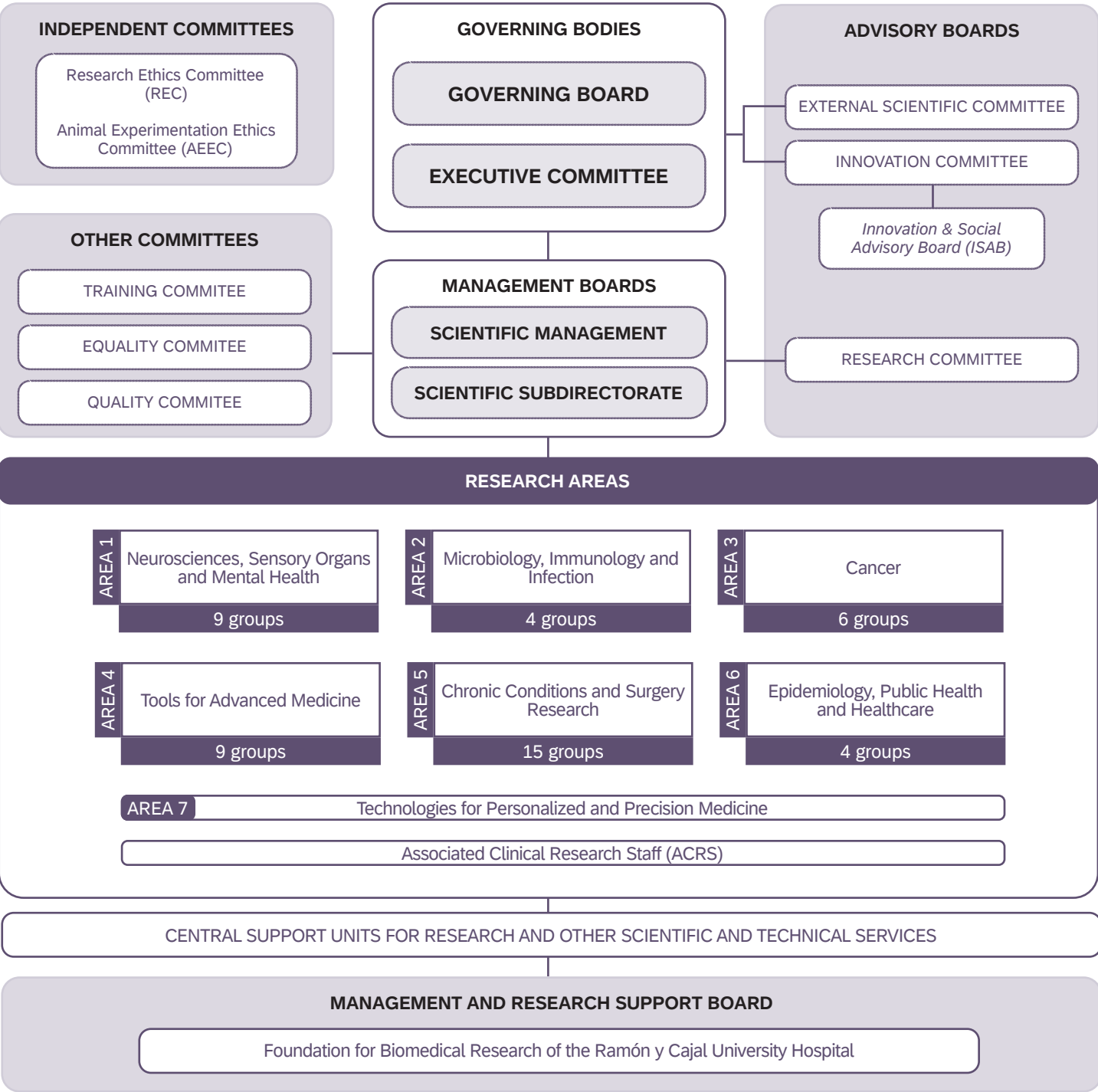


## Organizational Structure

Research in IRYCIS is organized into six priority thematic areas with 47 research groups: 34 are consolidated, 9 are established, and 4 are access groups.

The **consolidated and established groups** are formed by at least one Principal Investigator (PI), that is to say, the PI of a competitive public project, national or international, active within the last 2 years; and they must demonstrate competitive public funding overlapping during at least the last 6 years, if consolidated, or 3 years for established. Additionally, they must show evidence of scientific production during the last 5 years, with over 70% of the publications led positioned at Q1 and Q2 (or at D1 if collaborations), if consolidated; the percentage will be 50% for those established. The **access groups** must demonstrate at least one application as PI for a competitive public project, either national or international, during the last 2 years, and a scientific production with 40% of publications led during the last 5 years.

The **Associated Clinical Research Staff (ACRS)** also contributes to research in IRYCIS: this consists in the healthcare staff of the Ramón y Cajal University Hospital who are not assigned to any IRYCIS group, but have developed competitive research and/or innovation projects during the last 3 years, either public or private, national or international, clinical trials as PIs or contributors, as well as signing indexed scientific publications.



# Structure and Organization

03

## Membership of the Governing and Advisory Boards of IRYCIS

### Governing Board

#### CHAIRMAN

CARLOS MINGO RODRÍGUEZ

Managing Director of the Ramón y Cajal University Hospital.  
Chairman of the FIBioHRC.

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Chairman for Healthcare Matters. University of Alcalá.

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Specialties. University of Alcalá.

PEDRO DE LA VILLA POLO

University Professor. Systems Biology. University of Alcalá.

ISMAEL GALVE ROPERH

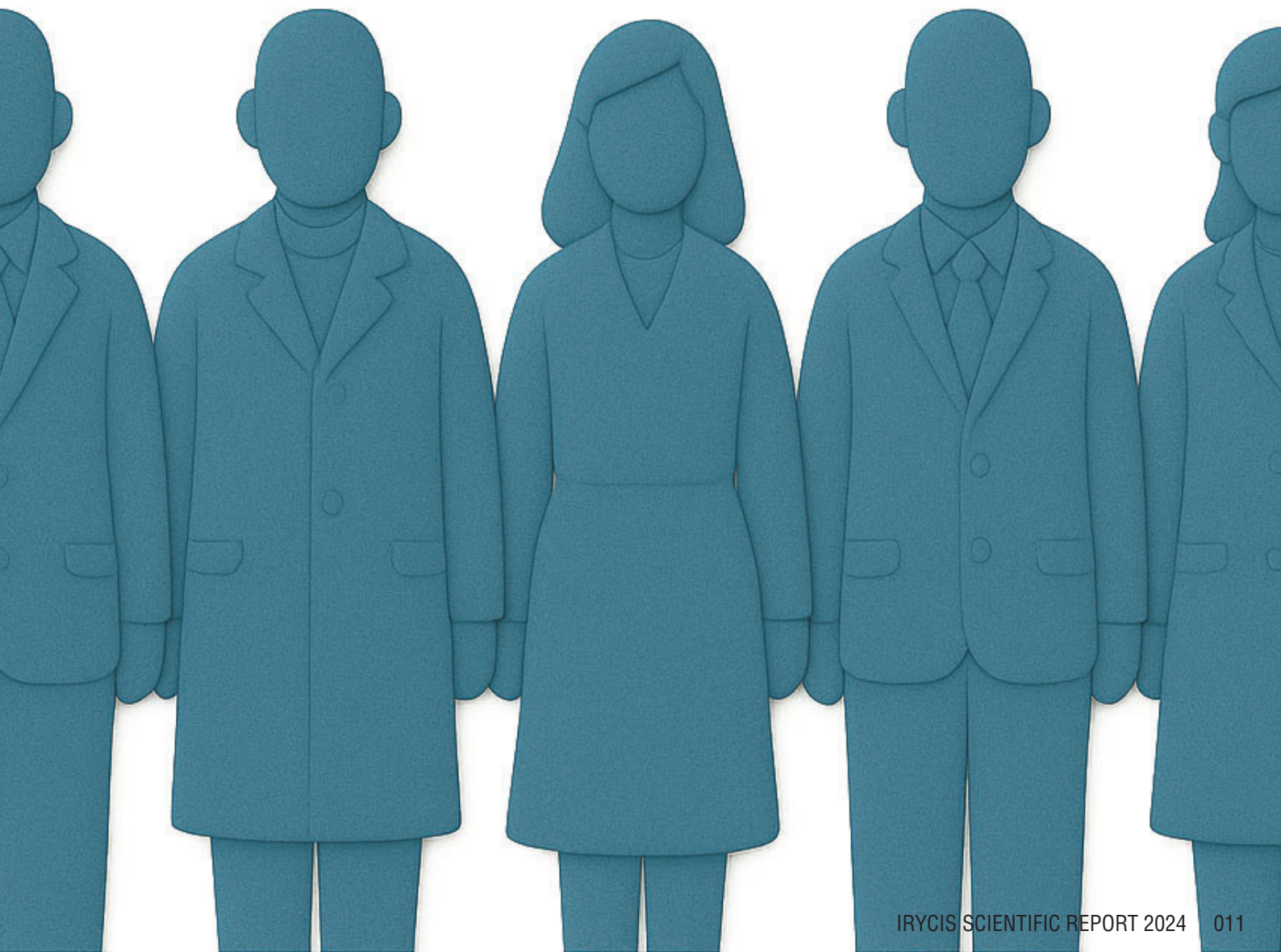
Tenured Professor. Department of Biochemistry and Molecular  
Biology. School of Chemistry Sciences. Complutense University  
of Madrid.

DANIEL JAQUE GARCÍA

Deputy Director of Scientific Policy. Autonomous University of  
Madrid.

M<sup>a</sup> LAURA GARCÍA BERMEJO

Director of IRYCIS. Senior Researcher. Chairwoman of the Re-  
search Committee.





# Structure and Organization

03

## Scientific Director

M<sup>a</sup> LAURA GARCÍA BERMEJO

Senior Researcher. FIBioHRC.

Chairwoman of the Scientific Committee of FIBioHRC.

## Scientific Deputy Director

VÍCTOR MANUEL GONZÁLEZ MUÑOZ

Senior Researcher. FIBioHRC.

## External Scientific Committee

LLUÍS BLANCH TORRA

Director of Innovation at the Parc Taulí Hospital. President of the Spanish Society of Intensive Medicine. Corporació Sanitària Parc Taulí.

JAVIER DEFELIPE OROQUIETA

Research Professor. Cajal Institute (CSIC).

PAULA ECHEVARRÍA SÁNCHEZ

Lawyer. Political Incidence and Advocacy at the Patient Organizations Platform.

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

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

JESUALDO TOMÁS FERNÁNDEZ BREIS

Researcher in charge of the Group of Technologies for Modelling, Processing, and Knowledge Management of the Pascual Parrilla Biosanitary Research Institute of Murcia. Lecturer at the University of Murcia.

GEMA FRÜHBECK MARTÍNEZ

Director of the Metabolic Research Lab of the University Clinic of Navarra.

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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. U.S.A.

FRANCISCO GARCÍA DEL PORTILLO

Research Professor. National Center of Biotechnology-CSIC.

GLORIA GONZÁLEZ ASEQUINOLAZA

Director of the Genetic Therapy Program for Rare Diseases (CIMA). University of Navarra.

JOSÉ ANTONIO GUTIÉRREZ FUENTES

Director of the GADEA Foundation for Science.

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

Manager of the Research in Healthcare Unit of the ISCIII (INVESTEN). Director of the Spanish Joanna Briggs Collaborator Center for Evidence-based Care (CECBE).

MANUEL ROMERO GÓMEZ

Managing Director of the Virgen del Rocío University Hospital, Seville. University Professor of Medicine, University of Seville.

LAURA SÁNCHEZ PIÑÓN

University Professor of Genetics and Head of the ZebraBioRes Group. School of Veterinary. Department of Zoology, Genetics and Physical Anthropology. Santiago de Compostela University.

## Board of Trustees

(Trustees are, at the same time, members of the Governing Board)

### CHAIRMAN

CARLOS MINGO RODRÍGUEZ

Managing Director of the Ramón y Cajal University Hospital.

### DEPUTY CHAIRMAN

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Medical Director of the Ramón y Cajal University Hospital.

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INMACULADA IBÁÑEZ DE CÁCERES

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FERNANDO LIAÑO GARCÍA

Researcher Emeritus of IRYCIS and SERMAS.

SONSOLES SANCHO GARCÍA

Chairwoman of the Research Ethics Committee. Ramón y Cajal University Hospital.

### SECRETARY

LAURA BARREALES TOLOSA

Director of FIBioHRC.

# Structure and Organization

03

## Research Committee

### CHAIRWOMAN

M<sup>a</sup> LAURA GARCÍA BERMEJO

Director of IRYCIS. Group Leader of the Biomarkers and Therapeutic Targets Group.

### EXECUTIVE CHAIRMAN

SERGIO SERRANO VILLAR

Coordinator of the IRYCIS Area 2. Principal Investigator of the Infectious Diseases Group.

### SECRETARY

ROSA M<sup>a</sup> DEL CAMPO MORENO

Coordinator of the IRYCIS Area 2. Principal Investigator of the Biology and Evolution of Microorganisms Group.

### MEMBERS

SONIA CAMAÑO PAEZ

Chairwoman of the Quality Committee. Coordinator of the Biobank and Biomodels Central Support Unit (UCA).

LAURA CARRASCO MARÍN

(Representation of society)  
Director of the Parkinson Madrid.

EVA DELGADO SILVEIRA

Collaborator of the Drug Utilization and Health Outcomes of Pharmacotherapy Group.

LAURA DÍAZ MONTALVO

Predoctoral representative / R1 Group. Collaborator of the Diagnosis and Treatment of Allergic Diseases Group. .

M<sup>a</sup> ÁNGELES GÁLVEZ MÚGICA

Leader of the Central Support Unit (UCA) of Clinical Research and Clinical Trials in early phases.

MANUEL GUZMÁN PASTOR

(Representative of the Complutense University of Madrid)  
Coordinator of the IRYCIS Area 1. Leader of the Neurodegenerative Diseases: Pathogenic Mechanisms Group.

M<sup>a</sup> ROSA INSENSER NIETO

Postdoctoral representative. / R2. Collaborator of the Diabetes, Obesity and Human Reproduction Group.

ALEJANDRO LUNA DE ABIA

Principal Investigator of the Translational Haematology Group.

ALICIA MANSILLA APARICIO

(Representative of the Alcalá de Henares University)  
Coordinator of the IRYCIS Area 1. Principal Investigator of the Visual Neurophysiology Group.

M<sup>a</sup> ELENA MARTÍN PALMA

Coordinator of the IRYCIS Area 4. Principal Investigator of the Aptamers Group.

MARÍA NIEVES PLANA FARRAS

Collaborator of the Epidemiology and Clinical Biostatistics Group.

BRUNO SAINZ ANDING

(Representative of the Autonomous University of Madrid)  
Coordinator of the IRYCIS Area 3. Leader of the Biomarkers and Personalized Approach to Cancer Group (BIOPAC).

M<sup>a</sup> LUISA SALIDO TAHOCES

Collaborator of the Cardiovascular Diseases Group.

FEDERICO SORIA GÁLVEZ

Coordinator of the IRYCIS Group 5. Leader of the Surgical Application of Drug Delivery Systems Group.

DIEGO VELASCO ESCRIBANO

Head of the R&D&I Office of FibioHRC and Director of the Innovation Unit.

CARLOS ZARAGOZA SÁNCHEZ

Principal Investigator of the Cardiovascular Diseases Group.



# Structure and Organization

03

## Innovation Committee

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

**LAURA BARREALES TOLOSA**  
Director of FIBioHRC.

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

## Quality Committe

### CHAIRWOMAN

**SONIA CAMAÑO PAEZ**  
Quality Manager of the Biobank and Biomodels Central Support Unit (UCA).

### SECRETARY

**EMMA GONZÁLEZ SEIZ**  
Quality Manager of the Innovation Unit.

### MEMBERS

**ITZIAR DE PABLO LÓPEZ DE ABECHUCO**  
Quality Manager of the Clinical Research and Clinical Trials in Early Phases Unit.

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

**ANA PÉREZ SANCHO**  
Quality Manager of FIBioHRC.

## Training Committee

### CHAIRWOMAN

**CAROLINA DE LA PINTA ALONSO**  
Area Specialist (FEA) of the Radiotherapy Oncology Unit. Principal Investigator (PI) of the Biomarkers and Therapeutic Targets Group.

### SECRETARY

**JUAN CARLOS MURCIANO FERNÁNDEZ**  
Associated researcher at FIBioHRC.

## VOCALES

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

**NURIA BARA LEDESMA**  
Predoctoral researcher. Multisystemic Diseases Group.

**REBECA BUSTO DURÁN**  
Senior researcher, Lipid Metabolism Groups.

**MARÍA BELÉN DE LA HOZ CABALLER**  
Head of the Allergology Unit. Leader of the Diagnosis and Treatment of Allergic Diseases Group.

**PEDRO DE LA VILLA POLO**  
Lecturer at the University of Alcalá. Leader of the Visual Neurophysiology Group.

**VICTORIA GÓMEZ DOS SANTOS**  
Area Specialist (FEA) of the Urology Unit. Primary Investigator (PI) of the Surgical Research in Urology and Renal Transplant Unit.

**VIRGINIA GUTIÉRREZ PACHÉS**  
FIBioHRC Project Manager.

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

**ALFONSO MURIEL GARCÍA**  
Collaborator of the Epidemiology and Clinical Biostatistics Group.

**JERÓNIMO RODRÍGUEZ BELTRÁN**  
Miguel Servet Researcher. Principal Investigator of the Biology and Evolution of Microorganisms Group.

**NATALIA RODRÍGUEZ OTERO**  
Chief of Residents. Ramón y Cajal University Hospital.



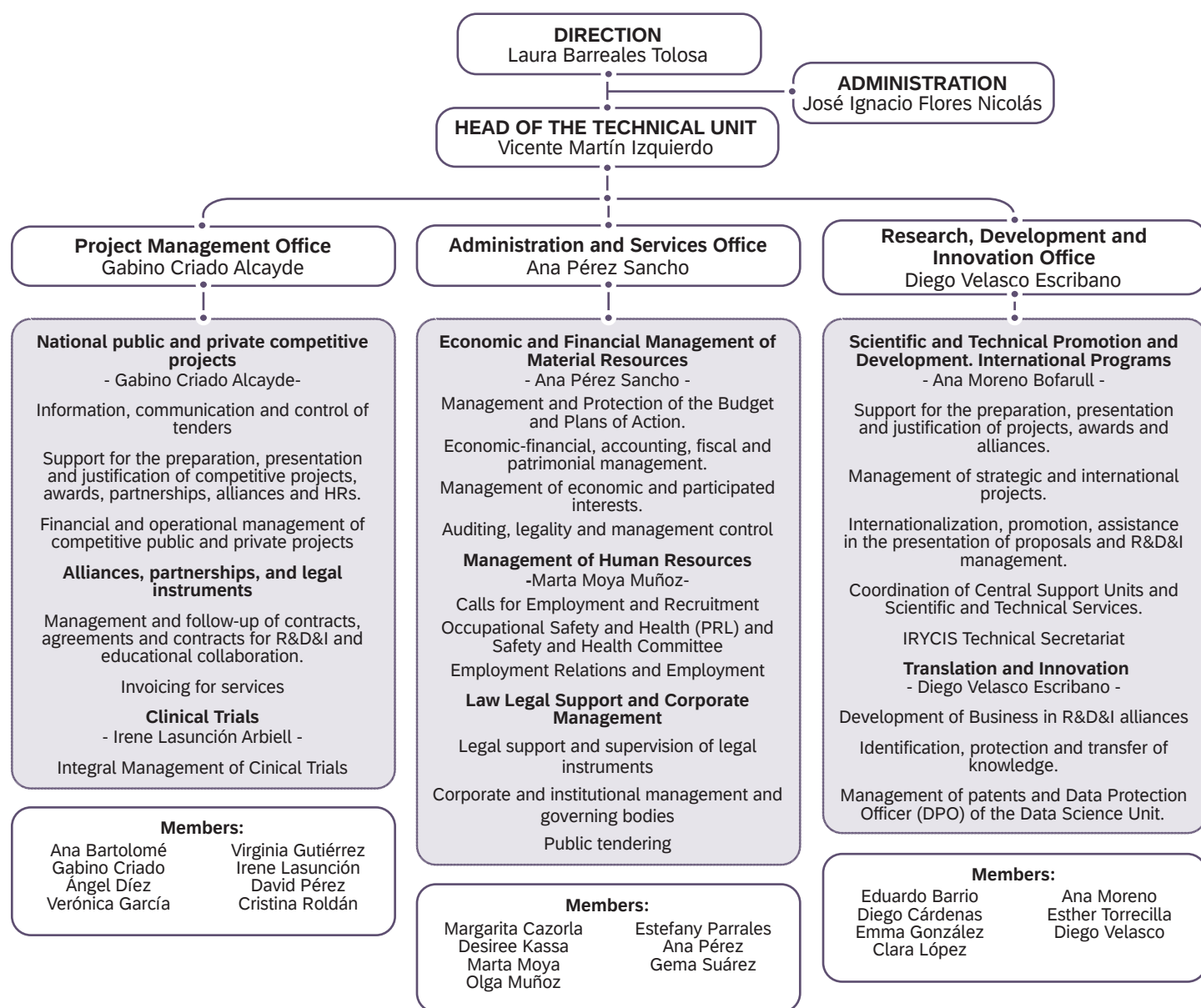


# Structure and Organization

03

## Foundation for Biomedical Research of the Ramón y Cajal University Hospital (FIBioHRC). Management Body for IRYCIS

FIBioHRC is the body responsible for management and administration of the resources and assets of the institution, as well as for support for the development and promotion of research and innovation and other plans of action. It represents the technical-administrative support for the institute, and the structure responsible for the integral management of the research and innovation at IRYCIS..



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Planta -2 dcha. 28034 Madrid  
Tel. 91 336 81 47  
e-mail: fund\_inv.hrc@salud.madrid.org

## Human Resources

Average number of employees working full time



Persons committed to R&D&I management



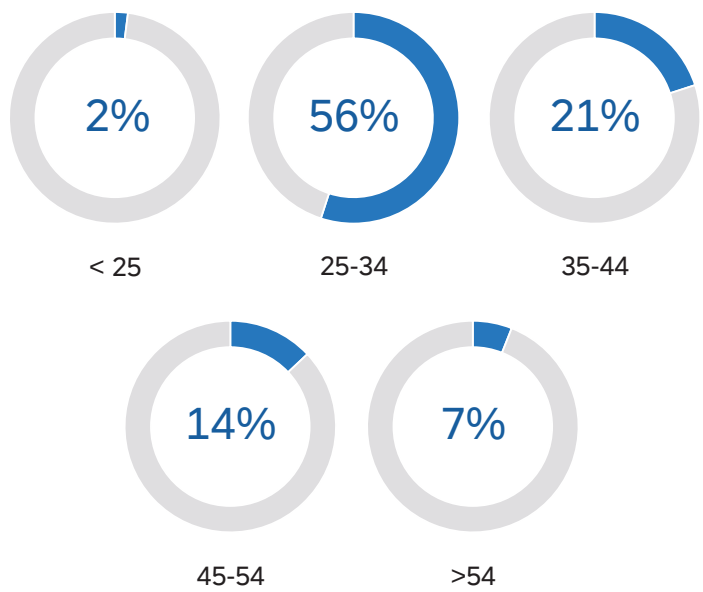
Non-Spanish Citizenship



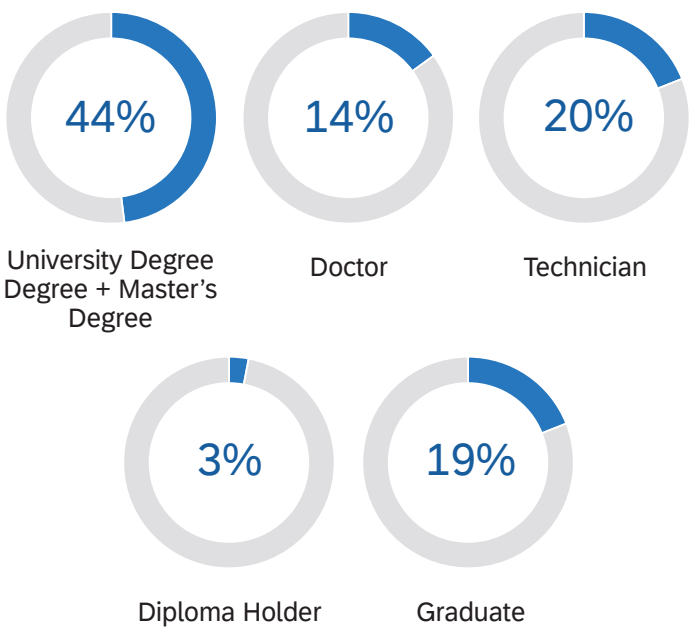
Mean age, in years



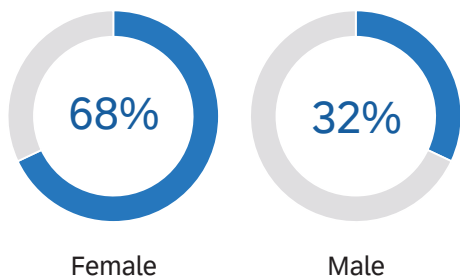
Breakdown by age of the staff hired



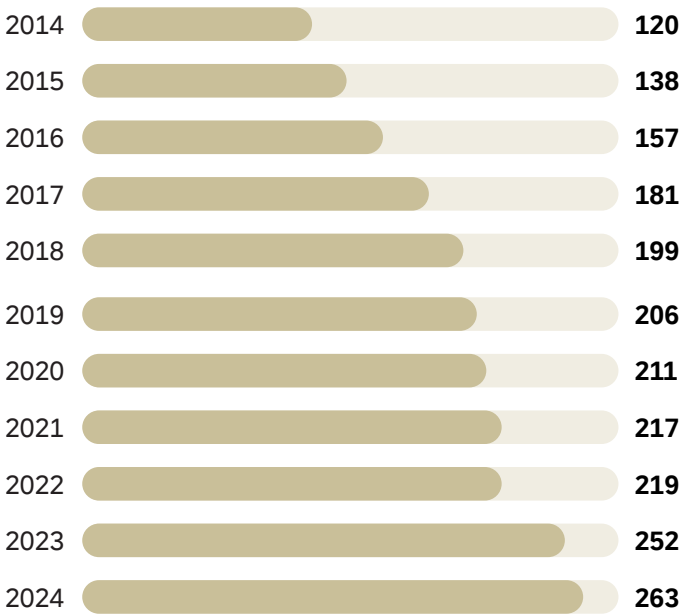
Breakdown by qualification of the staff hired



Breakdown by gender of the staff hired



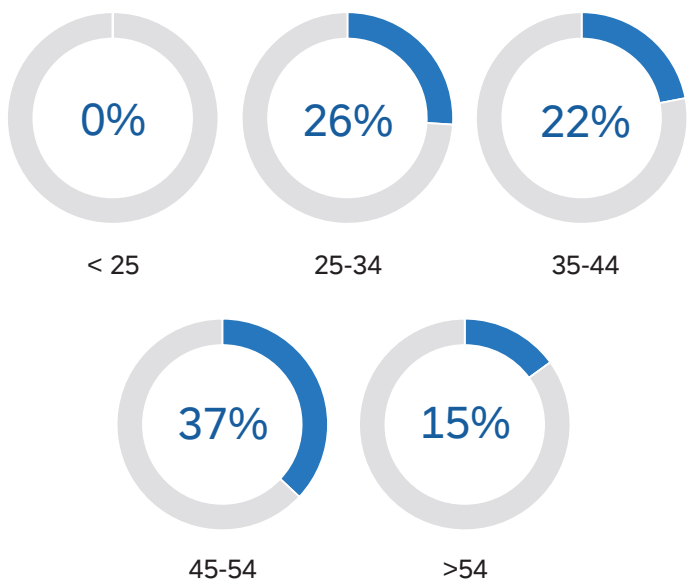
Evolution of the mean staff working full time at FIBioHRC during the last years



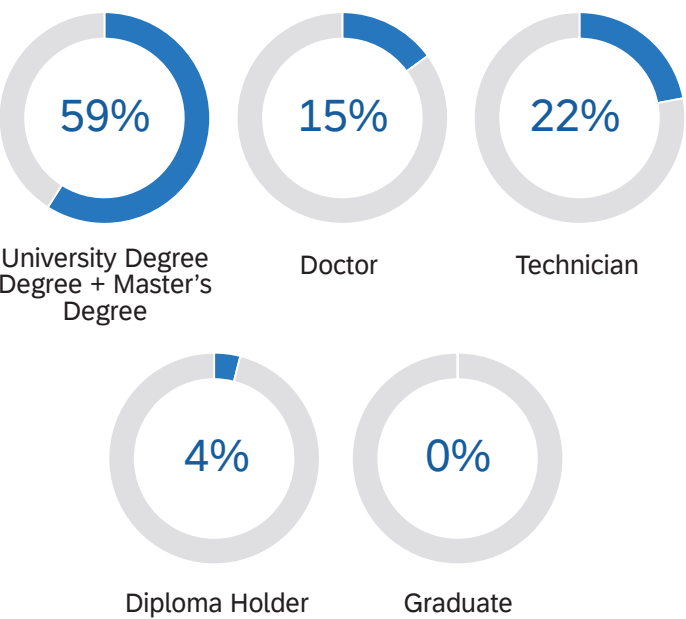
# FIBioHRC in figures

## Human Resources. Technical Office for R&D&I Management

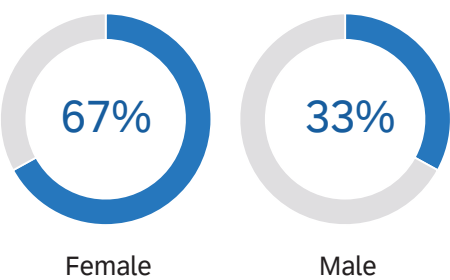
Breakdown by age of the FIBioHRC Technical Management Office staff



Breakdown by qualification of the FIBioHRC Technical Management Office staff

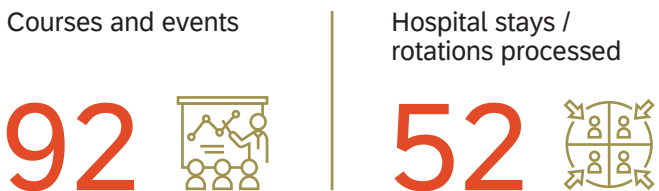


Breakdown by gender of the FIBioHRC Technical Management Office staff



# FIBioHRC in figures

## Activity Indicators for 2024

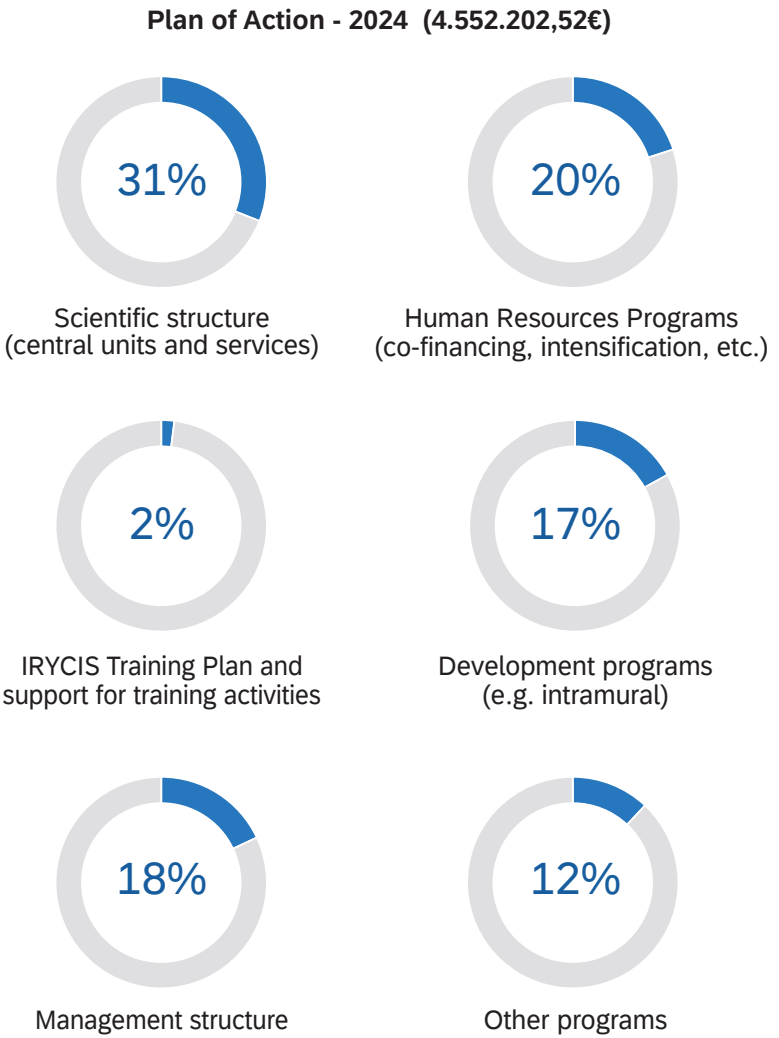
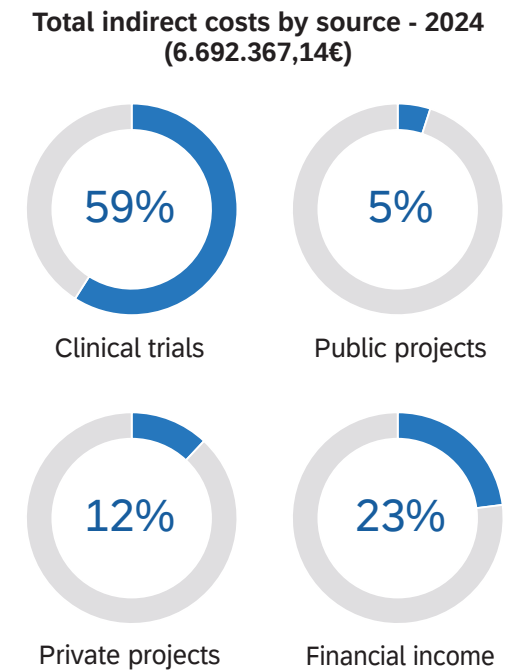
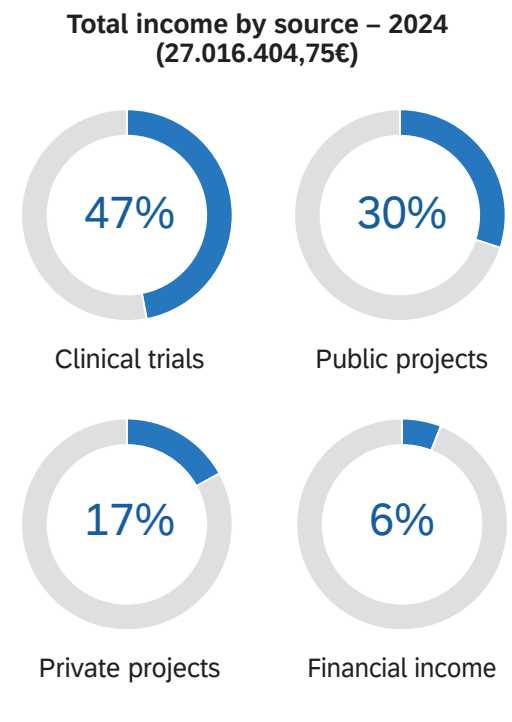


Financial information

According to Act 19/2013 of December 9th, of Transparency, Access to Public information and Good Governance, the Foundation for Biomedical Research of the Ramón y Cajal Hospital makes public its information, with the objective of guaranteeing institutional transparency

Condensed Balance Sheet of FIBioHRC, 2024

ASSETS		EQUITY AND LIABILITIES	
Non-current assets	67.639,92€	Equity	29.306.092,30€
Current assets	57.740.572,51€	Non-current liabilities	0,00€
		Current liabilities	28.502.120,13€
Total assets	57.808.212,43€	Total Equity and liabilities	57.808.212,43€





Research Ethics Committee for Medicinal Products of the Ramón y Cajal University Hospital (CEIm-HURyc)

The Research Ethics Committee (CEI) of the Ramón y Cajal University Hospital of Madrid has been accredited by the Directorate General of Health Inspection and Regulation of the Ministry of Health of the Community of Madrid (Control area for pharmacy and healthcare products). Its setting of action is national for all types of clinical research studies, and it also performs the role of External Ethics Committee of the Hospital Biobank since its creation.

CEIm-HURyc prepares an annual report that includes the clinical research sent for its review and approval by this committee. Since its accreditation as CEIm, it can evaluate any clinical research project submitted to it and conducted at national level.




**CHAIRWOMAN**  
Sonsoles Sancho García

**DEPUTY CHAIRWOMAN**  
M<sup>a</sup> Ángeles Gálvez Múgica

**SECRETARY**  
Itziar de Pablo López de Abechuco

**MEMBERS:** 15




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


**Administration staff:**  
Mariano Sánchez y Ana Castro  
Tel. 91 336 83 22  
ceic.hrc@salud.madrid.org

Activity indicators for the CEIm-HURyc in 2024


Face-to-face or online plenary meetings

11 


CEIm evaluating clinical research projects with healthcare products

14 

Favourable decision

95% 

Studies evaluated

313 

EVALUATION OF

313  
new studies (98% from the Hospital)

68  
relevant amendments

21  
applications for sample transfers, 8 amendments for applications or previous storage agreements, and 2 incorporations of collections/agreements for storage from the Biobank

REVIEW OF

132  
Studies (non-clinical trials) conducted at the centre and evaluated by other CEI/CEIm

68  
Observational studies with medicines (OSM)

83  
research projects

137  
studies of other types

25  
clinical research projects with healthcare products



Evolution of the CEIm-HURYC activity during the past 5 years

Global activity of the CEIm-HURYC

	2020	2021	2022	2023	2024
Number of meetings	26	20	21	17	11
Number of technical reports	24	20	21	17	11
Total number of studies registered	460	374	372	330	313
Clinical trials with medicines	34	31	24	0	0
Observational studies – OSMs	47	23	6	65	68
Observational studies - Other	292	285	288	172	137
Research projects	87	35	43	78	83
Clinical research with healthcare products			11	15	25
Total number of amendments evaluated	138	185	167	178	68



Animal Experimentation Ethics Committee of the Ramón y Cajal University Hospital (CEEAA-HURYC)


The Animal Experimentation Ethics Committee (CEEAA) of the Ramón y Cajal University Hospital was established to meet the requirement by the Community Legislation (2010/63/EU Directive) and its subsequent incorporation to the Spanish Legal System (Royal Decree 53/2013 of February 1st), which establishes the basic rules applicable for the protection of animals used for experimentation and other scientific objectives, including teaching.

On January 21st, 2014, this CEEAA was acknowledged by the Regional Ministry of Environment and Territory of the Community of Madrid as a body authorized to evaluate research or teaching projects that involve the use of animals.

Structure

Renewal of the CEEAA structure and approval of the new internal regulation of the CEEAA-OH, July 1st, 2024.

CEEAA Members:



**CHAIRMAN**

Dr. Federico Soria Gálvez

**SECRETARY**

Dr. Óscar Pastor Rojo

**MEMBERS:** 8 members

D<sup>a</sup> Ana Isabel Ortiz Chércoles

D<sup>a</sup> Beatriz Barrocal López


Dr. Eduardo Lobo Martínez

Dr. Fernando Almeida Parra

Dra. Alicia Mansilla Aparicio

Dra. Laura Ruiz Cañas

Dr. Carlos Zaragoza Sánchez



**Administration staff:**

D<sup>a</sup>. Rosa Castro Damián (until November 30th)

D<sup>a</sup>. Ana García Traba (current)

Tel. 91 336 84 47

animalario@irycis.org



## Activity indicators of the CEEA-HURYC in 2024

Projects evaluated by the CEEA

6 

- 3 Projects with mouse: basic research
- 2 Projects with pig and/or sheep: teaching
- 1 Project with pig: translational research

Studies evaluated as Authorized Body (OH)

6 

- 1 Project with mouse: basic research
- 1 Project with rat: basic and/or translational research
- 3 Projects with pig and/or sheep: teaching
- 1 Project with pig: translational research

Favourable reports (OH)

100% 

## Evolution of the CEEA-HURYC activity during the last 5 years

CEEA ACTIVITY	2020	2021	2022	2023	2024
Files admitted	9	10	7	6	6
Provisional reports issued	4	3	2	7	6
Projects evaluated	7	7	6	7	6
Projects not completed by their PI	0	1	2	0	2
Favourable reports	7	6	4	7	4
Non-favourable reports	0	0	0	0	0
Rate of evaluated/favourable reports	7/7	6/7	4/6	7/7	4/6

ACTIVITY OF THE CEEA AS OH	2020	2021	2022	2023	2024
Applications for evaluation received	7	5	5	7	6
Applications for evaluation accepted	7	5	5	7	6
Application process not completed by the PI	0	0	0	0	0
Favourable evaluation reports	7 (100%)	5 (100%)	5 (100%)	7 (100%)	6 (100%)
Non-favourable evaluation reports	0	0	0	0	0
HURYC projects for animal experimentation authorized by the Relevant Authority (Community of Madrid)	7	5	5	6	7



The Quality Committee of IRYCIS is in charge of developing and managing competences within quality, ensuring that its quality policy is met. This includes integrating quality into strategic planning, encouraging participation, strengthening alliances with the Hospital, increasing the satisfaction of stakeholders, and promoting actions for improvement. Besides, the IRYCIS also has a Plan of Quality that intends to incorporate quality in all its activities, monitor its performance, and disseminate its quality policy.



## Structure

**CHAIRWOMAN**

**Dra. Sonia Camaño**  
Coordinator and Quality Manager of the Hospital Biobank - IRYCIS

**SECRETARY**

**Dra. Emma González**  
Coordinator and Quality Manager of the Innovation Unit - IRYCIS

**MEMBERS**

D<sup>a</sup>. Itziar de Pablo. Quality Manager of the Clinical Trials in Early Phases Unit -IRYCIS.

D<sup>a</sup>. Purificación Pastor. Manager of the Quality Management System ISO 9001:2015 of the Ramón y Cajal Hospital.

D<sup>a</sup>. Ana Pérez. Coordinator and Quality Manager of FIBioHRC.





## Summary of the activities conducted by the Quality Unit during 2024

There has been follow-up for the compliance of the different axes of the **ATENEA 21-25 Plan**, through meetings with the Direction of the Institute and the Direction of the Foundation.



A number of meetings have been held with different Central Support Units for the **follow-up of compliance with the indicators and improvement actions** planned for the 2023 annuity, and to plan new ones for the 2024 annuity.

An **answer has been given to those questions regarding quality** that have been posed by the Research Committee and its sub-committees



Participation as a guest in one of the meetings of the **ISO 9001 Committee** of the Hospital, in order to convey to the colleagues in the committee the wide range of potential support actions for research offered by IRYCIS.

The **Quality Plan and Policy** has always been available to all members of IRYCIS in the institute webpage, and there has been follow-up of the number of downloads.

A **system of management by processes** has been implemented at the Data Science Unit, and the system implemented in the Translational Genomics Unit has been reviewed and modified in order to adapt it after its merge with the Bioinformatics Unit.

There has been participation in the **review of the procedure for independent clinical trials (EECC)** with FIBio-HRC as promoter.



The **Environmental Sustainability Working Group of the IRYCIS** was created, including two members of the Quality Committee.

**Actions for improvement have been identified and implemented**, which have allowed to give an answer to the needs of our stakeholders and anticipate any changes

The existing participation channels have been reinforced, and new ones have been created.

Throughout 2024, IRYCIS included **over 1,200 persons** committed to research, both as principal investigators and collaborators, technical support staff, and R&D&I management staff.

Persons actively working in research

1.290 

740  
In consolidated groups

219  
Committed to research in established and access groups

331  
Of them were Associated Clinical Research Staff (ACRS), who were actively leading research lines and/or projects, from 47 Hospital Departments / Units

3%  
Non-Spanish citizens

Persons in the Hospital who also contributed as authors in publications of the Institute

231 

Persons committed to R&D&I management

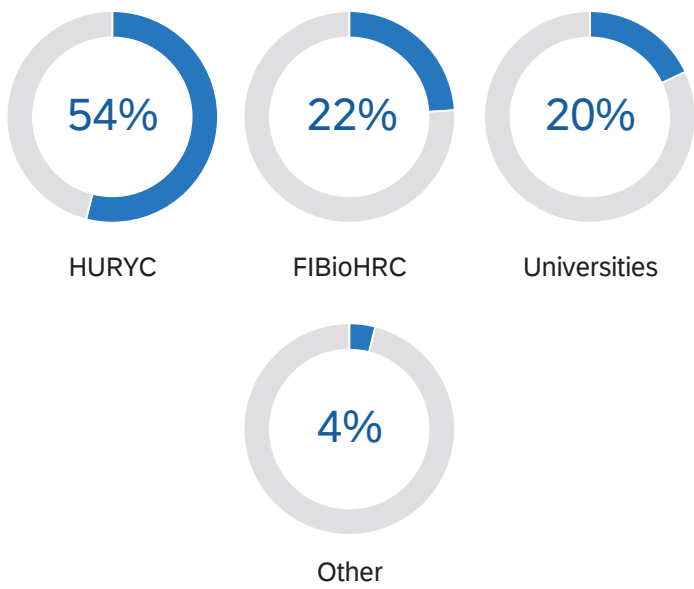
27 

Number of persons associated with IRYCIS groups by priority area and ACRS

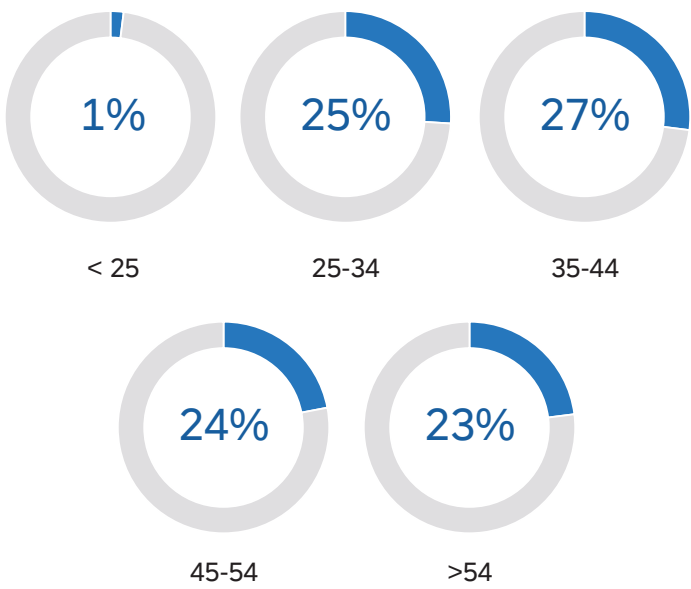


## Breakdown of the IRYCIS Staff

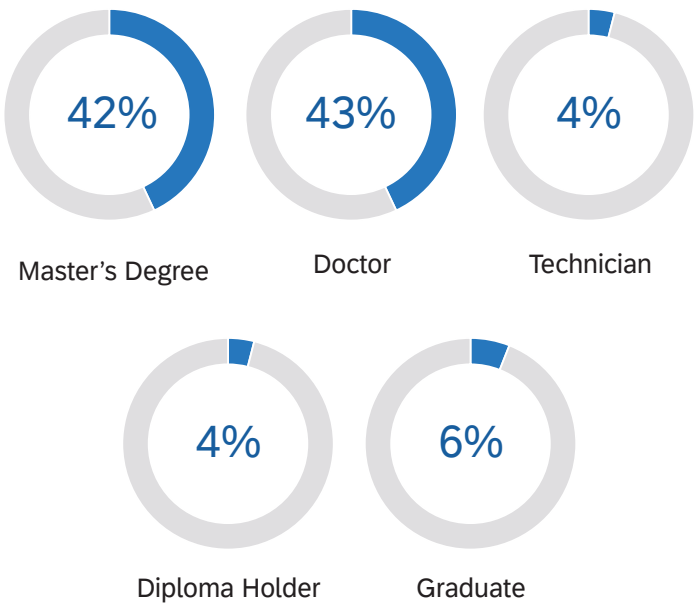
Breakdown of the IRYCIS staff by center



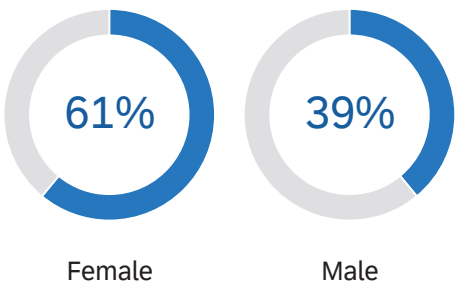
Breakdown of the IRYCIS staff by age range



Breakdown of the IRYCIS staff by qualification



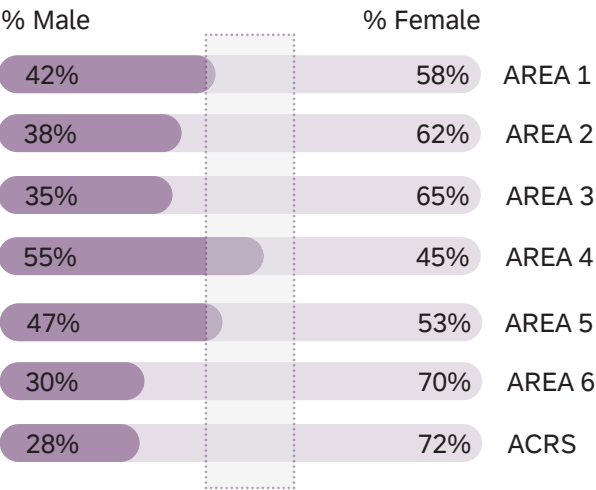
Breakdown of the IRYCIS staff by gender



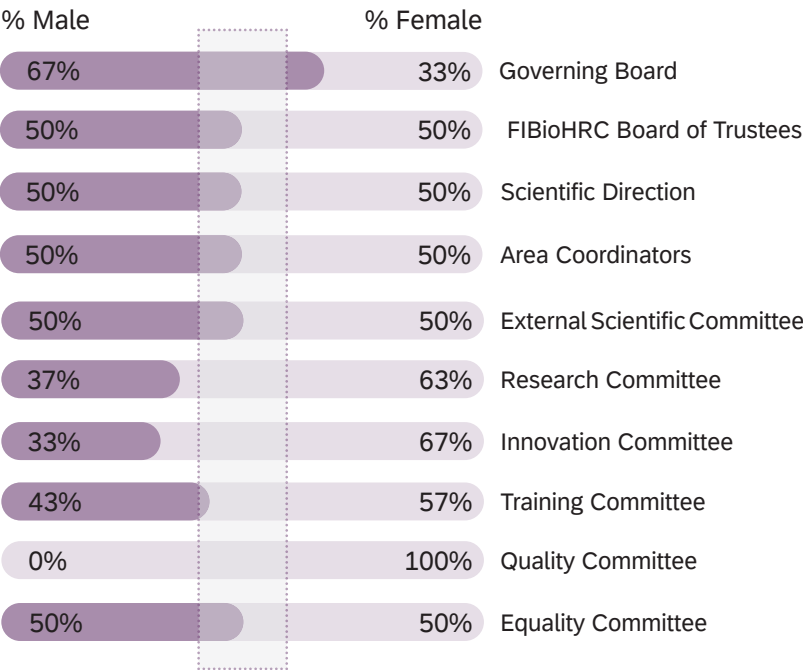
In 2024, IRYCIS and its Foundation have continued their commitment efforts with an institution of research excellence, inclusive and diverse. In this space, the contribution of all persons is acknowledged and valued equally, regardless of their gender, encouraging the drive for scientific careers and vocations equally. The rights of all working persons are also supported, guaranteeing a fair and respectful work environment.

The Equality Committee, as the driver for these initiatives, has opted for a close and inclusive model of work, in constant evolution, adopting new technologies and creative and audiovisual formats in order to bring science closer to all persons.

### Research staff in scientific areas



### Governing bodies and advisory boards



## Initiatives

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

#### Video at the IRYCIS YouTube channel

Three female IRYCIS researchers share an inspirational conversation with their daughters in the context of 11F, The International Day of Women and Girls in Science. Their daughters, aged from 8 to 20 years, offer their fresh and excited point of view about the possibility of entering the research world. Curiosity, passion, example, enthusiasm and advices are just some of the subjects addressed by mothers and daughters in this enriching initiative, promoting dialogue between generations and scientific empowerment.

#### Female IRYCIS researchers attend educational centers personally or virtually

With the aim to get science closer to children between 3 and 18 years of age, and encourage potential vocations, our female IRYCIS researchers present an inclusive model of research, where they play a role as valuable as that of their male colleagues, as workers listened to and valued equally. This initiative intends to inspire future generations to see science as an open and equal space for men and women.





## March 8th: International Women's Day

IRYCIS joins in the International Women's Day celebration with a symbolic and collective action: handing out purple ribbons and taking a collective photo that captures the strength and diversity of the many women that give life every day to the Research Institute and the Hospital. Professionals committed to clinical practice, teaching, research and innovation. We are women, we are many, and we are present in all those settings which build knowledge and future!



That day we also had a photocall, and decorated the Hospital hall with an arch of balloons and posters prepared by Almudena Vázquez Santos, IRYCIS researcher, with motivating phrases and hashtags to be shared in our social networks.



On many occasions, those persons performing roles that are traditionally made invisible, or with greater family responsibilities, are excluded from access to training opportunities, due to the difficulty to reconcile work and personal life. On the occasion of March 8th, IRYCIS, in collaboration with the UNITECO Foundation, offered a unique and free training opportunity to its female researchers: the course on INFORMED CONSENT, which was targeted to professionals from the healthcare and non-healthcare settings who, in their daily work, might be involved in processes associated with informed consent. When completing this 30-hour online course, participants received a Certificate of Achievement issued by the UNITECO Foundation (with digital certificate), with the additional option to validate it in the regulated education setting, and equal to 4 ECTS.



## 11F Stickers

After the huge success of previous editions, where we ran out of stickers, IRYCIS launched a new edition to celebrate the International Day of Women and Girls in Science. This new series, designed by Verónica García, continues with the objective of making visible and celebrating the role of women in the scientific setting.



## July 25th: International Day of LGTBIIQA+ Persons in Science, Technology, Engineering and Mathematics

Video at the IRYCIS YouTube Channel

IRYCIS celebrates diversity in all its expressions, including the affective-sexual orientation and gender identity, by acknowledging them as an essential driver for science of excellence. With respect and admiration, the Equality Committee of FIBioHRC created a brief video to make visible and value the contribution of the LGTBIIQA+ community, often made invisible, to the scientific world. Prominent persons such as James Berry, Sara Josephine Baker, Alan Turing, Sally Ride, Elena Long and Javier Armentia, alongside many others whose names are not always known, are part of this essential community that enriches both our scientific setting and our society.



## November 25th: International Day for the Elimination of Violence Against Women

The Equality Committee joined the initiative driven by the Social Work Unit of the Ramón y Cajal University Hospital, in order to celebrate November 25th. We wore purple ribbons in our white coats and pinned them to the lapels of all persons who came to the hospital hall, in order to make visible and condemn violence against women throughout the world, not only that day but all the days of the year.



## To promote and enable the inclusion of a gender perspective in the research and innovation projects of IRYCIS

Throughout 2024, the Equality Committee has supported male and female researchers for the incorporation of a gender perspective in their research and innovation projects, an essential aspect within the evaluations of funding entities, both national and international.

Whether in face-to-face meetings, through email, or via specific training activities, the Committee is always available to support any members of the research staff who require it.

[comision.igualdad@irycis.org](mailto:comision.igualdad@irycis.org)

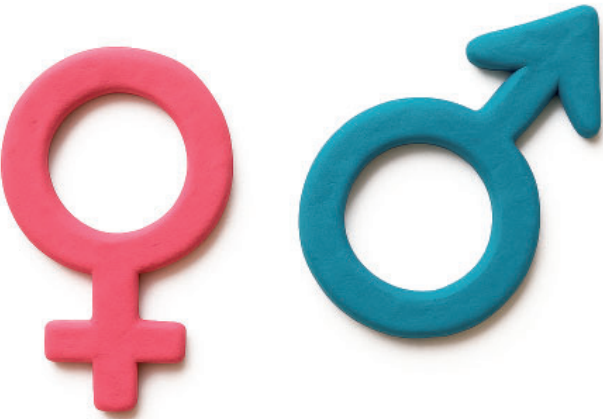


## YouTube Seminar

On December 12th, 2024, the Equality Committee invited Beatriz Pinilla Romero, in charge of the Department for Management of Knowledge and Quality of the Biomedical Research Institute of Bellvitge (IDIBELL), to hold a seminar. The “Gender Perspective in Science: Challenges, Opportunities and Strategies for Responsible Research and Innovation” took place in line with the seminar held last year, where the IRYCIS “Guidelines on the Impact of Gender and Gender Perspective on Research Projects” was presented.



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





# IRYCIS Activity in Figures

# 10

## New projects

Public projects and networks obtained in competitive calls

# 36



30 national  
6 international

## Active projects

European projects and initiatives

# 37



Private projects

# 147



Clinical trials and studies

# 224



Private projects

# 55



Commercial clinical trials

# 1.192



Public projects and national non-commercial clinical trials obtained through competitive tendering (17 NC Clinical Trials)

# 115



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

Human resources recruited through competitive tendering in 2024

Active Contracts

# 58



- 10 Río Hortega (ISCIII)
- 6 Juan Rodés (ISCIII)
- 4 Sara Borrell (ISCIII)
- 1 Predoctoral i-PFIS (ISCIII)
- 13 Predoctoral PFIS (ISCIII)
- 2 Miguel Servet I (ISCIII)
- 4 Intensifications (ISCIII)
- 1 IIS Manager (ISCIII)
- 2 Talent Attraction Contracts (CAM)
- 6 Ayudantes de Investigación Empleo Juvenil (CAM)
- 2 Research Assistants. Youth Employment (CAM)
- 2 Predoctoral Youth Employment (CAM)
- 1 Juan de la Cierva Training (MICINN)
- 2 FPU Predoctoral (MICINN)
- 1 Postdoctoral (MSCA-PF)
- 1 AECC Talent fellowship

Contracts Awarded

# 21



- 5 Río Hortega (ISCIII)
- 1 Sara Borrell (ISCIII)
- 3 Juan Rodés (ISCIII)
- 3 Intensifications (ISCIII)
- 4 PFIS Predoctoral (ISCIII)
- 2 Predoctoral. Youth Employment (CAM)
- 1 Contrato atracción de talento (CAM)
- 1 Talent Attraction Contract (CAM)
- 1 Lab Technician. Youth Employment (CAM)

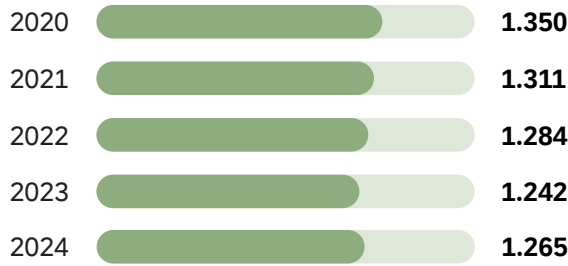


# IRYCIS Activity in Figures

## Publications

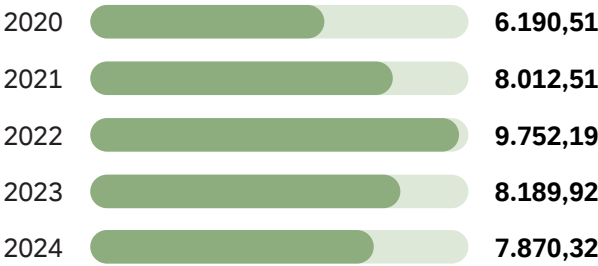
\* Original articles, guidelines, reviews and editorials

Publications



Evolution in the number of publications

Total Impact Factor points



Impact factor evolution

Publications in the first quartile



Publications in the first decile



Publications with an IRYCIS first or last author



## IRYCIS Bibliometrics and Publications of Excellence

BIBLIOMETRÍA DEL IRYCIS	2020	2021	2022	2023	2024
Total number of publications	1.350	1.311	1.284	1.242	1.265
Total impact factor	6.190,51	8.012,51	9.752,19	8.189,92	7.870,00
Mean impact factor	4,59	6,11	7,60	6,59	6,22
Original publications	1.329	1.168	1.217	1.108	1.209
Reviews	0	101	16	76	7
Editorials	2	29	41	56	33
Clinical Guidelines	19	13	10	2	16

PUBLICACIONES DE EXCELENCIA	2020	2021	2022	2023	2024
Number of publications en 1D	261	234	212	219	326
TOTAL Impact Factor 1D	3.163,38	4.149,10	5.180,87	4.222,50	5.118,50
% of publications en 1D	19,3	17,8	16,5	17,6	25,8
Number of publications en 1Q	626	652	582	583	749
TOTAL Impact Factor 1Q	4902,8	6.491,88	7.742,51	6.502,05	6.966,60
% of publications en 1Q	46,4	49,7	45,0	47,0	59,0



# IRYCIS Activity in Figures

## Innovation and Industrial Property

Active innovation projects  
by the end of the year

147 

Active patent families  
by the end of the year

31 

11 MTAs and 18  
CDAs signed

29 

New applications for  
industrial protection

15 

Innovation projects being used and/  
or transferred during the year

4  46 cumulative  
total

New innovative ideas  
during the year

27 

Financing received in  
2023

1,2M€ 

## Networks, platforms, alliances and partnerships

Networks, platforms, alliances and  
partnerships with IRYCIS participation

226 

42% international (95).  
24 initiated in 2024 (10  
international) and 34 active  
framework agreements

## Theses and Awards

PhD theses supervised  
by IRYCIS members

59 

PhD theses read by  
IRYCIS members

41 

Awards and  
distinctions granted

94 



# Communication

IRYCIS is a space committed to biomedical research of excellence, with a clear multidisciplinary and translational nature, with the vocation to become a trustworthy reference for society, for the scientific community, and for public and private institutions, both at national and international level. In this way, IRYCIS works under the premise of sharing and giving visibility to the principles and values of the Institute, its “IRYCIS Brand”, as well as to its research, innovation and transfer achievements and activities, obtained through the effort and work of its research staff and the rest of the institution members. These objectives are well established in the **2021-2025 Communication Plan**.

Communication sessions / seminars held



Written press news published about our Hospital /IRYCIS



News on other audiovisual media (radio, TV and Social Networks)



News shared in different formats



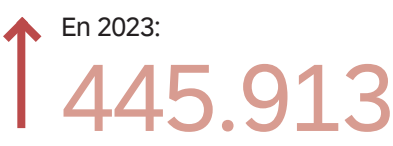
- 51 in the usual format
- 2 brief pieces of news shared through our Visibilidad IRYCIS communication channel
- 12 outstanding publications through our Outstanding Publications channel.
- 33 videos in the IRYCIS YouTube channel

IRYCIS INFORMA issued with different topics

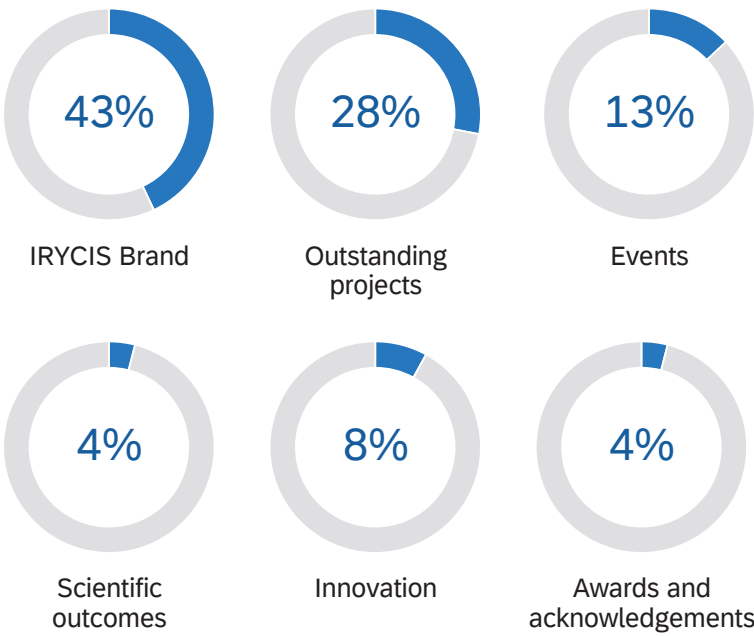


- 45 weekly newsletters with announcements
- 35 emails with information about the IRYCIS Seminars

Visits to our website



Breakdown of news by categories



# Communication

The most relevant and representative news of the 6 IRYCIS areas

01



02



03



04



05



06

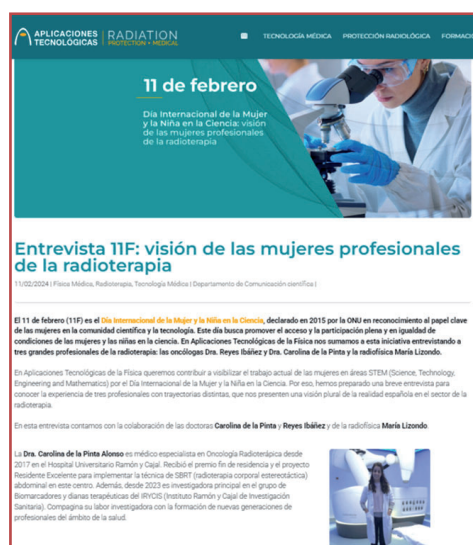


**Area 1 News:** (1) Multiple Sclerosis. Dr. Monreal and (2) Neurodegenerative Diseases: Therapy Development. Dr. Fernández Ruiz and Dr. de Lago. **Area 2 News:** (3) Infectious Diseases. Dr. Serrano-Villar and (4) Biology and Evolution of Microorganisms. Dr. Holguín and Dr. Avendaño. **Area 3 News:** (5) Molecular Pathology of Cancer and Translational Lung Cancer Research Group. Dr. Palacios and Dr. Garrido and (6) Biomarkers and Personalized Approach to Cancer. Dr. Sainz



# Communication

07



08



09



10



11



12



**Area 4 News:** (7) Biomarkers and Therapeutic Targets. Dr. de la Pinta and (8) Diagnostic Tools and Precision Medicine in Thyroid Conditions. Dr. Valderrábano. **Area 5 News:** (9) Diabetes, Obesity and Human Reproduction. Dr. Nattero and (10) Rheumatology. Dr. Vázquez and Dr. Bachiller. **Area 6 News:** (11) Epidemiology and Clinical Biostatistics. Dr. Zamora and (12) Drug Utilization and Health Outcomes of Pharmacotherapy. Dr. Álvarez and Dr. Vélez



# Publications

# 12

Top-ten international publications\* according to number of citations (published between 2020 and 2024)

\*Articles and reviews with first, last or correspondence authorship position.

- 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** **Albillos A, Martín R, Van der Merwe S, Wiest R, Jalan R, Álvarez M.** Cirrhosis-associated immune dysfunction. *Nat Rev Gastroenterol Hepatol.* 2022;19(2): 112 - 134. DOI:10.1038/s41575-021-00520-7.
- 03** **López JC, Martín L, Hermann PC, Sainz BJR.** The CXCL12 Crossroads in Cancer Stem Cells and Their Niche. *Cancers (Basel).* 2021;13(3): 469. DOI:10.3390/cancers13030469.
- 04** **Ortega MÁ, 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.
- 05** **Galindo C, Collado M, Herrera M, Pena C.** Tumor Microenvironment in Metastatic Colorectal Cancer: The Arbitrator in Patients' Outcome. *Cancers (Basel).* 2021;13(5): 1130. DOI:10.3390/cancers13051130.
- 06** **Albillos A, Gottardi A, Rescigno M.** The gut-liver axis in liver disease: Pathophysiological basis for therapy. *J Hepatol.* 2020;72(3): 558 - 577. DOI:10.1016/j.jhep.2019.10.003.
- 07** **Sánchez E, Cruz AJ, Ravasco P, Suominen M, Pitkälä PK.** Nutritional care in older adults: are we doing everything? An expert opinion review. *Curr. Med. Res. Opin.* 2024;40(9): 1563 - 1576. DOI:10.1080/03007995.2024.2380007.
- 08** **Van der Merwe S, Chokshi S, Bernsmeier C, Albillos A.** The multifactorial mechanisms of bacterial infection in decompensated cirrhosis. *J Hepatol.* 2021;75: 82 - 100. DOI:10.1016/j.jhep.2020.11.029.
- 09** **Rodríguez J, De la Fuente 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.
- 10** **Zamorano JL, Gottfridsson C, Asteggiano R, Atar D, Badimon L, Bax JJ, Cardinale D, Cardone A, Feijen E, Ferdinandy P, Lopez T, Gale CP, Maduro JH, Moslehi J, Omland T, Gomez JCP, Scott J, Suter TM, Minotti G.** The cancer patient and cardiology. *Eur J Heart Fail.* 2020;22(12): 2290 - 2309. DOI:10.1002/ehf.1985.



## 01

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## 02

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# Major Milestones of IRYCIS during 2024

14

## Internationalization

A great number of applications have been submitted during 2024, and there has been active collaboration in multiple actions and consortiums within the Research and Innovation Framework (R&I) of the European Union for 2021-2027 (Horizonte Europa) and other programs or mechanisms for funding research, which has allowed IRYCIS to have **five new projects** granted and/or initiated, with **coordination for one of them**.



**REACH**\_TRANSCAN-3 (JTC 2023)

Dr. Bruno Sainz (Area 3)

Reversing Epitranscriptomic Alterations for CHemosensitization of Pancreatic Cancer



**TechConnect**\_HORIZON-CL2-2024-TRANSFORMATIONS-01

Dra. María Elena García (Area 4)

Assessing and Strengthening Human-Tech Skill Complementarity in the Digital Landscape



**FH-EARLY**\_HORIZON-HLTH-2024-DISEASE-03-two-stage

Dr. José Luis Zamorano (Area 5)

New strategies for the early diagnosis, risk stratification and co-management of familial hypercholesterolemia

**XiA**\_ERASMUS-EDU-2024-PI-ALL-INNO

Dr. José Luis Zamorano (Area 5)

Xpanding Innovative Alliance



**MORESCREEN**\_ EIT HEALTH FLAGSHIPS CALL 2024

Dr. Agustín Albillos (Area 5)

Improving colorectal cancer screening: the complementary role of liquid biopsy

There has also been involvement and/or leadership in other initiatives

### “Spain in the SPOTLIGHT”

An initiative of the EATRIS community in the setting of climate change and health, led by Dr. María Laura García Bermejo.



Scientific report in English.



IRYCIS started issuing “**IRYCIS Visibility**”. Communications written in English for the dissemination of European projects granted.

## IRYCIS VISIBILITY

IRYCIS has a successful participation in the **calls for the canSERV project**, in the HE framework, which provides advanced and personalized services throughout the oncologic process to scientific staff from countries which are members and associates of the EU. Dr. Julie Earl and Dr. María Laura García Bermejo.



**canSERV**  
providing cutting edge cancer research services across europe



# Major Milestones of IRYCIS during 2024

14

## Innovation

### 1,2 million euros

Achieved in competitive calls for innovation.

1 Deep Tech project funded by the Foundation for Knowledge, Madrid.

**fundación** para el  
**conocimiento**  
**madriod**

3 awards won at the eSalud Hackathon 2024: LinfoChat, Mirror me, DolorXcape.



Un premio AEV Awards 2024 al proyecto/web app QuickVaccine.



New call for the MISIÓN IRYCIS 2030 initiative: 17 submitted, 7 prioritized for mentoring.



3 HealthStart 2024 projects granted: DIANA, BIOS-IA (awarded as two of the ten best entrepreneurship projects of the year) and LoadFoot.



### 4 software registrations:

Quickvaccine, Salud entre culturas app, EPIMOLBIO, Score Gynaecology and Adnexal Masses.

1 intellectual property registration:

VIDAVIMM

1 collaboration agreement between IRYCIS and SIMSKILLS for the development of an Artificial Intelligence simulator to improve the communication skills of the health-care staff.



1 Renovation of the agreement with Novartis. Generation of tools for data analysis and natural language processing, useful for collecting demographical variables of prevalence in the Rheumatology setting.

1 co-development agreement signed with Novartis for the management of alerts in patients with Chronic Renal Disease



1 co-development agreement and technology license for the Contours tool.



# Major Milestones of IRYCIS during 2024

14

## Other projects, awards and acknowledgements

**36%** success in the AES 2024 call, with **16 health research projects** granted, many of them led by young researchers.



The applications for **6 Cooperative Research Networks Targeted to Health Outcomes (RICORS)** were granted leadership.



One new **Technological Development in Health (DTS)** project



**3 new national competitive projects** funded by the **MICINN**.



One project led by IRYCIS funded by the **"21st Health Research Grants"** awarded by the Mutua Madrileña Foundation.



FIBioHRC supports **9 new research projects** within its **internal program targeted to new members of staff and emerging groups, 2024**

3 grants by the Spanish Association Against Cancer for IRYCIS researchers within the **New AECC 2024 Grants**.



Dr. Rafael Cantón, Dr. Fernando Baquero, Dr. Alfonso J. Cruz-Jentoft, and Dr. José Luis Zamorano appear among the most cited scientists at global level during 2024 in the **Clarivate Highly Cited Researchers ranking**.



Dr. Santiago Moreno, Dr. José Luis Zamorano, Dr. Agustín Albillos, Dr. Alfonso Cruz and Dr. Julio Acero were recognized as the "Most Reputable Doctors" in Spain by MERCO and ODS. Dr. Pedro Jaén, Dr. Sergio Vañó, Dr. Marcos Sales, Dr. José Palacios and Dr. Luis Manzano were runner-ups.



**Dr. Jerónimo Rodríguez Beltrán** received a double award: the **2024 National Research Award in Biology, in the Margarita Salas modality**, granted by the Ministry of Science, Innovation and Universities, and the **2024 "Margarita Salas" Research Award by the Community of Madrid** for researchers under 40 years of age.



**Dra. Sandra García-Gallego**. **Young Research and Innovation Award by the Autonomous Community of Castilla-La Mancha, Science Category.**

# Major Milestones of IRYCIS during 2024

14



**Dr. Enrique Rodríguez.** Rising Star Award 2024, granted by the Spanish Society of Gastroenterology.



**Dr. Sergio Vañó.** 2024 Best Clinician Award, granted by the Institute of Research and Social Development of Rare Diseases



**Dr. Pablo Boixeda.** Honorary member of the European Society for Lasers and Energy Based Devices (ESLD).



**Dres. Pedro Jaén y Sergio Vañó.** Best Dermatologists in Spain by the FORBES magazine



**Dr. Álvaro González.** IPC Volunteer of the year by the International Psoriasis Council (IPC).



**Dr. Fernando Baquero.** Leader in Microbiology Award 2024 in the "World Online Ranking of Best Microbiology Scientists – 2024 Report" by Research.com.



**Dr. Rafael Cantón.** Amadeo Foz Award by the SEIMC for his brilliant professional trajectory and contribution in the clinical microbiology setting, as a Microbiologist and a Professor.



**Dr. Manuel Guzmán.** Raphael Mechoulam Award to the best scientific career in research on cannabinoids, by the International Cannabinoid Research Society (ICRS).



**Dr. José Luis Zamorano.** Scholar at the National Royal Academy of Medicine of Spain.



**Dra. Belén de la Hoz.** Best Allergist of the Year by the El Confidencial newspaper



**Dr. José García.** Honorary Doctorate from the National University of Engineering, Lima (Perú).



**Dr. Miguel Ángel Ortega.** Award of Excellence in Supervision of Doctoral Theses by the UAH.

# Major Milestones of IRYCIS during 2024

14



**Dres. David Sucunza y Juan José Vaquero. Award to the Best National Patent by the UAH. P202230612** “Solutions for peritoneal dialysis containing a natural flavonoid as osmotic agent”.

**Dres. Marta Araujo, Alejandro Luna y Andrés Ortiz. Extraordinary Award for the Best Doctoral Thesis at the UAH.**



**The School of Colorectal Cancer Patients**, driven by the Multidisciplinary Committee for Colorectal Cancer, and coordinated by **Dra. Reyes Ferreiro. Award to the Best Project for Volunteering and Active Participation at the GEPAC Awards.**

## IRYCIS Brand or “IRYCIS COMMUNITY”

**Dr. Víctor Manuel González Muñoz, new Scientific Deputy Director of IRYCIS**



In compliance with different regulations, after a partial renewal, the **new IRYCIS Research Committee** is created for the next five years, and the members of the Quality Committee and the Training Committee are updated.

IRYCIS **renews the area coordinators** where research groups are integrated.

IRYCIS renews the Regulations for the Research Committee, the Training Committee, and the Area Coordinations

IRYCIS welcomes **four new research groups**, assigned to areas 3, 4 and 5 (**welcome 1** y **welcome 2**).

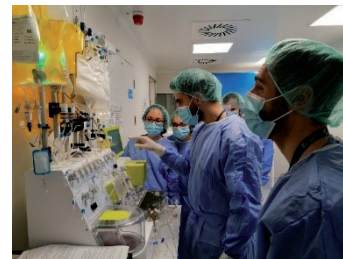




# Major Milestones of IRYCIS during 2024

14

According to the recommendations established by the International Committee of Medical Journal Editors (ICMJE), IRYCIS relaunches its **authorship policy and signatures policy** for scientific publications and other papers.



**Favourable inspection by the AEMPS of the HURCY/ IRYCIS clean room** for the production of advanced therapies under GMP guidelines and their use in clinical trials.

**4 new Technical-Scientific Services** within the IRYCIS Services Portfolio.



IRYCIS holds for second consecutive year **a workshop on stroke**, "Research and development of new therapies for stroke recovery", within the framework of the Science and Innovation Week.



IRYCIS holds the **Follow-up Workshop for the FAR (FORTALECE-IRYCIS) Initiative** by the ISCIII, with attendance by Dr. Pilar Gayoso, Deputy Director of Research Evaluation and Promotion (ISCIII).



The Ramón y Cajal University Hospital and IRYCIS host the **6th Healthcare Research Workshop of the CAM**.



IRYCIS participates in the 2024 edition of the **"European Research Night"**. In its third consecutive participation, our researchers garnered great acknowledgement and congratulations.

Over 40 engineers are welcome in different Hospital units, through a **collaboration between IRYCIS and the Polytechnic University of Madrid**.



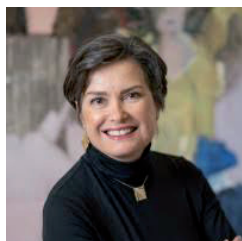
# Major Milestones of IRYCIS during 2024

14

The Ramón y Cajal University Hospital and IRYCIS hosted the “**ACANPAN Meeting: 10 years United by Hope**”, a workshop with lectures and testimonies to create awareness about pancreatic cancer, address patients’ needs, and advance in research.



The new “**Building the Future of Health**”, seminars kick off, with the seminar by Eva Hurt (AstraZeneca R+D and the Karolinska Institute (Sweden)).



**12 dissemination instances of the “IRYCIS Young Talent” initiative**, where once a month, one of our postdoctoral researchers is identified, with the objective of inspiring and creating referents for newcomers, encourage collaborations, and promote our IRYCIS brand.



**Award by the Superior Technical School of Telecommunication Engineers of the Polytechnic University of Madrid** to the Ramón y Cajal University and IRYCIS, for “their determined and constant commitment to the training of Biomedical Engineering students”.



IRYCIS holds a **round table for patients: The Clinical Trial**, within its commitment with patients, relatives, and overall society.



IRYCIS participates for second consecutive year in the Educational Stay Program for **4º year “ESO + EMPRESA” (secondary education + COMPANY) students**.



The postdoctoral researchers group holds its **1st Workshop for IRYCIS postdoctorals: sowing ideas and synergies**.



**3 dissemination instances of the “Know our Central Support Units” initiative**, where IRYCIS intends to make visible its restructured Central Support Units (UCAs), and its extended and improved Scientific-Technical Services Portfolio.



IRYCIS celebrates the great success of the **2nd Research Workshop for Doctorate Students (JOINED IRYCIS 2023)** held on February 9th 2024, and organized by its group of predoctoral-R1 researchers.



With the aim to promote Responsible Research and Innovation (RRI) that addresses current social challenges and brings society closer to citizenship, thus enabling joint decisions that will have impact on our future as a society, IRYCIS has driven different initiatives in order to connect all stages of research and innovation processes. By doing so, and according to the European Committee, there is support for compliance with the six key policy agendas: ethics, gender equality, citizen participation, scientific education, open access, and governance.

## 1. ETHICS AND SCIENTIFIC INTEGRITY



Training Course in Good Clinical Practices, coordinated by the **Clinical Research and Clinical Trials Unit**.



Ongoing work on the Action Plan linked to the Human Resources Strategy for Researchers (**HRS4R**) of the EC.

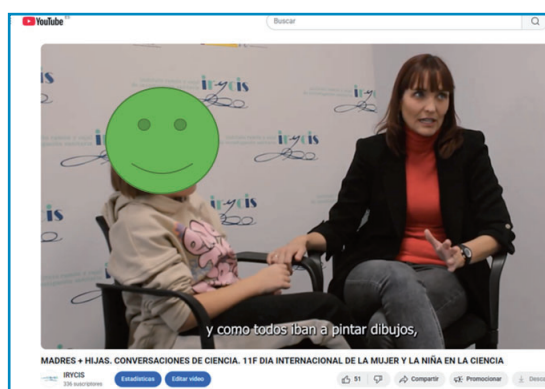
Participation in the Work Group for Implementation of the HRS4R IIS seal of the ISCIII



## 2. GENDER EQUALITY

**Actions to celebrate the International Day of Women and Girls in Science**

**Youtube video:** Three female researchers from different IRYCIS areas talk with their daughters about committing to science. Their daughters, aged 8, 14, 15 and 20, tell what they see in their mothers and whether they would like to follow their footsteps



**Round table:** Financing women's rights: accelerating equality. School of Medicine of the UAH. **Dr. Mansilla**.

Research meeting with gender approach, UAH. Young female researchers, young male researchers in equality. **Dr. Moreno-Pinilla**

**Actions to celebrate the Women's Day**

For second consecutive year, FIBioHRC participated in an initiative, jointly with the Committee against Violence and the Social Work Unit of the Hospital, where all female workers of the institution were gathered to take their photo, and purple ribbons were distributed.



**Youtube video:** In order to celebrate the International Day of LGTBIQA+ Persons in Science, Technology, Engineering and Mathematics, IRYCIS prepared a brief video with the aim to showcase the contribution of the LGTBIQA+ community to science, often made invisible, throughout history.





## 3. CITIZEN PARTICIPATION

### Divulagation and Events

**Pancreatic Cancer Association Meeting.** 10 years United by Hope, by Dr. Esperanza Sainz.

**17th Multiple Sclerosis and Society Conference.** Dr. Costa- Frossard, Dr. Monreal and Dr. Villar.

**Scientific divulgation conference:** “Towards Personalized and Precision Medicine: technological evolution in the diagnosis of rare diseases” within the 24th Cultural Summer at Navacerrada. Dr. Moreno-Pelayo.

**Third edition of “Ciencia Contigo”** with the motto “MicroLife”. Dr. Herencias.

**Solidarity Market for the International Day of Fight against AIDS.** Dr. Holguín.

**2nd Workshop on Hand Hygiene,** with brief training on YouTube. Dr. Aranaz.

**Thinking about us. 12th seminar for breast cancer patients and relatives** on the 25th anniversary of the Breast Conditions Unit. Dr. Martínez-Jáñez.

**9th Congress of Patients with Chronic Myeloid Leukemia.** Dr. García-Gutiérrez.

The Hospital hosts for second consecutive year the **“Research and Development of New Therapies for Stroke Recovery”** conference, an activity included within the Science and Innovation Week. Dr. González-Muñoz, Dr. Jaime Masjuan and Dr. Ezequiel Hidalgo.

**Workshop 360:** Challenges and Goals in Myasthenia Gravis. Different views of the disease. Dr. Rodríguez- Sagrado.

**“Open Day”** at the School of Medicine and Health Sciences of the UAH. **Histology Tour:** “Histology Lab: How to make a histological preparation?” Dr. Pascual. Workshop: “In Search of Pelvic Health”. Dr. Sánchez.

**Round Table for Patients:** The Clinical Trial. Dr. de la Pinta and Dr. García Bermejo.

Participation at the **24th edition of the Science and Innovation Week:** “Therapeutic Use of Cannabis”, Dr. Guzmán; “What is the effect of cannabis on your brain?” Dr. Sagredo and Dr. Rodríguez-Cueto; “Therapeutic Use of Cannabis”, Dr. Rodríguez Cueto; “Profession: Scientist” Dr. Benito; Dr. Moreno-Pinilla.

IRYCIS participates one more year with great success in the 2024 edition of the **“European Research Night”**: Diana Arrebola and Laura Díaz, Dr. Sagredo and Dr. Satta, Dr. Sánchez-Pérez, Dr. Benayas and Dr. Martín, among others.

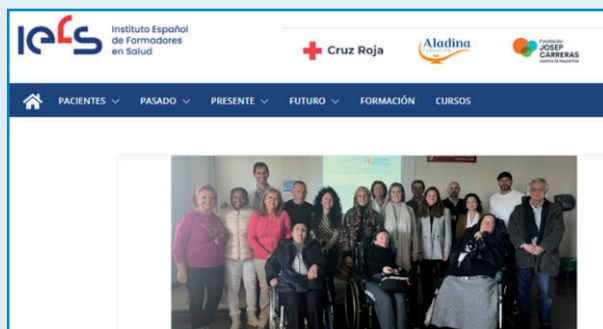
**Meeting with Patients:** “Addressing a Rare Disease: Castleman Disease”. Dr. González-García.

**First National Meeting of Patients with Fibrodysplasia Ossificans Progressiva.** Dr. Bachiller and Dr. Vázquez.

**Science in Nursing Homes Program,** promoted by the Scientific Culture and Innovation Unit (UCC+I) “Voyage inside the brain”. Josefa Segovia Nursing Home. Madrid. Dr. Sagredo, Dr. Gómez-Cañas, Dr. Satta and Dr. Rodríguez-Cueto.

**Case Study by the University for Seniors:** “The human cell: a travel to the core of life”. Dr. Pérez-Köhler.

**Workshop on Quality of Care and Patient Safety in Community Health Centers.** Dr. Aranaz.





# Impact on Society

15

## Interviews, informative articles, podcasts and technical documents

Interview by the Institute Roche Foundation: **Personalized Precision Medicine, key in Neurology of the future**. Dr. Monreal.

Radio interview about **projects against childhood AIDS**, in the "Among Test Tubes" program at National Spanish Radio. Dr. Holguín.

Interview by the "Redacción Médica" newspaper: **Chronic Lymphocytic Leukemia experiences its "great innovation" but with challenges**. Dr. Marquet.

Interview at 11F: **The view of radiotherapy by female professionals**. Dr. de la Pinta.

Interview by EFE: World Diabetes Day. **Is there any alternative to insulin?** Dr. Nattero.

Interview at 20minutos: Andrés González, expert in the rare Castleman Disease; **"If not well diagnosed, it can be life-threatening"**. Dr. González-García.

Interview at "Correo Farmacéutico" about the **Green Hospital Pharmacy project**. Dr. Vélez Díaz- Pallarés and Dr. Álvarez.

ConSalud News: **Faecal microbiota transplants achieve a reduction in chronic inflammation for HIV patients**. Dr. Serrano-Villar.

News at El País: **Zosurabalpin, a new type of antibiotic with successful activity against a deadly super bacteria**. Dr. Cantón.

News at El Médico Interactivo: **The union between digital pathology and Artificial Intelligence will improve lung cancer diagnosis**. Dr. Palacios.

News at Renal+Urology News: **Upfront Surgery May Be Avoidable in Very High-Risk NMIBC Responsive to BCG**. Dr. Subiela.

News at IEFS: **Commitment by the Rheumatology Unit of the Ramón y Cajal University Hospital to patients with Fibrodysplasia Ossificans Progressiva**. Dr. Bachiller and Dr. Vázquez.

Review of informative articles at the **AMELYA Lupus Madrid website**. Dr. Macía.

Informative article at the Science Media Centre: **What do we know about the use of medical cannabis? Questions and answers in light of its regulation in Spain**. Dr. Guzmán.

Informative article at Infobae: **"A new therapy against frontotemporal dementia is discovered, based on a drug for Multiple Sclerosis"**. Dr. Fernández- Ruiz and Dr. de Lago.

Informative articles at Science Media Centre: **"Reactions: 38% of dog owners claim that they give them cannabinoids, according to a Danish survey."**, **"What do we know about the use of medical cannabis? Questions and answers in light of its regulation in Spain"**. Dr. Fernández- Ruiz.

Informative article at Physician's Weekly: **"Targeting cancer stem cell OXPPOS with tailored ruthenium complexes as a new anti-cancer strategy"**. BioPAC Group.

Informative article in different media: **"An antibacterial protein, the new treatment target against pancreatic cancer"**. Dr. Sainz.

Participation at the "Interesting People" podcast: **"The effects against cancer of cannabis"**. Dr. Manuel Guzmán. Dr. Guzmán.

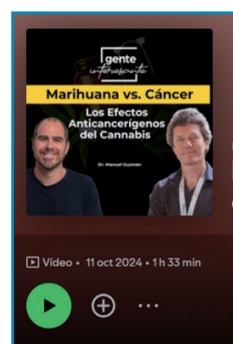
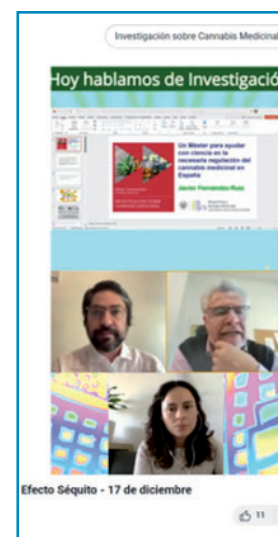
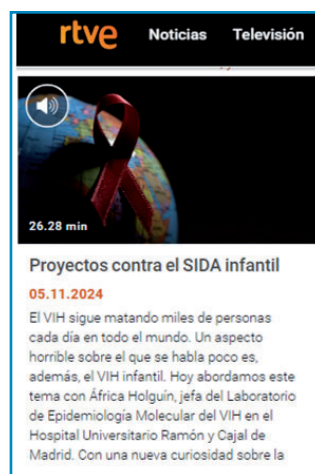
Participation in the **"Palabras Con Salud" (Words with Health) podcast**, led by Marina Montiel. Dr. González Cantero and "Better", with approximately 200K subscribers, to talk about alopecia. Dr. Hermosa-Gelbard.

Participation in the podcast from El País: **"The "joint" law or what we can learn from Germany"**. Dr. Fernández-Ruiz.

Participation in the SEFAC podcast: **"The difference is in the dose"**. Dr. Antolín.

Participation in a YouTube episode: **"Research on Medical Cannabis – The Entourage Effect – December 17th"**. Dr. Fernández-Ruiz.

Technical document: **"Strategy on stroke by the National Health System. 2024 Update."** Dr. de Abajo.



# Impact on Society

## Projects and work groups

**REMEDI4ALL Project.** “Building a sustainable European innovation platform to enhance the repurposing of medicines for all”. European innovation platform that supports projects for the reutilization of promising and high-impact medications, where patients will play a central role. Dr. García Bermejo.

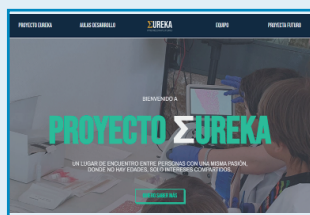
**SO-NUTS Project.** “Preventing obesity, sarcopenia, and Sarcopenic Obesity in retirement – digital personalized interventions for healthy NUTrition and physical activity for Seniors”. A project funded by Europe in order to promote healthy habits during retirement. Dr. Cruz-Jentoft.

**EUREKA Project.** Genetics Workshop for boys and girls with high intellectual capacity. Dr. Pérez-Köhler.

**RETENTION Project.** “heaRt failurE paTient managEmEnt and iNTerventIOns usiNg continuous patient monitoring outside hospitals and real world data”. European project that studies the effect on the daily life of patients of introducing protocols for monitoring outside hospital. Dr. Zamorano.

**BIG DATA Project** for the improvement of the journey for Multiple Sclerosis patients (Novartis). Dr. Villar.

Participation in the **Patient Engagement** Work Group of the IIS alliance of ISCIII.



## Acknowledgement of our social impact

**AEV Awards 2024.** Honour Award to the Quickvaccine Project. Dr. Fernández-Chávez and Dr. Aranz. Dr. Aranz.

**9th SaluDigital Awards.** Runner-up at the “Health app” category”: Quickvaccine App. Dr. Fernández-Chávez and Dr. Aranz. Runner-up at the “Digital Public Health Initiative” category: ACOMPAIN App. Dr. de la Pinta.

**2024 Best in Class Award** to the best Preventive Medicine and Public Health Unit. Dr. Aranz.

**2024 Latido Award** to the social responsibility for the 25-year experience of the Breast Conditions Unit in breast cancer diagnosis and treatment in Spain. Dr. Pérez Mies.

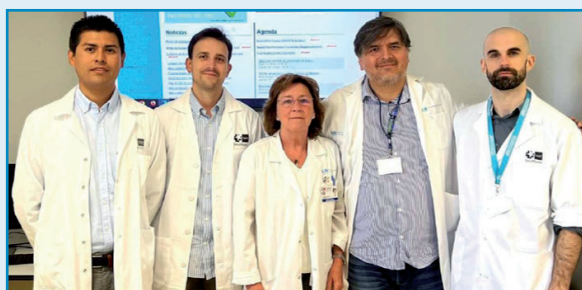
**GEPAC Awards** for the best volunteering and active participation project to the School of Colorectal Cancer Patients. Dr. Ferreiro.

**3rd Awards to Social Innovation:** Pharmacists and ODS of the General Council of Official Pharmaceutical Colleges, to the “Green Hospital Pharmacy” project by the Pharmacy Unit. Dr. Palomar, Dr. Pérez and Dr. Vélez.

**1st Regional Cooperation Awards by the Community of Madrid.** Dr. Centella, a Cardiac Surgeon of our hospital, has been acknowledged by her work as cooperant for childhood, highlighting her altruist commitment and contribution to international solidarity.

**Accreditation by the Official Center for Imaging Training.** The Rheumatology Unit of the hospital receives this prestigious acknowledgement, which allows to accept Rheumatologists from all over Europe in order to be trained in different imaging techniques. Dr. Vázquez.

Ten hospital specialists are acknowledged as “**The Most Reputable Doctors**” in Spain by MERCO and ODS. Dr. Zamorano, Dr. Albillos, Dr. Moreno, Dr. Cruz, Dr. Acero, Dr. Jaén, Dr. Vañó, Dr. Manzano, Dr. Palacios and Dr. Sales.





## Platforms and Mobile Applications

### IRYCIS Youtube channel.

**SER+CONTRACOVID.** An app targeted to strengthening the coping ability of healthcare professionals or supporting staff in situations of extreme workload pressure.

**ACCOMPAIN App**, for oncological pain monitoring, created by IRYCIS+UPM in order to improve the quality of life of patients, and to help healthcare staff in decision making.

**No Hacer App**, in order to reduce low-value practices and therefore improve patient safety.

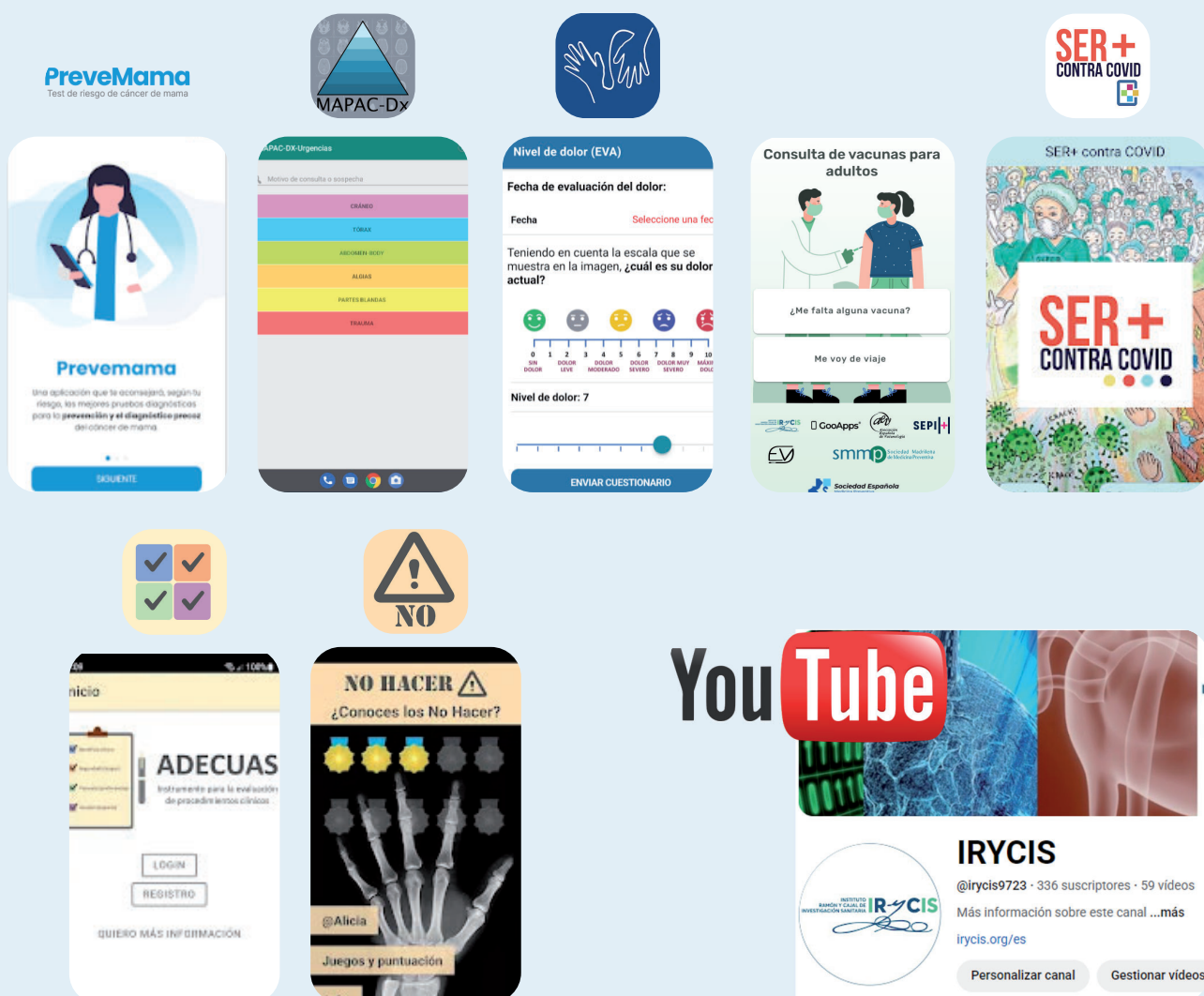
**ADECUAS App.** A tool for the evaluation of clinical procedures.

**MAPAC-DX.** An App to improve the suitability of ordering diagnostic tests at the Emergency Unit.

**Quickvaccine.** An informative App to create awareness on the importance of vaccination in adults.

**EpiMolBio.** A bioinformatics tool for the study of genetic variability in pathogens.

**VIDAIVIMM Dashboard** for follow-up of multiresistant diseases.



# Impact on Society

15

## Media

During 2024, IRYCIS has been present in 68 occasions in the media, addressing subjects such as commitment to patients with Fibrodysplasia Ossificans Progressiva, antiretroviral resistance in adolescents newly diagnosed with HIV in Spain, the stimulation of stem cells involved in the regeneration of injured tissues, a new therapeutic target against pancreatic cancer, the use of Artificial Intelligence for an early detection of prostate cancer and for improving diagnosis in lung cancer, a new mechanism that accelerates the evolution of antibiotic-resistant bacteria, faecal microbiota transplants in persons with HIV, the authorization of a clinical trial in order to assess a treatment against recurrent diverticulitis, acknowledgements and awards granted to the IRYCIS staff, etc.





## 4. SCIENTIFIC EDUCATION

### Actions to promote research vocations

IRYCIS participates for second consecutive year in the Educational Stay Program **“ESO + EMPRESA”** (secondary education + COMPANY) for 4th year students, organized by the Patient Care Unit of the Ramón y Cajal University Hospital.

Over 40 engineers are received one more year in different units of our Hospital, through a **collaboration between IRYCIS and the UPM**.

**Female IRYCIS researchers visit schools and institutes of the Community of Madrid and surrounding areas every year**, in order to make visible the female scientist, to show and reinforce roles still underrepresented, and to promote scientific vocations in girls and female adolescents.

Dr. Sagredo and Dr. Satta (Fernández Moratín Primary School), Dr. Rodríguez-Cueto (Gredos College San Diego Las Suertes), Dr. Mansilla (Juan Carlos I College, Ciempozuelos), Dr. Sánchez-Pérez (San Gabriel College), Dr. Martín Pedraza (Matemático Puig Adam Secondary School, Getafe), Dr. García- Gallego (Las Lomas College,

Guadalajara), Dr. del Campo (Las Canteras Secondary School, Collado Villalba), Dr. Camaño (Manuel de Falla Secondary School), Miriam Sanz (Zazuar College), Dr. Domínguez (Bachiller Alonso López College), Dr. Holguín (King’s College, Soto de Viñuelas), Bárbara Luna (Maria Montessori Secondary School and School of Pharmacy).

**Seminars and workshops** for High School students at the Arturo Soria College, Madrid. School of Medicine, UCM. Dr. Fernández-Ruiz.

Science in Nursing Homes Program, promoted by the Scientific Culture and Innovation Unit (UCC+I) **“Voyage inside the brain”**. Orpea Nursing Home, Las Rozas, Madrid. Dr. Sagredo and Dr. Satta.

**Open Days at the UAH Scientific-Technological Campus** for Secondary School Centres, year 2024/2025. Dr. Pascual and Dr. Rivas.

UAH Workshop: **“Chemistry in Action”**. Dr. Sánchez-Nieves.



## Conferences, courses, scientific meetings and other scientific forums

**4th Course on Demyelinating Diseases** for Neurology residents. Dr. Costa-Frossard and Dr. Villar.

**19th Inter-Hospital Conference** at the Ramón y Cajal University Hospital. Dr. Moreno-Pelayo.

**3rd Conferences on Viral Psychiatry:** Dual Pathology and Infectious Diseases. Dr. Ibáñez.

**Course on “Update on Refractive Surgery for Authorization and Inspection of Healthcare Centres”.** Dr. Arnalich.

**19th Conference on Travel Medicine.** Dr. Pérez Molina.

**3rd Conference on Rational Use of Antimicrobial Agents:** Strategies for its optimization. “New actions to improve the use of antimicrobial agents”. Dr. Cantón.

**Lecture at the Inter-Congress Conference by the Society of Preventive Medicine 2024:** “Advances in monoclonal antibodies and immunizations”. Dr. Fernández Chávez.

**Lecture:** “An Integrated System of Quality and Continuity of Care between the hospital setting and sociosanitary centres”, **at the Conference for Quality of Care and Patient Safety in sociosanitary centres.** Dr. San José.

**1st National Multidisciplinary Conference on Type 1 Diabetes.** Dr. Nattero.

**Advances and challenges in the Breast Conditions Units.** 25 years at the cutting-edge in breast cancer diagnosis and treatment. Dr. Palacios and Dr. Pérez-Mies.

**New edition of the Tutor in Chronic Myeloid Leukemia,** welcoming 15 Mexican Haematology professionals. Dr. García Gutiérrez.

**2nd Conferences of the ISCIII Platforms for R&D&I Support in Biomedicine and Health Sciences.** Dr. García Bermejo.

The Hospital hosted the “**2024 Health Hackathon**” for the third time, with participation by IRYCIS/FIBioHRC in its organization.

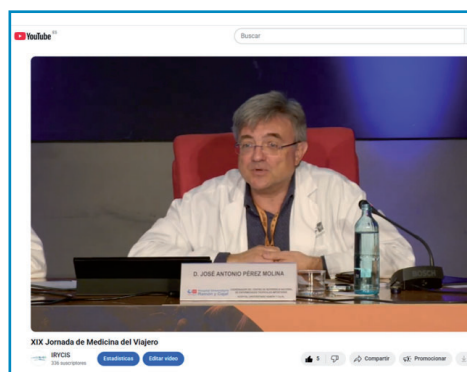
The Hospital hosted the **4th Healthcare Research Conference of the Community of Madrid**, with participation by IRYCIS/FIBioHRC in its organization.

**Event-Workshop:** The Ecosystem and European Funding Opportunities for Cancer. Dr. Earl.

**EMBO workshop:** “Lymphatic tissues and germinal centres in immune reactions”. Galway, Ireland. Dr. Martínez.

**5th EBC meeting.** Egmond aan Zee. The Netherlands. Annual meeting focused on bifurcations, which brings together medical, engineering, biology, physicist, epidemiology and statistics staff. Dr. Martínez.

**Conference on Eosinophilia-SMFH** (Society of Hospital Pharmacists of Madrid). Dr. Muñoz-García.



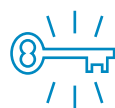
Within [training section in our website](#) there is detailed information available about the courses and seminars organized by IRYCIS, including means of access and enrolment, which is updated every six months. There is also a link to “Other events”, for access to information about courses, conferences, webinars, etc., organized by other institution.



# Impact on Society

## 5. OPEN ACCESS

Our researchers support open publication.



There is an ongoing increase in the IRYCIS research staff members who have an ORCID code.



IRYCIS has an *Open Science Policy*.



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



CONSEJERÍA DE SANIDAD

**REPOSITORIO INSTITUCIONAL**

DE LA CONSEJERÍA DE SANIDAD DE LA COMUNIDAD DE MADRID

## 6. RESPONSIBLE GOVERNANCE

**Independent Ethics Committees:** Animal Experimentation Ethics Committee (AEEC) and Research Ethics Committee (REC).

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

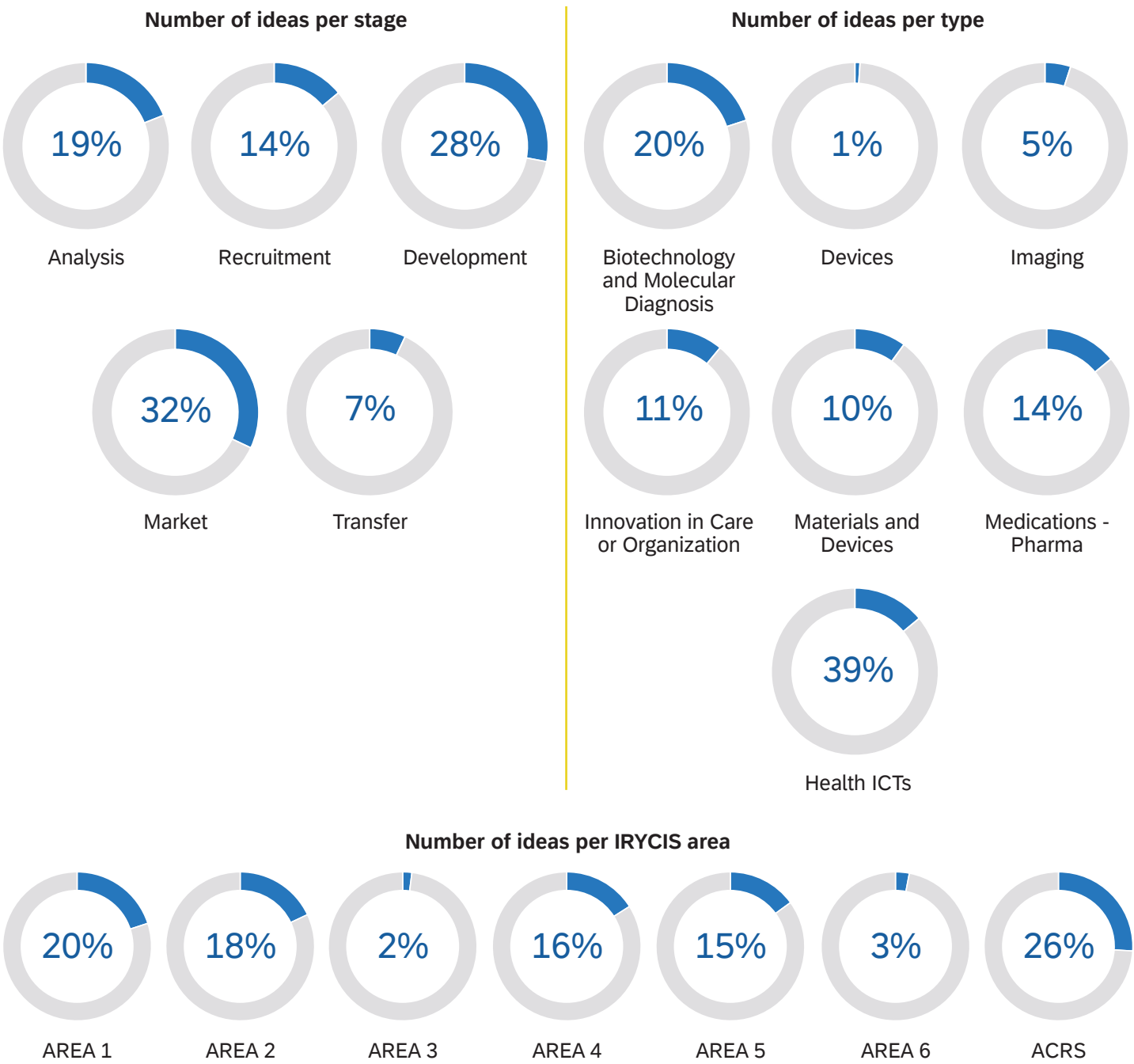


## Innovation Portfolio in 2024

The IRYCIS Innovation Portfolio in 2024 includes 147 active projects. These are classified, according to ITEMAS requirements, by the traditional funnel stage of innovation, and their technological area, as follows:

STAGE	Biotechnology and Molecular Diagnosis	Devices	Imaging	Innovation in Care or Organization	Materials and Devices	Medications - Pharma	Health ICTs	TOTAL
Analysis	4	1	0	3	2	6	12	28
Recruitment	1	1	0	0	2	1	15	20
Development	10	0	2	3	7	6	13	41
Market	11	0	4	10	3	5	14	47
Transfer	4	0	1	0	0	2	4	11
Total	30	2	7	16	14	20	58	147

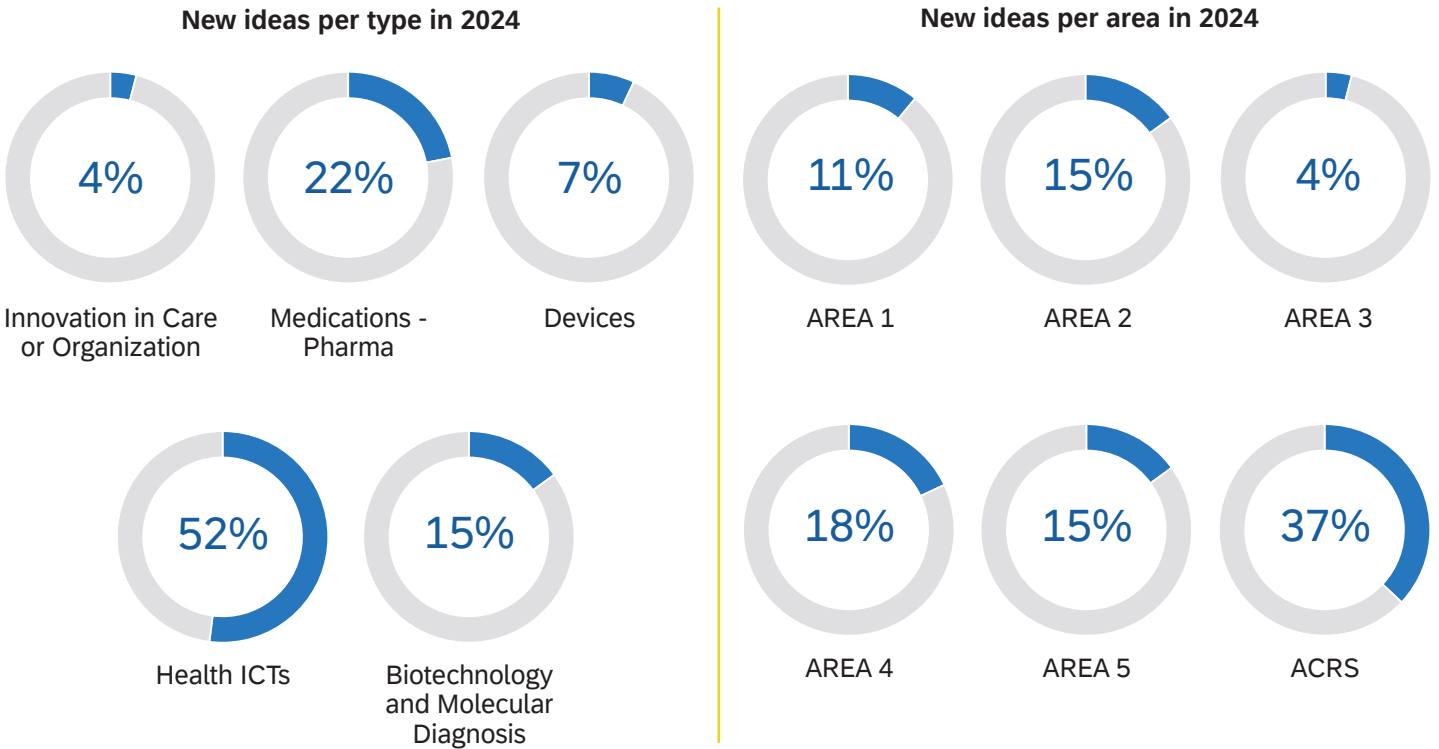
The ideas in the portfolio are classified according to their type and their current stage, by:





# Innovation Unit

The 27 new ideas registered by the Innovation Unit in 2024 belong mostly to the ICTs type, with over 50% in this category. Moreover, 8 of them have been submitted by new innovators who had no previous innovation projects. Of these new ideas, 52% are for Health ICTs, and 22% for Medications / Pharma.



# Innovation Unit

## Intellectual and Industrial Property

### Patents:

Active families

31 

New applications during the year

12 

6 European priorities and 1 Priority by PCT

3 PCTs

3 entries in national stages

New Patent Grants

1 

Granted and valid during the year

29 

Intellectual Property Registrations

5 

## Entrepreneurship, Transfer and Implementation at the Hospital

4 Start-ups constituted and active in 2024

Projects have been presented to Nowture: EMCare, ULISSES and Sendimust, ArtDose.

NOWTURE

Se ha lanzado la webapp Quickvaccine.



3 projects have been included in the HealthStart entrepreneurship program (LoadFoot, BiopsIA and Diana).

healthstart  
madried

An agreement has been signed with Novartis for the management of alerts with Biochemistry and Nephrology, for patients with Chronic Renal Disease.

 NOVARTIS

There has been follow-up of the Innovation Portfolio with Rosendo Garganta (investor and member of the IRYCIS Innovation & Social Advisory Board): EMCare, ULISSES, VIDA, ArtDose, Urethral Stent.

The SGInn (map of processes) has been shared with the Infanta Leonor University Hospital.

Agreement with Owkin to assess the suitability of participating in Pharos II.



## Communication, presence in business forums and media

Educational and informative actions

30 

Pieces of news in communication media about projects managed by the IU

17 

Agreements signed (alliances, framework agreements, and specific collaboration agreements)

34 

11 MTAs and 19 CDAs signed

30 

New projects for applications presented at the eSalud Hackathon (3 awards) and 3 HealthStart 2024 entrepreneurship projects.

5 

Participation in divulgation actions for innovation in nursing, the 4th ESO + company initiative, visit by Roche executives, table at InforSalud, seminar at IRYCIS by Dr. Lluís Blanch, visit by the USF-TI, seminar by Dr. Eva Hurt, Tekniker AI Workshop, ITEMAS investment fund, Research Conference of CAM, Conference on Stroke, 9th Hackathon.

## Participation in Public Calls

Public-private collaboration (MCINN)



DTS (ISCIII)



HealthStart (FMadrid+d Foundation)



Horizonte Europa (UE)



8th Digital Health Awards



Hazitek



Deep Tech 2024



TransMisiones



Hackathon



ITEMAS



AEV Award



★ There is a 50% success rate in projects awarded that were supported by the Innovation Unit in their application

## Other Activities of Interest

The Innovation Unit conducted the follow-up audit for UNE 16002:2021 “R&D&I Management System” in July 2024, regarding management of innovation projects, maintaining its certification for the rule.

Gestión  
I+D+i

UNE 166002

As a member of the ITEMAS Platform, throughout 2024 the Innovation Unit:



- Has been the Coordinator for the Transfer Committee
- Has been a member of the ITEMAS Innovation Committee
- Has been a member of the Board of Management
- Has been present in meetings between committees.
- Has supported training and mentoring for projects from other centres (Infanta Leonor University Hospital and IDISCAM)

## ACTIVE EUROPEAN PROJECTS AND INTERNATIONAL INITIATIVES

The IRYCIS research groups have wide experience, both as consortium partners and as leaders of competitive projects funded by the European Commission. IRYCIS is not only part of the current Research and Innovation Framework Program from the European Union, “Horizonte Europa”, but also participates in programs such as DIGITAL, EU4Health, ERASMUS, EIT Health, and IHI, among others.

### Some figures in 2024:

New applications for international calls

27 

Active projects and international initiatives

37 

Active coordinated projects

3 

### IRYCIS as a member of European platforms or networks

**EATRIS:** *European Infrastructure for Translational Medicine.* Dr. M<sup>a</sup> 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*



## Research and Innovation Framework Program of the European Union

### Cornerstone I: Excellent Science

2 ERC Starting Grant (H2020 & HE) Projects



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



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





## 1 Marie Skłodowska-Curie (HE) Grant



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



## 1 project for research infrastructures HE



**EATRIS-CONNECT:** (101130349)  
Dr. Laura García Bermejo



## Cornerstone II: Social Challenges (H2020) / Global Challenges and Industrial Competitiveness (HE)

### 4 collaborative projects in the H2020 program



**ImmunAID:** *Immunome project consortium for AutoInflammatory Disorders* (779295). Dr. Alina Boteanu and Dr. M<sup>a</sup> Angeles 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



7 collaborative projects within  
the “Horizonte Europa” program



## Clúster 1: Health

**REMEDI4ALL:** Building a sustainable European innovation platform to enhance the repurposing of medicines for all (101057442).  
Dr. María 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



## Clúster 2: Culture, Creativity and Inclusive Society

**TECHCONNECT:** Assessing and Strengthening Human-Tech Skill Complementarity in the Digital Landscape (101177251).  
Dr. María Elena García Barriocanal



## Clúster 3: Civil safety for the society

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



## Digital Europe Program



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



## EU4Health Program



**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* (101113109).  
Dr. Rafael Cantón



## EIT Health Program



**MORESCREEN:** *Improving colorectal cancer screening: the complementary role of liquid biopsy* (10242699).  
Dr. Agustín Albillos



## Other research initiatives

### 4 projects of the Innovative Medicines Initiative (IMI-7PM/H2020)



**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). Dr. Luisa M<sup>a</sup> Villar



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





## 1 transnational project in European partnerships



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



## 5 projects / networks in Joint Programming Initiatives



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



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



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



**ERADIAMR:** *Effective Rapid Diagnostics and treatment of AntiMicrobial Resistant bacteria.*  
Dr. Rafael Cantón



## 1 project in the EDCTP2 program



**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.*

Dr. María Laura García Bermejo



European University Alliance for Global Health

## Participación in 3 COST Actions



**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 and Dr. Julie Earl



**EURO-VALDI-NET:** *European vascular liver diseases network (CA23146).* Dr. Luis Téllez



## 1 European tender in a consortium by the JRC



**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 trials derived of European projects

**DEFINITIVE trial (101136953):** *Diagnostic HER2DX-guided treatment for patients with early-stage HER2-positive breast cancer.*  
Dr. Elena López Miranda

**DEFINITIVE**

**REMAP-CAP trial (965313):** *Randomized, Embedded, Multifactorial Adaptive Platform trial for Community-Acquired Pneumonia.*  
Dr. Cruz Soriano



# Main Networks, Platforms, Alliances and Consortiums

## ISCIII Networks and Platforms




### CIBER (Biomedical Research Consortium Network)

IRYCIS participates in 11 of the 13 CIBERS and leads 16 CIBER groups

 <b>DEM</b> CIBER for Diabetes and Metabolic Conditions Associated Dr. Héctor F. Escobar	 <b>ER</b> CIBER for Rare Diseases Dr. Miguel Ángel Moreno	 <b>SAM</b> CIBER for Mental Health Dr. Ángela Ibáñez	 <b>CV</b> CIBER for Cardiovascular Conditions Dr. José Luis Zamorano
 <b>ONC</b> CIBER for Cancer Dr. Alfredo Carrato Dr. Jose Palacios	 <b>EHD</b> CIBER for Liver and Digestive Diseases Dr. Agustín Albillos Dr. Melchor Álvarez de Mon	 <b>ESP</b> CIBER for Epidemiology and Public Health Dr. Juan Carlos Galán Dr. Javier Zamora	 <b>NED</b> CIBER for Neurodegenerative Diseases Dr. Manuel Guzmán Dr. Javier Fernández Ruiz
 <b>BBN</b> CIBER for Bioengineering, Biomaterials and Nanomedicine Dr. Gemma Pascual	 <b>ES</b> CIBER for Respiratory Diseases Dr. David Jiménez	 <b>INFEC</b> CIBER for Infectious Diseases Dr. Rafael Cantón Dr. Santiago Moreno Dr. José A. Pérez Molina	

### Cooperative Research Networks Focused on Health Outcomes (RICORS)

6 IRYCIS groups also lead groups in the following networks:

 RICORS-ICTUS (Cerebral Vascular Diseases) Dr. Alberto Alcázar	 RICORS2040 (KIDNEY DISEASE) Dr. María Laura García Bermejo Dr. Diego Rodríguez Puyol Dr. Juan José Vaquero	 RICORS-Inflammatory Diseases Dr. Luisa María Villar Dr. Francisco Muñoz Negrete
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### Platforms

IRYCIS is a member of the following support platforms for research in health sciences and technologies:

 Support Network for Clinical Research - SCReN Dr. María Ángeles Gálvez	 Biomodels and Biobanks Platform Dr. Sonia Camaño	 Platform for Dynamization and Innovation of the National Health System Industrial Capacities and their effective transfer to the productive sector (ITEMAS) D. Diego Velasco
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# Main Networks, Platforms, Alliances and Consortia

## CAM Biomedicine Consortia

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

**PRECICOLON-CM:** Towards Precision Medicine in colorectal 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 Immunological Environment in Thyroid Conditions: cancer and autoimmune disease

Dr. Pablo Valderrábano



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

Dr. María Laura García Bermejo

## IRYCIS holds management positions in:



**Platform for Dynamization and Innovation of the National Health System Industrial Capacities and their effective transfer to the productive sector**

D. Diego Velasco  
Manager of the Transfer Committee



**European infrastructure for translational medicine**

Dr. María Laura García Bermejo  
National Scientific Director

**Science and Technology Council of the Community of Madrid**

Dr. María Laura García Bermejo  
Member



**ProPatiens Institute**

Dr. Pilar Garrido  
Steering Committee



**European Committee on Antimicrobial Susceptibility Testing**

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



**Spanish Society of Neurosurgery**

Dr. Luis Ley  
Second Deputy Chairman



**Managing Board – Spanish Academy of Dermatology and Venereology**

Dr. Sergio Vañó  
General Secretary



**ESMO Women for Oncology Committee**

Dr. Pilar Garrido  
ESMO Fellowship Committee



**Spanish Society of Glaucoma**

Dr. Francisco J Muñoz Negrete  
Chairman

**Pancreatic Cancer Europe**

Dr. Alfredo Carrato  
Chairman



**Spanish Association of Human Genetics**

Dr. Miguel Ángel Moreno  
Deputy Chairman



**Spanish Society of Haematology and Hemotherapy**

Dr. Valentín García  
Deputy Chairman



**SOCIEDAD ESPAÑOLA DE OFTALMOLOGÍA**

**Spanish Society of Ophthalmology**

Dr. Francisco J Muñoz Negrete  
Deputy Secretary-Treasurer



**European Hair Research Society**

**European Hair Research Society**

Dr. Sergio Vañó  
General Secretary

# Main Networks, Platforms, Alliances and Consortia



**Spanish Group for Chronic Myeloid Leukemia (GELMC)**

Dr. Valentín García  
Chairman



**SEC Group of Young Cardiologists**

Dr. Cristina Lozano  
Chairman



**National Registry of Cardiac Rehabilitation Units**

Dr. Carmen de Pablo  
Coordinator of R-EURECa



**European PCR TRICUSPID Focus Group**

Dr. José Luis Zamorano  
Chairman



**FRB Keratoconus Registry**

Dr. Francisco Arnalich  
Steering Committee



**FRB Dry Eye Registry**

Dr. Francisco Arnalich and Dr. David Mingo  
Steering Committee



**Society of Endocrinology, Nutrition and Diabetes of the Community of Madrid**

Dr. Héctor Escobar  
Chairman

Dr. Ignacio Botella  
1st Deputy Chairman



**Spanish Society of Rehabilitation and Physical Medicine**

Dr. Carolina de Miguel  
Deputy Chairwoman



**GESIDA**

Dr. José Antonio Pérez Molina  
Permanent Advisory Board



**Spanish Group for Neuro-Oncology Research (GEINO)**

Dr. María Ángeles Vaz  
Chairwoman



**Rare Diseases Group of the Spanish Society of Internal Medicine**

Dr. Mónica López  
Member



**AdrenoSEEN Group of the Neuro-Endocrinology Area**

Dr. Marta Araujo  
Coordinator



**National Committee of the Geriatrics Specialty**

Dr. Alfonso Cruz-Jentoft  
Chairman

# Main Networks, Platforms, Alliances and Consortiums

18

## Other national networks and alliances

The IRYCIS Research Staff also leads groups and/or participates actively in:



# Main Networks, Platforms, Alliances and Consortia

18

orphanet

excelencia **UAM**  
**CSIC+**

**GE**  
**LMC**

Gemfin

**iCMLf**

**icmm**  
**CSIC**

**ULL**

aptus  
biotech

**IBEC**<sup>R</sup>

Institute for Bioengineering of Catalonia



**NanoBioCel**  
Micro and Nano technologies,  
Biomaterials and Cells Research Group

**CLÍNICA**  
**BARCELONA**

Hospital Universitari



**Universidad**  
**Zaragoza**

**IQM**

Instituto de  
Química Médica

**INNOREN-CM**

**Amelya**  
LIPUS MARKET

**MPS**  
**LISOSOMALES**



**MAPAC**

Mejora de la Adecuación de la  
Práctica Asistencial y Clínica

FEDERACIÓN  
ESPAÑOLA de LUPUS  
**felupus**

**IF** **TEÓFILO HERNANDO**  
I+D del Medicamento / Drug Discovery



**VIVACELL**

Biotechnology España

## International

**eatris**

European infrastructure  
for translational medicine

**ECRIN**  
EUROPEAN CLINICAL RESEARCH  
INFRASTRUCTURE NETWORK

**jpiamr**  
Joint Programming Initiative  
on Antimicrobial Resistance

**eit** Health



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH



National Institutes  
of Health

**EUCAST** EUROPEAN COMMITTEE  
ON ANTIMICROBIAL  
SUSCEPTIBILITY TESTING  
European Society of Clinical Microbiology and Infectious Diseases



**AE-PCOS**  
ANDROGEN EXCESS & PCOS SOCIETY

**EuroSIDA**

**GEOSENTINEL**  
The Global Surveillance Network of the ISTM in Partnership with CDC

**RDI** hiv resistance  
response database initiative



PROGRAMA  
IBEROAMERICANO  
**CYTED**  
CIENCIA Y TECNOLOGÍA PARA EL DESARROLLO



**TropNet**  
European Network for  
Tropical Medicine and  
Travel Health



**International**  
**Osteoporosis**  
Foundation

**ALIPAN**

**EMORY**  
UNIVERSITY

**PANCREATIC**  
CANCER EUROPE

The European Multi-Stakeholder Platform on Pancreatic Cancer



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

**EuroTravNet**

**eau** European  
Association  
of Urology



**Escola Nacional**  
**de Saúde Pública**  
UNIVERSIDADE NOVA DE LISBOA

**PRECEDE**  
The Pancreatic Cancer  
Early Detection Consortium

**World Health**  
**Organization**



**UNIVERSITY OF**  
**BIRMINGHAM**

**REDIBA**

Joint United Nations Programme on HIV/AIDS  
**UNAIDS**  
UNICEF • UNDP • UNFPA • UNDCP  
UNESCO • WHO • WORLD BANK



# Main Networks, Platforms, Alliances and Consortiums

18



# Training

## Global Indicators

Visitors received by  
IRYCIS groups

52



Attendees

3.905



Training activities

95



Hours

1.097



## Training Committee

The mission of the IRYSCIS Training Committee is to ensure complementary research training for all persons in the Institute, implementing and updating training programs, seminars, and other scientific divulgation activities.

### Courses

Meetings held to prepare, coordinate  
and evaluate its activity

4



Courses delivered (20 accredited  
by the Community of Madrid)

24



Teaching hours  
delivered

320



Places offered

519



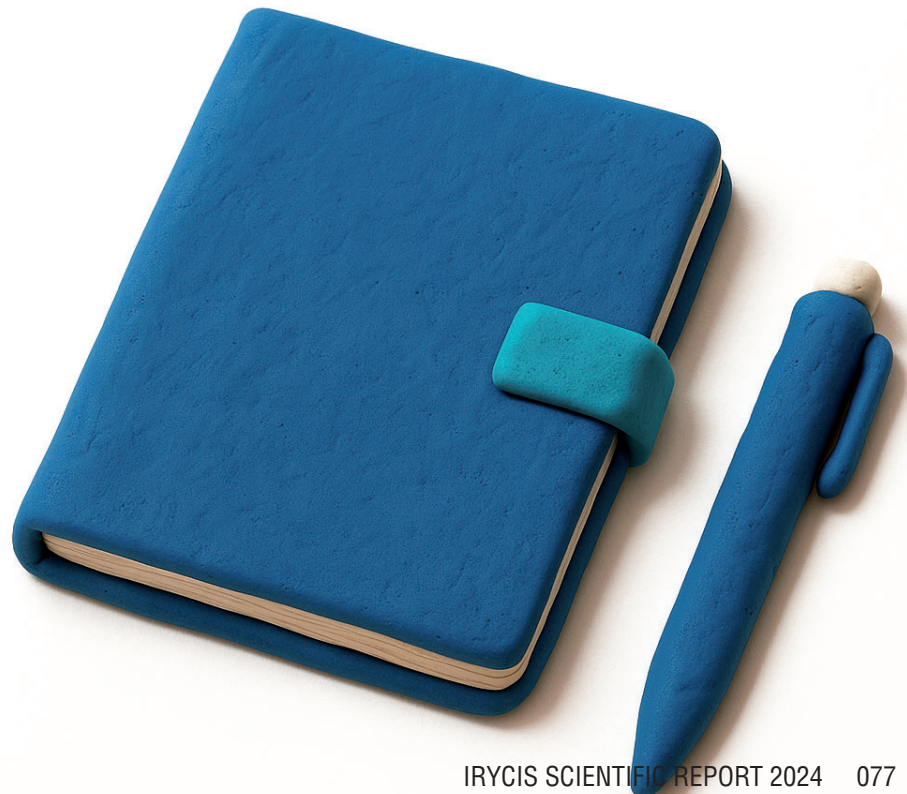
Students

310



Mean attendance

87%



# Training

19

## List of Courses

<p><i>Normalized Currículum Vitae (NCV)</i></p> <p>Coordination: Noelia Álvarez</p>	<p>Workshop for bibliographical references management. ZOTERO</p> <p>Coordination: Noelia Álvarez</p>	<p>Ethics in scientific publication</p> <p>Coordination: Carolina de la Pinta</p>
<p>Clinical Research: Different types of studies, methodologies, and requirements to initiate them</p> <p>Coordination: M<sup>a</sup> Ángeles Gálvez</p>	<p>Use of REDCap for electronic data management in biomedical projects</p> <p>Coordination: Jorge Lázaró</p>	<p>Google tools applied to research</p> <p>Coordination: Marien Castillo</p>
<p>Translational Research Techniques I: Applications in basic research</p> <p>Coordination: Elena Martín and Elisa Conde</p>	<p>GdT-MODALT-EERR: Course on functional trials on mice-alternative models in biomedical research</p> <p>Coordination: Miguel Á. Moreno y Matías Morín</p>	<p>Techniques for scientific writing in English</p> <p>Coordination: Juan Carlos Murciano</p>
<p>The art of speaking in science</p> <p>Coordination: Juan Carlos Murciano</p>	<p>Training Course on Good Clinical Practices: ICH E6 (R2) and BPC – Clinical research on healthcare products for humans (ISO 14155:2020)</p> <p>Coordination: M<sup>a</sup> Ángeles Gálvez</p>	<p>R in Biomedicine: Practical Introduction Course</p> <p>Coordination: Val Fernández</p>
<p>Personal efficacy and leadership in the predoctoral stage</p> <p>Coordination: Claudio Díaz, Alejandro Escobar and Sandra García</p>	<p>Techniques for Scientific Presentation</p> <p>Coordination: Juan Carlos Murciano</p>	<p>J/FIJI Imaging for application in health research and clinical practice</p> <p>Coordination: Rebeca Busto</p>
<p>Divulge science, divulge evidence</p> <p>Coordination: María Insenser y Alicia Mansilla</p>	<p>Introduction to Basic Statistics I</p> <p>Coordination: Borja M. Fernández</p>	<p>Continuous training on animal experimentation</p> <p>Coordination: Beatriz Barrocal, Ana Ortiz y Federico Soria</p>
<p>Introduction to Basic Statistics II</p> <p>Coordination: Borja M. Fernández</p>	<p>Vector Design with Inkscape: How to improve your illustrations for scientific publications</p> <p>Coordination: Jerónimo Rodríguez</p>	<p>Translational Research Techniques II: Animal models in biomedical research</p> <p>Coordination: Elena Martín y Elisa Conde</p>
<p>Art in Scientific Writing</p> <p>Coordination: Juan Carlos Murciano</p>	<p>Survival Analysis with STATA</p> <p>Coordination: Borja M. Fernández</p>	<p>Bioinformatic Analysis of Massive Sequencing Data applied to genetic diagnosis</p> <p>Coordination: Miguel Á. Moreno y Matías Morín</p>

## Seminars



Seminars delivered by IRYCIS Research Staff in Training



## General courses and scientific events



## Teaching Plan for Research Staff in Training (RST)

The Teaching Plan for Research Staff in Training has a 4-year duration, split into a basic level (first and second years) and an advanced level (third and fourth year). It establishes rotations, courses, and other activities to be conducted by the RST during each of their 4 years of predoctoral training, and 2 years (exclusively for advanced level) if there is postdoctoral training. There is a tutor for each RST during the entire training period. Rotations, courses and activities conducted by the RST are evaluated every year.





The IRYCIS Portfolio of Services is built through the scientific-technique activity of the Institute staff, organized into Central Support Units (UCAs) for Research and other Scientific-Technical Services (STS).

The primary mission of UCAs is to deliver intermediate scientific-technical services to IRYCIS and other public and private institutions, offering cutting-edge techniques, and making the experience and knowledge of the specialized staff not only available to IRYCIS, but also placing it at the service of any relevant organisms associated with national and international biomedical research

The services offered by the IRYCIS Central Support Units for Research appear in the following link:  
<https://www.irydis.org/en/services/>

**Animal Facility and Experimental Surgery**

**Biobank and Biomodels**

**Clinical Biostatistics**

**Lipidomic and Proteomic Characterization**

**Clinical Research and Clinical Trials in Early Stages**

**Translational Genomics and Bioinformatics**

**MiRNA-based Biomarkers and Therapeutic Targets**

**Aptamers**

**Data Science**

**Microscopy, Histology, and Comparative Pathology**

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





## Coordinator

Federico Soria Gálvez

## Staff

2 Veterinarians specialized in lab animals  
1 lab technician  
3 caretakers

## Contact

91 336 80 74  
federico.soria@salud.madrid.org



## REMARKABLE FACTS

- Authorization for handling genetically-modified organisms
- In the process of implementation a quality system and AENOR regulation



## SERVICES

- Breeding of rats.
- Animal maintenance (murine, rabbit or pig).
- Surgical procedures.
- Drugs.
- Ex vivo simulators.
- Processing of projects as an authorized animal welfare body.



## EQUIPMENT

- Area for large animals: 3 independent and all-purpose rooms.
- Rodent area: rooms for quarantine and external animals, 2 rooms for mice, 2 rooms for rats, a room with self-ventilated racks for SPF animals, etc.
- Two experimental operating rooms for large animals.
- Pre-operating room to conduct pre-anesthesia and animal preparation.
- Operating room for rodents with 4 surgical microscopes.
- 2 autoclaves.





**Coordinator**  
Sonia Camaño Páez

## Staff

### BIOBANK

Bárbara Luna (Lab-Biobank Manager)

### BIOMODELS

Bruno Sainz Anding  
(Coordinator of *in vivo* models –PDX)

Laura Ruiz (*In vivo* models manager)  
Julie Earl (Coordinator of *in vitro* models /  
cell lines / organoids)

## Contact

biobanco@salud.madrid.org  
91 336 90 75



## REMARKABLE FACTS

Biobank is characterized for making available to the scientific community the biological materials required for research, in optimal conditions that ensure competitiveness and excellence in research. It also offers technical support for sample processing in those projects that require it. The Biobank activity is characterized by:

- Process Control: Quality Management System according to the UNE-EN ISO 9001:2015 rule. Certified by SGS ICS (No. ES13/14407).
- Guaranteeing quality, safety and traceability of data and biological samples stored, as well as for those procedures related to the Biobank operation, through good practices and adequate methodologies.
- Complying with the relevant legislation and regulations, with particular attention to the rights of source subjects / donors and obtaining Informed Consents.
- Management of samples and associated data, through the Bio-e-Bank software by VITRO, that presents a high level of safety conditions according to LOPD.
- Registration of pre-testing conditions of samples (International SPREC Code).
- Storage safety: restricted access, continuous temperature record (MySIRIUS), telephone alerts for power cut and increase in freezer temperature, CO2 backups, remote access to alarm management orders, preference line connected to the generator, refrigerated room, etc.

We are members of the **ISCIII Platform of Biobanks and Biomodels**, consisting in a cross-sectional and multidisciplinary unit, with the Scientific Director of the Biobank as manager.



Our Platform project consists of the following agents:

- Ramón y Cajal University Hospital – IRYCIS Biobank, as coordinator and integrating part for all services.
- Members of the Biomarkers and Personalized Approach to Cancer Group (BioPAC).
- Members of the Biomarkers and Therapeutic Targets Group.
- Members of the Surgical Research and Experimental Surgery Group.
- Members of the Anatomical Pathology Hospital Unit

All of them contribute staff with wide experience and the infrastructures required, to be applied to the relevant descriptors:

- Biobank.
- Biomodels – Organoids.
- Biomodels – Animal models (specifically, Patient Derived Xenografts (PDXs)).



## SERVICES

- Release of biobank samples.
- Liquid samples: factoring serum/plasma/blood/urine, etc.)
- Biomodels: To determine and expand PDXs.
- Safekeeping of samples.

## Sample Collection (N=81)

The catalogue can be consulted for information regarding collections by associated condition, number of cases, type of samples, extraction times, processing conditions, inclusion criteria, storage, and active / inactive recruitment status

### I. RENAL CONDITIONS

Renal failure in cardiac surgery with extracorporeal circulation* (43 cases)
Acute renal failure* (31 cases)
Donors with expanded criteria and renal transplant recipients (39 donors and 54 kidney recipients)
Renal transplant recipients (27 cases)
Chronic and acute renal disease (70 cases; 64 chronic and 6 acute)
Kidney glomerular condition* (90 cases)
Predisposition to acute renal failure associated with cardiac surgery* (68 cases)
Acute renal failure associated with HIV (259 cases)
Membranous glomerulonephritis (23 cases)

### II. ONCOLOGICAL CONDITIONS

Tumour Bank of tissue samples included in OCT (2,607 cases)
Pre-treatment and pre-surgery cancer (615 cases)
Assessment of familial or hereditary cancer* (826 cases and healthy subjects). Pre-colonoscopy (early detection of colorectal cancer)* (97 cases)
Colorectal cancer* (22 cases)
Pituitary tumours (70 cases)
Pancreatic cancer (familial and sporadic) and high-risk cases* (425 cases: 26 familial pancreatic cancer, 176 sporadic pancreatic cancer, and 223 high-risk subjects)
Pre-stem cell transplant (299 cases)
Breast cancer (104 cases)
Lung cancer (III) Tumour nodes (475)
Bening nodes(40) and No nodes or control (187)
Renal cell cancer (16 cases)
Gastrointestinal tumours (25 cases)
Breast cancer and associated risk factors (8 cases)
Colorectal adenocarcinoma (149 cases)
Cancer with immunotherapy* (39 cases)
Gynaecological tumours (6 cases)
Cancer of unknown cause (1 case)
Microbiota transplant in advanced lung cancer with immunotherapy (23 cases)
Lung cancer and live-in family members* (33 cases and 25 controls)
Glioblastoma (11 cases), Sarcoma (7 cases)
Thyroid cancer (75 cases), Acute Myeloid Leukemia (38 cases)
Rectal Cancer Multiplatform. Rectal Cancer Stages II-III treated with RT (44 cases)
Advanced non-small cell lung cancer treated with immunotherapy (18 cases). Microbiota in faeces and saliva of lung cancer patients (50 cases)
Bladder urothelial carcinoma (10 cases)
Gastric cancer (4 cases)

### III. METABOLIC CONDITIONS

Bone metabolic diseases* (8 cases)
Type 2 Diabetes mellitus (144 cases)
Obesity (I)* (114 cases)
Obesity (II)* (40 cases and 20 controls)
Obesity. Follow-up for bariatric surgery patients (40 cases)
Hemochromatosis (2,337 cases)

### IV. CARDIOVASCULAR CONDITIONS

Pulmonary thromboembolism (560 cases)
Coronary artery disease (81 cases)
Suspected acute myocardial infarction (13 cases)
Familial cardiopathies and myocardiopathies (365 cases)
Acute myocardial infarction (I) (237 cases)
Acute coronary syndrome in <55-year-old patients* (53 cases and 41 controls)
Chronic heart failure (100 cases)
Intervention on Isolated Tricuspid Regurgitation(147 cases and 51 controls)
Mast Cell Activation in Acute Coronary Syndrome (11 cases)
Heart failure II (16 cases)
Heart failure in very elderly patients (185 cases)
Coronary disease (20 cases)

### V. LIVER CONDITIONS

Chronic Liver Disease (520 cases)
Vascular Liver Disease (181 cases)
Pancreaticobiliary Disease (4 Biliary Stricture cases)

### VI. NEUROLOGICAL CONDITIONS

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

### VII. DERMATOLOGICAL CONDITIONS

Frontal fibrosing alopecia and Folliculitis Decalvans (326 cases of Frontal fibrosing alopecia, 34 cases of Folliculitis decalvans, and 23 family members).
Psoriasis* (120 cases)
Psoriasis and Mediterranean Diet (19 cases and 19 controls)
Alopecia areata totalis or universalis* (95 cases)
Atopic dermatitis* (53 cases and 33 controls)
Microbiota study in dermatological conditions (107 cases)
Intestinal microbiota in Severe alopecia areata (4 cases)

### VIII. MULTIORGAN FAILURE

Multiorgan failure (83 cases)
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IX. INFECTIOUS DISEASES

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

X. RARE DISEASES

Splenomegalies and Thrombocytopenias (9 cases)
Cystic Fibrosis* (41 cases)
Fabry disease (16 cases and 16 controls)
Ataxia/ hereditary spastic paraplegia* (66 cases)
Hereditary Haemorrhagic Telangiectasia* (100 cases)
Giant Cell Arteritis (15 cases and 15 controls)

\*There is availability not only of the minimum information associated to donation and samples, but also of additional information, in at least 80% of cases.

XI. SYSTEMIC AND AUTOIMMUNE CONDITIONS

Systemic and autoimmune conditions (230 cases of rheumatoid arthritis, 41 cases of psoriatic arthritis, 72 cases of systemic lupus erythematosus, 24 cases of idiopathic arthritis, 50 cases of spondyloarthritis, 5 cases of juvenile lupus erythematosus, 4 self-inflammatory cases, 2 cases of systemic sclerosis, 1 case of vasculitis, 1 Interstitial pneumonia with autoimmune features, and 1 inflammatory myopathy).
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XII. CONTROLS

Blood bank donors* (483 cases)
Non-tumour donors * (73 cases)

Collections with Biomodels

ONCOLOGICAL DISEASE PDXs

THORACIC ORIGIN

Lung adenocarcinoma (4 cases)
Lung carcinoma (7 cases)
Sarcoma (7 cases)
Colorectal metastasis (1 case)
Breast metastasis (1 case)

GASTROINTESTINAL ORIGIN

Colorectal adenocarcinoma (12 cases)
Pancreatic adenocarcinoma (11 cases)
Pancreatic cholangiocarcinoma (2 cases)
Pancreatic neuroendocrine tumour (1 case)

ONCOLOGICAL DISEASE ORGANOIDS

GASTROINTESTINAL ORIGIN

Colorectal adenocarcinoma (4 cases)
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## Coordinator

Javier Zamora Romero

## Staff

Alfonso Muriel García

## Contact

91 336 81 03



## REMARKABLE FACTS

- It answers around 550 queries per year, and delivers the following courses: “Introduction to Statistics”, “Multivariate regression models”, “Survival Analysis”, and “Multilevel regression models”; it also coordinates critical reading sessions for medical literature.
- Demonstrated ability of collaboration with other research groups, broad spectrum of co-authorship of its publications, and participation in collaborative research structures promoted by ISCIII (CIBER and RETICS).
- The Associated Cochrane Center of Madrid is located at the Clinical Biostatistics Unit. It is the result of an agreement signed in May 2025 between the Iberoamerican Cochrane Center, IRYCIS, and the Francisco de Vitoria University.



## SERVICES

It offers advice on research methodology and biostatistics. Its consultancy covers from study design aspects to planning, analysis completion, and interpretation of outcomes.



## EQUIPMENT

- The Clinical Biostatistics Unit uses software developed by the Unit members: Meta-DiSc, calculators, macros, PRESTA, etc.
- The Unit also has the following statistical packages: SAS, SPSS, Stata, R, nQuery.

# Lipidomic and Proteomic Characterization



## Coordinator

Diego Gómez-Coronado

## Staff

Óscar Pastor Rojo (Lipidomic)  
Alberto Alcázar (Proteomic)  
Emma Martínez (Proteomic)

Diego Gómez-Coronado (Sterols and Lipoproteins)

## Contact

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91 336 86 84



## SERVICES

**Proteomic:** Testing by MS MALDI-TOF, protein identification, immunoproteomic, peptide quantification, etc.

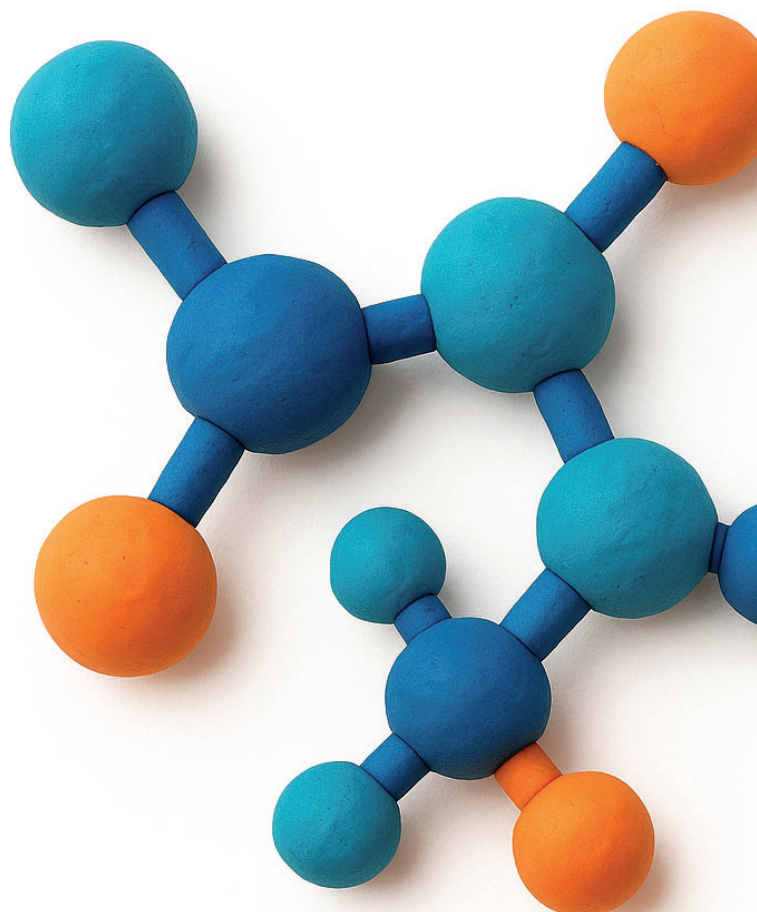
**Sterols and Lipoproteins:** Testing of sterols, cholesterol biosynthesis, etc.

**Lipidomic:** Lipid and sphingolipid base extraction, standard lipidomic, phospholipids, etc.

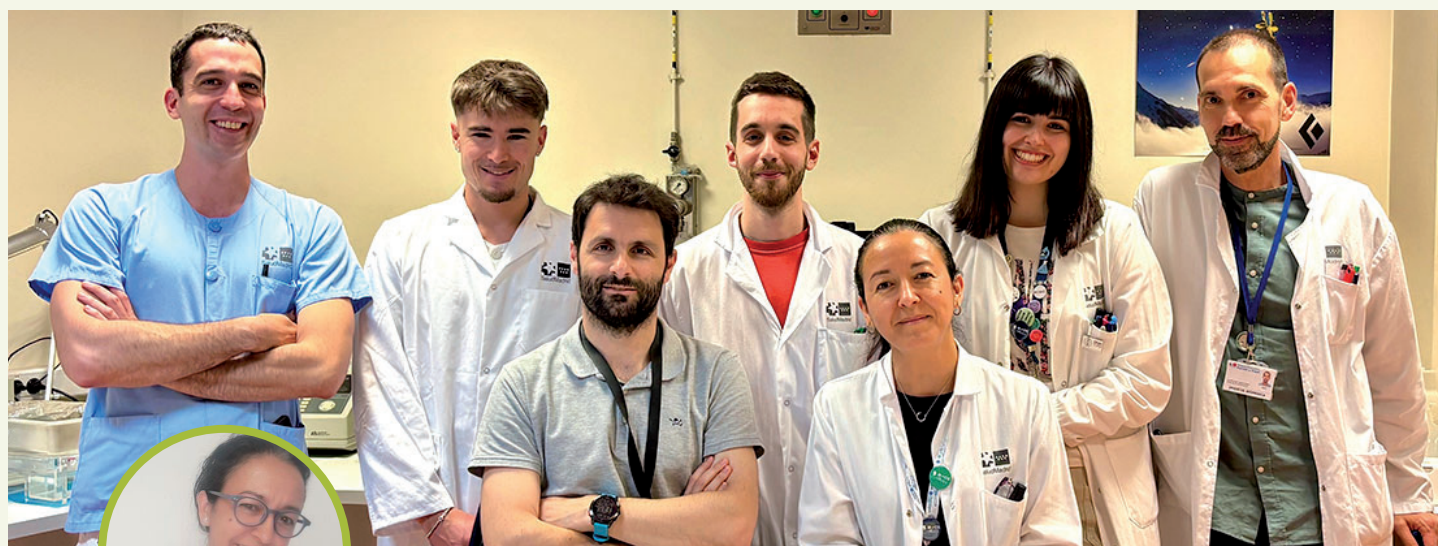


## EQUIPMENT

- MALDI-TOF/TOF UltrafleX- treme Mass Spectrometer.
- Single and bi-dimensional electrophoresis equipments; Multiphor II and Processor Plus IEF equipment.
- Biocompatible (FPLC) and high-resolution (HPLC) chromatography equipments, with automatic refrigerated injector, DAD detection module, fluorescence, visible and electrochemical UV, fraction collector, and thermostat.
- LC-MS system with high quantitative resolution and ESI and APCI sources.
- GC-MS system for gas chromatography and mass spectrometry.
- Ultracentrifuges.
- Tri-Carb 4910 TR Scintillation Counter.







## Coordinator

Leticia Olavarrieta Scappini

## Staff

### TRANSLATIONAL GENOMICS

Leticia Olavarrieta (Manager)  
Laura Rodríguez (TGS. Lab)  
Miguel Aurelio Llorente (TGS. Lab)  
Víctor Manuel de la Cueva (TGS. Lab)

### BIOINFORMATICS

Val Fernández (Manager)

## Contact

uca-gt@irycis.org  
91 336 89 59



## REMARKABLE FACTS

- Collaboration Agreements signed with different technological companies associated with ASEBIO (Spanish Bioindustry Association), and with national and international public and private universities.
- Teachers in courses on Translational Research Techniques, Omics Sciences, and Mass Sequencing Techniques (NGS).
- Quality guarantee for sample storage and processing, maintaining their traceability, follow-up of Standard Operating Procedures (SOPs), Plan for cleaning, maintenance and verification of the lab and equipments.
- Continuous training of the lab staff.
- Main computing cluster with 32 CPU cores and 526Gb of RAM memory.
- 40Tb storage server and broadband internet connection with exclusive optical fibre.
- All IRYCIS PIs can request a free account in the server.
- All accounts of the internal IRYCIS staff include 400 free hours-core of computing per month and 1Tb storage.







## SERVICES

- Extraction of Nucleic Acids (DNA).
- RNA extraction
- Special DNA and RNA extraction.
- Nucleic acids testing.
- Nucleic acids quantification.
- Quantification by Chip Bioanalyzer.
- Digital PCR.
- Real-time (RT) PCR.
- Sanger Sequencing.
- Targeted panels (NGS).
- Metagenomics (NGS).
- Whole Genome Sequencing (NGS).
- Transcriptome-RNASeq (NGS).
- Biomarker identification.
- NGS library preparation + MiSeq run.
- MiSeq run (including cartridge and run reagents)
- MiSeq run (equipment use only).
- NGS library preparation + NextSeq 550 run.
- NextSeq 550 run (including cartridge and run reagents).
- NextSeq 550 run (equipment use only).
- Novaseq 6000 run.
- CGH (Comparative Genomic Hybridization) Arrays.
- MLPA.
- Microsatellite Genotyping.
- Cytogenetics.
- Consultancy.
- Secondary and/or tertiary bioinformatic analysis of raw data.



## EQUIPMENT

### Lab 1 - Preamplification Area.

- Chemagic Magnetic Separation Module I (Chemagic MSM I) (Chemagen, PerkinElmer).
- Nanodrop 2000 Spectrophotometer.
- Agilent 2200 TapeStation System Bioanalyzer.
- Qubit 2.0 Fluorometer.
- LUX Varioskan by ThermoScientific.
- -80°C and -20 °C freezers.
- 4°C refrigerators.
- Systems for temperature control and warning alerts management.
- TRACKER reader for the bidimensional codes of sample storage tubes.
- Web application for sample registration and traceability and for storage space management (Bio-e-bank, VITRO).

### Lab 2 - Post-amplification area

- 2 System 9700 PCRs by AppliedBiosystems.
- VeritiPro 96-Well ThermalCycler by AppliedBiosystems.
- MiSeq Sequencer by Illumina.
- Agilent Bioanalyzer (Bioanalyzer Agilent 2100).
- QuantStudio™ Absolute Q™ Digital PCR System.

### Bioinformatics

- HPC Server for NGS testing.
- GPU Server for AI/ML applications
- Workstations for individual work.
- 3 high-capacity storage servers.



# Clinical Research and Clinical Trials in Early Phases

20



## Coordinator

Mª Ángeles Gálvez Múgica

## Staff

Mónica Aguilar (CT Coordinator)  
José D. San Andrés (Nursing Coordinator)  
Itziar de Pablo (Quality)  
Isabel López (DUE)  
Miriam Sanz (Monitor-Manager)  
2 CT monitors, 2 nurses, 3 TGS Labs.

## Contact

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mariaangeles.galvez@salud.madrid.org  
91 336 92 02  
monica.aguilar@salud.madrid.org



## REMARKABLE FACTS

- Clinical Trials in Early Phases Unit. Certified by the Regional Ministry of Health of the CAM.
- Clinical Research and Clinical Trials Unit (UI-CEC), part of ECRIN (European Clinical Research Infrastructure Network).



## SERVICES

- Clinical Trials in Early Phases Unit (UEC-FT).
- Consulting on clinical trial design and methodology, and observational studies.
- Management of the study and monitoring tasks.
- Medication, samples and complementary tests for clinical trials.
- Drug safety for clinical trials and observational studies.



## EQUIPMENT

- Treatment and follow-up room: drug administration and monitoring of clinical trial participants (7 chairs and 1 bed).
- Medical office with the equipment required for complete examination.
- Area for administrative tasks, and for filing confidential documentation.
- Lab for biological sample processing and filing, with refrigerated centrifuge, and -20° C and -80° C freezers.
- Measures to guarantee the safety of patients and the good development of the study.





## Coordinator

Elisa Conde Moreno

## Staff

Edurne Ramos (TGS. Lab)  
Lorena Crespo (TGS. Lab)  
Sandra Villatoro (TGS. Lab)

## Contact

ucamirnas@gmail.com



## REMARKABLE FACTS

- They have developed a method for diagnosis and prognosis of acute renal failure, protected by two patent families (P200901825 and P2011320232), both with entrance in national phases in eight countries.
- They are developing the use of miR-127 as a new therapeutic agent in renal fibrosis, protected by the EP 16 382 399.0 patent, granted in U.S.A. and Europe.
- They are developing the use of miR-326 as a new therapeutic agent in cancer, protected by the EP22383047.2 patent.
- National Projects:
  - \* DTS22/00101 "Multiplatform for Precision Medicine in Colorectal Cancer (MIRaMut)".
  - \* Project for public-private collaboration by 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€), for the identification and validation of biomarkers for clinical use, particularly miRNAs.
  - \* REMEDI4ALL Project: "Building a Sustainable European innovation platform to enhance the repurposing of medicines for all." (HORIZON-HLTH-2021-DISEASE-04), 25 M€, for repositioning of drugs based on reliable biomarkers.
- Services with a clearly translational nature, with experience in renal conditions, renal preservation, oncology, sepsis, cardiology, etc.



**eatris**

European infrastructure  
for translational medicine

AMEPHARMA







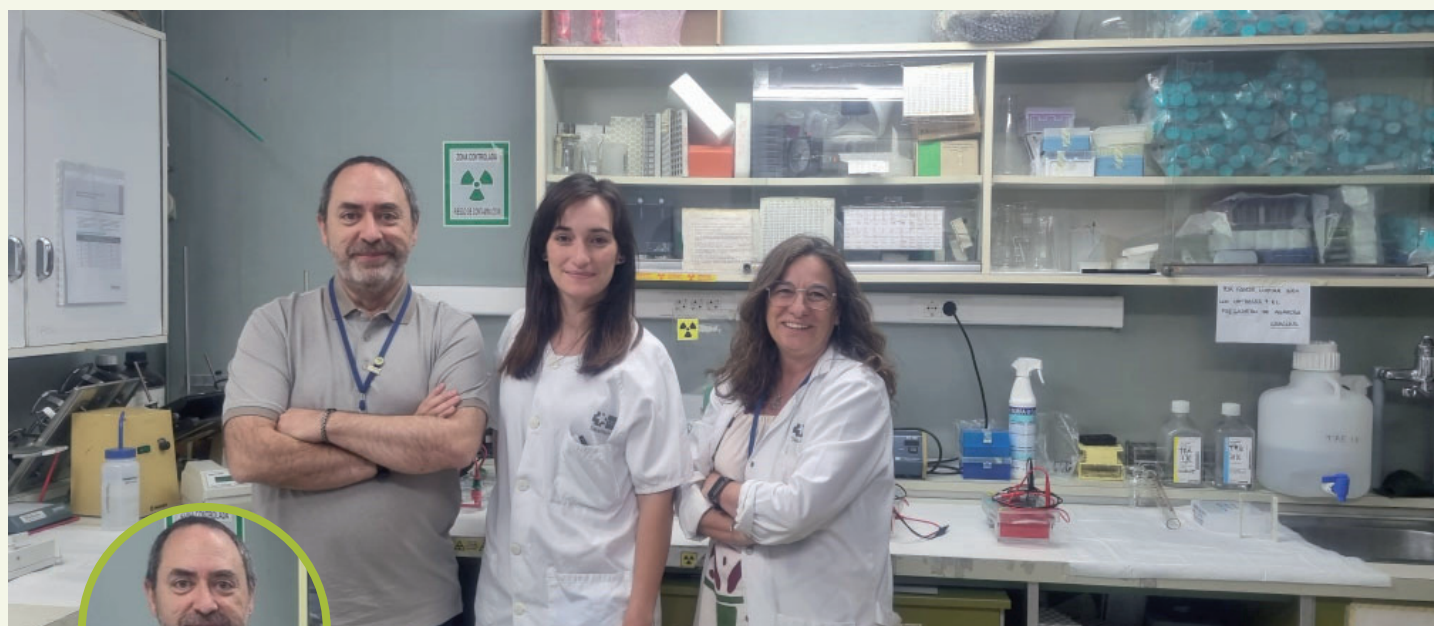
## SERVICES

- RNA extraction and quantification. Extraction of total enriched RNA in small RNAs (tissue, paraffin-embedded tissue, cells, serum, plasma, other biological fluids).
- Array of miRNAs. RNA retro-transcription (in 3 volumes); RNA Spike-in kit. 1 panel array (conf.A + Conf. B, 762 miRNAs). Data analysis through the relevant software.
- miRNAs PCRs. Retro-transcription (Universal cDNA Synthesis Kit, Exiqon) and determination of miRNAs through qRT-PCR (LightCycler 480 SYBR green).
- Genes PCRs. Retro-transcription (Transcriptor First Strand cDNA Synthesis Kit, Roche) and GENES determination by qRT-PCR (LightCycler 480 SYBR green, Roche).
- miRNAs in vitro modulation. Cell culture and transfection through liposomal vehicles of PRE-miR or ANTI-miR or PRE-Neg or ANTI- Neg.
- Cuts of paraffin blocks.
- Location of miRNAs through in situ hybridization.
- Immunohistochemistry.
- Bioanalyzer.



## EQUIPMENT

- Three equipments for qRT-PCR (Lightcycler 480).
- Conventional Thermal Cycler (2720 T h e r m a l Cycler, Applied Biosystems).
- Equipment for in situ hybridization (DAKO).
- Equipment for nucleic acids quantification: Bioanalyzer, NanoDrop, Qubit 4 Fluorometer.
- Microtome and bath for paraffin blocks.
- Spectrophotometer (Multiskan Go, Thermo).
- Thermoblock (ThermoMixer F1.5, Eppendorf).
- Inverted fluorescence microscope with attached camera and computer.
- Cell cultures: P2 laminar flow hoods, regular CO2 incubators, hypoxia incubator, thermostatic bath, inverted light microscope, electroporator, and nitrogen tank.



## Coordinator

Victor M. González Muñoz

## Staff

María Elena Martín  
Marta García (TGS Lab.)  
Mariana Fuentes-Quintana

## Contact

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91 336 81 73



## REMARKABLE FACTS

### PUBLICATIONS

1. Safety and Efficacy of ApTOLL in Patients With Ischemic Stroke Undergoing Endovascular Treatment: A Phase 1/2 Randomized Clinical Trial. *JAMA Neurol.* 2023:e231660. doi: 10.1001/jamaneurol.2023.1660.
2. First-in-human phase I clinical trial of a TLR4-binding DNA aptamer, ApTOLL: Safety and pharmacokinetics in healthy volunteers. *Mol Ther Nucleic Acids.* 2022; 28:124-135. doi: 10.1016/j.omtn.2022.03.005.
3. Selection and characterization of DNA aptamers for highly selective recognition of the major allergen of olive pollen Ole e 1. *Anal Chim Acta.* 2022;1192:339334. doi: 10.1016/j.aca.2021.339334.
4. FPR2 DNA Aptamers for Targeted Therapy of Wound Repair. *J Invest Dermatol.* 2022;142(8):2238-2248.e8. doi: 10.1016/j.jid.2021.12.026.
5. Development of an antigen Enzyme-Linked Aptasorbent Assay (ELASA) for the detection of swine influenza virus in field samples. *Anal Chim Acta.* 2021;1181:338933. doi: 10.1016/j.aca.2021.338933.
6. The Relevance of the SH2 Domain for c-Src Functionality in Triple-Negative Breast Cancer Cells. *Cancers (Basel).* 2021;13(3):462. doi: 10.3390/cancers13030462.
7. Novel DNA Aptamers against CCL21 Protein: Characterization and Biomedical Applications for Targeted Drug Delivery to T Cell-Rich Zones. *Nucleic Acid Ther.* 2018; 28(4):242-251. doi: 10.1089/nat.2017.0689.

### PATENTS

- TLR-4-specific aptamers and their uses. 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 U.S.A. 16/647,368 and Europe 18 734 266.2.
- Aptamers against the hepatitis c virus core protein. EP21382710.8.
- Aptamers and their use in cancer treatment. EP 18 382 888.8 with PCT/EP2019/083547.
- Agonist aptamers of the FPR2 receptor and their uses. P201930524 with PCT/ES2020/070378.



## SERVICES

- Selection of aptamer populations against the target.
- Identification through NGS and structural in silico characterization of aptamers.
- Confirmation of interaction and study of affinity by SPR (4 aptamers).
- Optimization of aptamers.
- In vitro stability: 1. In human plasma, rat and monkey (NHP); 2. Stability against nucleases ( $\lambda$ -exonuclease and DNase I).
- In vitro toxicity: evaluation of the cytotoxicity of aptamers through MTT and LDH quantification,
- Functional studies.
- Technical assistance and technical support.

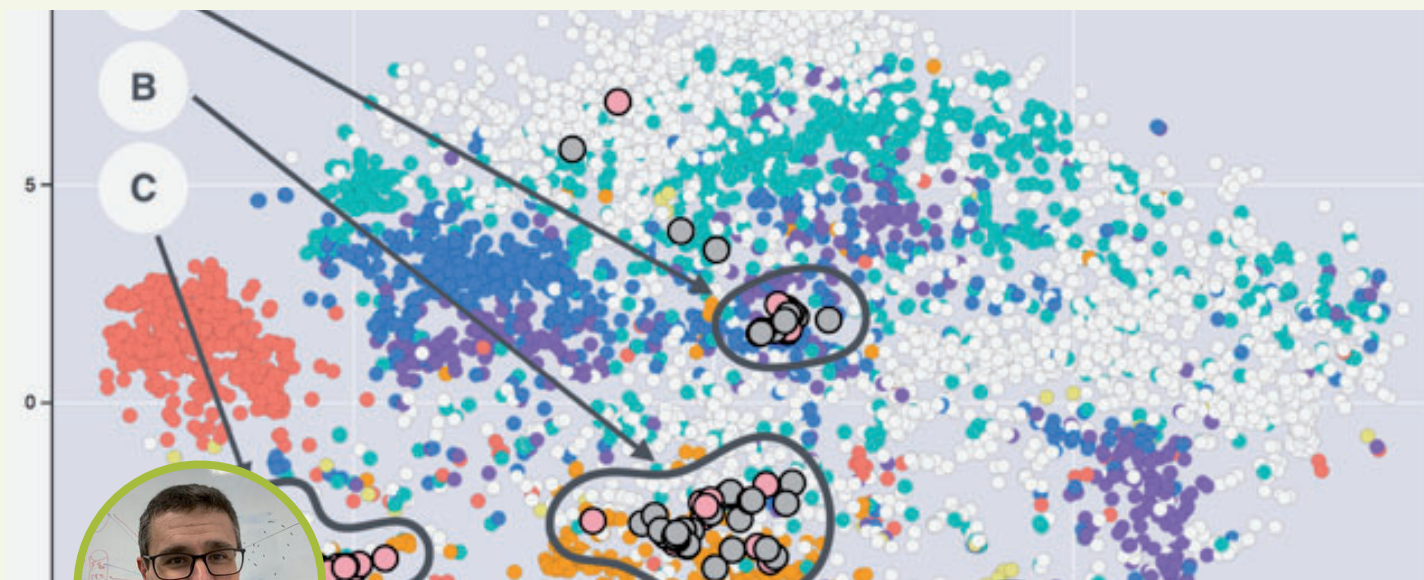


## EQUIPMENT

- IQ5 (BioRad) real-time thermal cyclers.
- StepOnePlus (ThermoFisher) real-time thermal cyclers.
- End-point thermal cyclers (TEKNE).
- Tape Station (Agilent) automatic electrophoresis system.
- AKTA purification system (GE Healthcare LifeSciences).
- Mini- Bis Pro (DNR) image acquisition and documentation system.
- Fastd- igi-pro (Nippon Genetics) image acquisition and documentation system.
- NanoPhotometer (IMPLEN).
- Centrifuges, incubators, thermal blocks, horizontal and vertical electrophoresis systems, cold room







## Coordinator

Miguel Ángel Sicilia

## Staff

Diego Cárdenas  
Samuel Santos  
Sergio Moreno

## Contact

Unit Manager: msicilia@uah.es  
REDCap Services: redcap@irycis.org



## REMARKABLE FACTS

- Experience in research (25/07/2023). Google Scholar data: 7176 citations; H Index =43; i10 Index =176. <https://scholar.google.es/citations?user=mspPvXQAAAAJ&hl=es&oi=ao>.
- Scopus: 8266687800.
- ORCID: <https://orcid.org/0000-0003-3067-4180>.
- University Professor of Computer Languages and Systems in the Department of Computer Sciences, University of Alcalá.



## EQUIPMENT

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

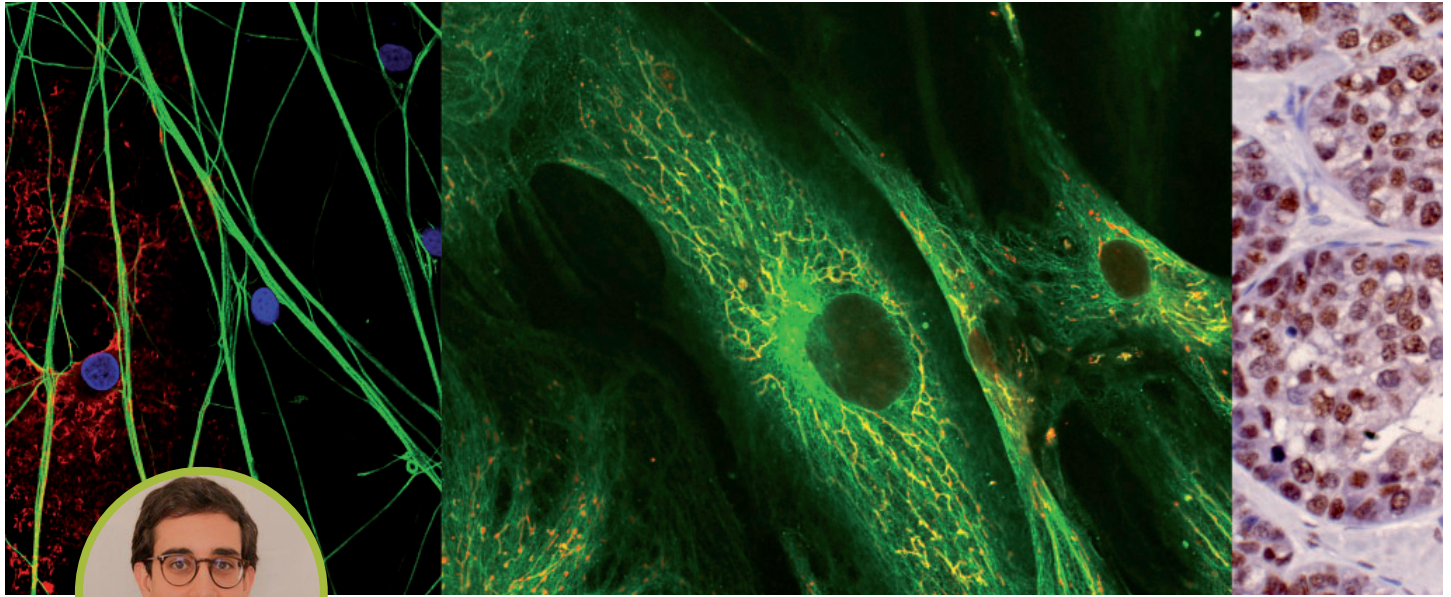


## SERVICES

- Data Science.
- Design and creation of clinical data collection applications standardized ad hoc (REDCap).
- Creation of mobile phone tools for collecting PREMs (Patient Reported Experience Measures) and PROMs (Patient Reported Outcome Measures) standardized ad hoc (MyCap).
- Standardization, alignment and upload of existing databases to the REDCap setting.
- Pre-processing of databases (cleaning, integration, transformation and reduction).
- Development of the usefulness of medical data through visualization techniques and Business Intelligence: creation of interactive dashboards.
- Update of programming and communication between standardized data collection tools and interactive dashboards.
- Data mining in healthcare repositories targeted to the creation of predictive systems.
- Application of tools and methods for pseudonymization and analysis with preservation of health data privacy.
- Process mining: to discover, monitor and improve real processes, by extracting knowledge of available event registers.
- Preparation of Support Systems for Decision based on clinical practice guidelines.
- Teaching capacity.
- Ad hoc training at different levels: Data Mining (Rapid-Miner), interactive dashboards (Power BI, Tableau or Qlik), process mining (ProM or Disco), data analysis (R, Python) and standardized data collection REDCap). Tools for data science and engineering in general

# Microscopy, Histology, and Comparative Pathology

20



## Coordinator

Ignacio Ruz Caracuel

## Staff

Silvia Sacristán (Histology)  
Begoña Cuevas (Microscopy)

## Contact

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



## REMARKABLE FACTS

- Portfolio of services with basic histological techniques (in tissue, paraffins and frozen), immunohistochemistry, immunofluorescence, TUNEL and morphological detection systems for ARNm.
- Optical and fluorescence microscopes, with confocal microscopy, and in vivo sample study through fluorescence.
- Assistance in the interpretation of histological sections, both human and of animal models, by pathologists.
- Acquisition of histological images and assistance for quantification through free software packages (Fiji, QuPath).



## EQUIPMENT

- Criostato CryoStar NX50 for frozen tissue samples.
- Microm Microtome, model HM325, for paraffin-embedded tissue samples.
- ACD HybEZ II hybridization oven.
- Tissue microarrays.
- Extractor Hood
- Nikon ECLIPSE Ti confocal microscope with image acquisition system.



## SERVICES

- To prepare, redo and cut paraffin blocks.
- Preparation and cut of frozen blocks.
- Staining (hematoxylin-eosin, PAS – by tissue section; Masson's trichrome stain – by tissue section).
- Immunofluorescence.
- Immunohistochemistry,
- Aptahistochemistry.
- TUNEL.
- RNAscope.
- Construction of Tissue Microarray (TMA) Micromatrix.
- Confocal Microscopy (Nikon ECLIPSE Ti equipment) and Confocal Microscopy in vivo (Zeiss equipment).
- Tissue section scanning.
- Image analysis and comparative pathology.
- Technical support in Histology.
- Use of Histology facilities.

- Zeiss Axio Observer 7 inverted fluorescence microscope.
- ECLIPSE Ci fluorescence microscope equipped with a Nikon DS-Ri1 camera.
- Motic BA310 optical microscope equipped with a MOTICAMS3 camera.
- Workstation for image analysis. SNIS ELEMENTS software.



# Support for Phase II-IV Clinical Studies and Trials

20



## Coordinator

Sandra Merino Ávila

## Staff

35 clinical trial coordinators  
3 start-up  
2 coordinators of observational studies  
2 data entry  
11 nurses

## Contact

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



## SERVICES

- Stay at the Clinical Trial Unit
- Clinical trial nursing.
- Clinical trial coordination.
- Coordination of observational studies.
- Data entry.
- Start-up.
- Study monitoring.
- Advice on clinical trial procedure and coordination.
- Advice on inspections and/or audits.
- Preparation of biannual and/or annual reports about the unit activity.



## EQUIPMENT

- 2 chairs in preferential extractions for clinical trials, 6 reclining seats, and 1 bed at the Medical Day Hospital.
- Nursing office with the equipment required for complete examination (blood pressure monitor, ECG, stadiometer, scale, thermometer).
- Monitoring room (6-8 monitors).
- 2 rooms for clinical trial coordinators.
- Confidential documentation file and room for nursing kits.
- Lab for biological sample processing and filing, with refrigerated centrifuge, -20° and -80° freezers, refrigerator, catheters.
- Safety measures to guarantee the good development of the study.



## Microarrays

### Coordinator

Javier Martínez-Botas

### Contact

91 336 84 66

### SERVICES

- Sample preparation (extraction, analysis and quantification).
- Microarrays.
- Real-time PCR (LightCycler 480 SYBR Green).

### EQUIPMENT

- Robot for printing microarrays (SpotArray 72, PerkinElmer).
- Reading scanner (ScaArray Express, PerkinElmer).
- Robot for handling liquids (Janus Varispan PerkinElmer).
- Semiautomatic hybridizer (BioMixer™ II, CapitalBio).
- Real-time thermal cycler (LightCycler 480, Roche).
- IT support for microarray analysis.
- Three freezers connected to an alarm system by radio control.

## Marcadores Inmunológicos de Precisión

### Coordinator

Luisa M<sup>a</sup> Villar

### Staff

Mercedes Espiño (Immunology Specialist)  
Noelia Villarrubia (Immunology Specialist)

### Contact

91 336 87 95

luisamaria.villar@salud.madrid.org

### SERVICES

- Determination of oligoclonal IgG bands (OCBs).
- Determination of total oligoclonal IgM bands (OCBs).
- Quantification of biomarkers soluble in serum/plasma through high-sensitivity ELISA (SIMOA).

### EQUIPMENT

- SIMOA Equipment model SR-X by Quanterix.
- Three isoelectrofocusing equipments model Multiphor II by GE-Healthcare.

## Chromatography Services and CNS Markers

### Coordinator

M<sup>a</sup> José Casarejos

### Staff

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

### Contact

91 336 83 84

m.jose.casarejos@hrc.es

### SERVICES

- Amino acid testing (Asp, Glut, Ser, Gln, His, Gly, Thr, Arg, Tau, Ala, Tyr, Gaba, Met, Val, Phe, Ile, Trp, Leu, Lys)
  - o Basic characterization in CSF.
  - o Basic characterization with extraction in plasma.
  - o Basic characterization with extraction in tissue
- Testing of catecholamines and metabolites (NA, DA, DOPAC, 3MT, 5HT, HIAA, HVA, etc.).
  - o Basic characterization in CSF.
  - o Basic characterization with extraction in plasma.
  - o Basic characterization with extraction in tissue
- Determination and testing of amyloid proteins in CSF (ELISA).
  - o AB1-42 peptide analysis.
  - o Phosphorylated TAU protein analysis.
  - o Total TAU protein analysis.
  - o AB1-40 peptide analysis.

### EQUIPMENT

- HPLC systems with detection: fluorometric, UV-VIS and electrochemical.
- Systems for preparation and processing of biologic fluid samples (blood, CSF, exudates, urine, etc.).
- Determination of biomarkers for Alzheimer's disease and other dementias, in fluid and biological tissue samples. Beta amyloid protein, TAU protein, and phosphorylated TAU.

## Single-cell Analysis: Spectral Flow Cytometry

### Coordinator

Eulalia Rodríguez Martín

### Contact

uca-cit@gmail.com

### SERVICES

- Sorting Aurora CS.
- Acquisition of Aurora CS 1 sample.
- 3-laser FACSLyric (12 colours).
- 3-laser FACSCANTO II (8 colours).
- Study design.
- Set up of new experiments.
- Tuning for new fluorochromes.
- Data analysis for conventional and spectral flow cytometry.
- Use of workstation in the FlowJo program (Aurora).
- Use of workstation with the Infinicyt program.
- Study and immunophenotypic screening for mastocytosis in spectral flow cytometer.
- Study and immunophenotypic screening for mastocytosis in spectral flow cytometer.
- Monitoring study for CAR-T cells.
- Separation of CAR-T Cells.
- Technical assistance and technical support.

### EQUIPMENT

- One 3-laser Spectral Flow Cytometer CS Aurora by Cytex (36 colours).
- Two 3-laser FACSLyric (blue, red and purple) with 12 colours.
- One 3-laser FACSCANTO II (blue, red and purple) with 8 colours.

## Cromatografía de gases acoplada a espectrometría de masas

### Coordinator

Rosa del Campo Moreno

### Staff

Ana Moreno

Esther Palacios

### Contact

qcms@irycis.org

rosacampo@yahoo.com

### SERVICES

- Determination of short chain fatty acids.
- Determination of p-cresol.
- Determination of other volatile compounds.
- Sample pre-processing.
- Data analysis.
- Technical assistance and technical support.

### EQUIPMENT

- GC-MS ISQ76A2203001 - ISQ7610-AEI (single quadrupole) equipment by Thermofisher for testing low molecular weight volatile samples.

## Radiological Image Analysis and Process Engineering

### Coordinator

Javier Soto Pérez-Olivares

### Contact

jsotop@salud.madrid.org

91 336 91 44

### Staff

Catalina Nieto

Inés Resina

Raúl Perona

Jaime Moujir

### SERVICES

- Radiological Image Analysis.
- Process engineering.
- Teaching capacity

### EQUIPMENT

- Software for image post-processing.
- Linux server for medical image processing
  - o Python.
  - o FreeSurfer.
  - o FSL (FMRIB Software Library).
  - o MATLAB.
- Web server for developing ad-hoc tools.
- Synapse 3D (Fujifilm).
- IntelliSpace Portal (Philips).
- AW Server (GE).
- syngo.via (Siemens).
- 3D Slicer.
- Python scientific computing stack

## Cell Cultures

**Coordinator**

M<sup>a</sup> Elena Martín Palma

**Staff**

María José Casarejos  
María José Asensio

**Contact**

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

**SERVICES**

- Use of the Cultures Unit.
- Use of the Seahorse equipment.
- Microplasma test.
- Cell defrosting and seeding
- Feasibility, proliferation and/or toxicity experiments.
- Primary cell isolation from tissue (neuronal, rat or mouse glia).
- Technical assistance and technical support.

**EQUIPMENT**

- Two laminar flow cabinets with Type II biological safety (TELSTAR BIOII-A) and one MARS120 biosafety cabinet.
- Six horizontal laminar flow cabinets for cell cultures (TELSTAR AV-30/70).
- Three horizontal laminar flow cabinets for tissue dissection and subsequent implementation of primary cultures (TELSTAR-SAH100).
- Eight double incubators for cell cultures with controlled temperature and CO2 pressure.
- Seahorse XFp (Agi- lent) extracellular flow analyser
- Three surgical microscopes (Carl Zeiss Jena 212T OPM) and one Leica inverted optical microscope.
- Two centrifuges (Eppendorf 5810R) and one Sirena refrigerated centrifuge.
- Olympus Ix70 inverted microscope connected to an epifluorescence unit (Olympus U-RFL-T) with the option to capture and store images (Camera Digital Sight).
- Control Unit (DS-Fi3) camera by Nikon.
- Hettichtz MIKRO microcentrifuges.
- Additional equipment (temperature baths, refrigerated combis, stirrers).



# Priority Areas of IRYCIS

Within IRYCIS, there are 6 priority areas of research, formed by 47 research groups: 34 consolidated groups, 9 established groups and 4 access groups. Each area is coordinated by 2 or 3 Coordinators, with the following primary mission:

- To monitor that the objectives determined for their area are achieved.
- To guarantee communication and collaboration between the different research groups within it.
- To mentor the groups included in the established group, access group, or associated clinical research staff, in order to achieve their progressive integration into the consolidated group level.

## AREA 1

### NEUROSCIENCES, SENSORY ORGANS AND MENTAL HEALTH



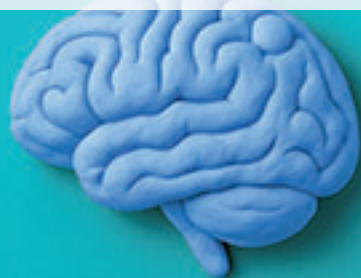
Dr. Alicia Mansilla Aparicio  
Senior UAH-IRYCIS Researcher



Dr. Luisa María Villar Guimerans  
Head of the Immunology Unit



Dr. Manuel Guzmán Pastor.  
Senior UCM-IRYCIS Researcher



## AREA 2

### MICROBIOLOGY, IMMUNOLOGY AND INFECTION



Dr. Rosa del Campo Moreno  
Senior Researcher at the  
Microbiology Unit



Dr. Sergio Serrano Villar  
Specialist at the  
Infectious Diseases Unit



## AREA 3

### CANCER



Dr. Bruno Sainz Anding  
Tenured Scientist at IIBm  
(CSIC-UAM)



Dr. José Valentín García  
Specialist at the Haematology Unit



## AREA 4

### TOOLS FOR ADVANCED MEDICINE



Dr. Elena Martín Palma  
Senior Aptamers Researcher.  
Manager of the scientific-technical  
Cell Cultures Unit



Dr. Gemma Pascual González  
Tenured Professor at the University  
of Alcalá



## AREA 5

### CHRONIC CONDITIONS AND SURGERY RESEARCH



Dr. Federico Soria Gálvez  
Head of the Experimental Surgery  
Unit



Dra. Rosa Martín Mateos  
Specialist at the Gastroenterology  
Unit



D. Martín Fabregate Fuente  
Coordinator of the Support Unit for  
Research – Internal Medicine Unit



## AREA 6

### EPIDEMIOLOGY, PUBLIC HEALTH AND HEALTHCARE



Dr. Ana María Álvarez Díaz  
Head of the Pharmacy Unit



Dr. Alfonso Muriel García  
Biostatistician at the Clinical  
Biostatistics Unit



### Research Groups

Multiple Sclerosis

Neurodegenerative Diseases: Pathogenic Mechanisms

Genetics and Sensorineural Physiopathology

Neurodegenerative Diseases: Therapy Development

Psychiatric Diseases Neuroproteins-Stroke

Ophthalmology

Experimental Dermatology and Cutaneous Biology

Visual Neurophysiology





Neurosciences, Sensory Organs and Mental Health

Funding and Scientific Production during the last five years

ACCUMULATED INCOME  
(private / public projects and clinical trials)

15M€ 

R&D&I PROJECTS  
AND INITIATIVES

379 

PUBLICATIONS

1.072 

PUBLICATIONS  
IN Q1&Q2

71%

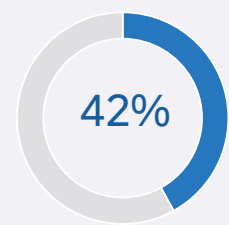
PUBLICATIONS With IRYCIS  
members as leaders

40%

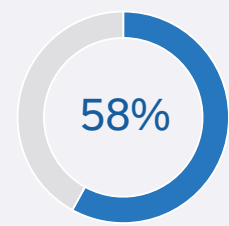
DOCTORAL THESES  
supervised and read

47

BREAKDOWN BY GENDER



Male



Female

List of the five most relevant publications in the annuity

**Ortega MA, Fraile O, García C, Díaz R, López L, Monserrat J, Barrena S, Álvarez MA, Lahera G, Álvarez M.** Understanding immune system dysfunction and its context in mood disorders: psychoneuroimmunoendocrinology and clinical interventions. *Mil Med Res.* 2024;11(1): 80 - 80. DOI:10.1186/s40779-024-00577-w.

**Monreal E, Fernández JI, Álvarez R, Sainz de la Maza S, García MI, Llufríu S, Casanova B, Comabella M, Martínez S, Galimberti D, Ramió L, Martínez ML, Aladro Y, Ayuso L, Martínez JE, Brieva L, Villarrubia N, Eichau S, Zamora J, Rodero A, Espiño M, Blanco Y, Saiz A, Montalbán X, Tintoré M, Domínguez MI, Cuello JP, Romero L, Ghezzi L, Pilo de la Fuente B, Pérez F, Quiroga A, Rubio L, Rodríguez F, Chico JL, Sainz R, Masjuan J, Costa L, Villar LM.** Serum biomarkers at disease onset for personalized therapy in multiple sclerosis. *Brain.* 2024;147(12): 4084 - 4093. DOI:10.1093/brain/awae260.

**Nicolás J, Mascaraque M, Gallego M, Barahona A, Abarca E, Carrasco E, Gilaberte Y, González S, Juarranz Á.** The m-TORC1 inhibitor Sirolimus increases the effectiveness of Photodynamic therapy in the treatment of cutaneous Squamous Cell Carcinoma, impairing NRF2 antioxidant signaling. *Int. J. Biol. Sci.* 2024;20(11): 4238 - 4257. DOI:10.7150/ijbs.94883.

**Gonzalo C, Santos I, García L, Martín R, Rodríguez C, Wittwer MB, Dzygiel P, Grether U, de Lago E, Fernández J.** Involvement of CB(1) and CB(2) receptors in neuroprotective effects of cannabinoids in experimental TDP-43 related frontotemporal dementia using male mice. *Biomed Pharmacother.* 2024;174: 116473 - 116473. DOI:10.1016/j.biopha.2024.116473.

**Costas C, Hermoso A, Moreno E, Montero C, Álvaro A, Maroto IB, Sánchez A, Díez R, Blázquez C, Morales P, Canela EI, Casadó V, Urigüen L, Perea G, Bellocchio L, Rodríguez I, Guzmán M.** The CB(1) receptor interacts with cereblon and drives cereblon deficiency-associated memory shortfalls. *EMBO Mol Med.* 2024;16(4): 755 - 783. DOI:10.1038/s44321-024-00054-w.

# Area 1

## Neurosciences, Sensory Organs and Mental Health

### 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  
Enric Monreal Laguillo

##### Collaborating Staff

Alexander Rodero Romero  
Ernesto Roldán Santiago  
Eulalia Rodríguez Martín  
Fernando Rodríguez Jorge  
José Ignacio Fernández Velasco  
José Luis Veiga González  
Juan Luis Chico García

Lucienne Costa-Frossard França  
María Eugenia Martín Villasevil  
Mercedes Espiño Martínez  
Noelia Villarrubia Migallón  
Paula Batres Faba  
Raquel Sainz Amo  
Roberto Pariente Rodríguez  
Susana Sainz de la Maza Cantero



#### LOCATION

Ramón y Cajal University Hospital  
Laboratory:  
Immunology Unit – 1st Floor Left  
Clinical Unit:  
Neurology Unit – 2nd Floor Centre

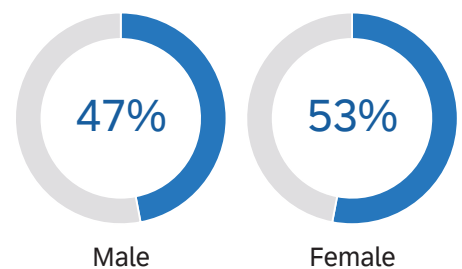


#### KEY WORDS

Multiple Sclerosis (MS), biomarkers,  
immunological mechanisms,  
B-lymphocytes, antibodies



#### BREAKDOWN BY GENDER



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Multiple Sclerosis Group

#### NETWORKS AND ALLIANCES

- REEM-Spanish Network for Multiple Sclerosis (Ministry of Science and Innovation)
- RICORS-Inflammatory Diseases Network (ISCIII)
- Bio-MS-European Group for Biomarkers in MS
- European Medicines Agency (EMA)
- Spanish Society of Neurology (SEN)
- Spanish Agency of Medicines and Medical Devices (AEMPS)
- Madrid Neurology Association
- Institut d'Investigació Biomèdica, Girona. Dr. Josep Trueta (IDIBGI)
- Regional Ministry of Health of the Community of Madrid
- Group for Demyelinating Diseases of the Madrid Neurology Association (AMN)
- Neuroinflammation Group of CIBERNED
- Spanish Society of Immunology
- American Academy of Neurology
- 3TR European Project



#### LINES

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

#### STRATEGIC OBJECTIVES

- To look into the physiopathological mechanisms of MS with the objective to identify new therapeutic targets for the disease and contribute to the personalized treatment of patients.
- To study the mechanisms associated with progressive forms of the disease, for which there is only one treatment currently approved.
- To identify immunological factors for an early prediction of progression risk in MS, in order to determine a personalised therapy for this disease.
- To evaluate biomarkers for response to treatment, that identify those patients at risk of severe secondary effects.
- To study environmental factors that play a role in the course of the disease, in order to see if any modification of them could have a beneficial effect on patients.

#### ACTIVITY INDICATORS 2024

- 1 competitive European project - IMI 3TR
- 4 projects / competitive national public networks: ISCIII, MICINN
- 13 private projects led
- 33 clinical trials led
- 2 competitive Human Resources contracts
- 36 publications
- Impact Factor: 166.60
- Publications in Q1: 21 (58%)
- Publications in D1: 6 (17%)
- 1 doctoral thesis supervised and read
- 1 award
- Evaluators of national public agencies: 1 PI
- Members of editorial boards: 1 PI
- 1 patent in Spain (P202390028) based on the European validation for EP20382988, that protects biomarkers predicting autoimmunity for treatment with alemtuzumab in multiple sclerosis patients.
- 1 application for European patent (EP23383037.1) for biomarkers predicting response to treatment with ocrelizumab in patients with multiple sclerosis, with PCT/ EP2024/078404.
- 1 intellectual property registration (CC-BY-ND-NC with reference 2306134577905), to protect a monitoring app for multiple sclerosis patients.
- 1 panel of biomarkers for ultrasensitive detection of biomarkers, protected by know-how and currently being used.
- 1 document on new diagnostic criteria and 1 article on new biomarkers.
- 4 visitors received and 2.1-month stays
  - UPM
  - Virgen de la Arrixaca Hospital
  - Santiago de Compostela Hospital



Multiple Sclerosis Group

MAJOR MILESTONES

- 1. Implementation of the use in clinical practice of the ideal combination of serum biomarkers to predict the progression of disability, associated with or independent of flares in multiple sclerosis (MS) (Brain; PMID: 39101570).
- 2. Determination of the normal values of MS biomarkers in order to study the modification of high-efficacy drugs currently approved for MS. Demonstration of their value to predict optimal/suboptimal response to said drugs (4 articles (Q1): PMID: 39063050, 39224593, 39606235, 39684862).
- 3. Coordination of the multiple sclerosis area in the 3TR (IMI) European project, and one objective in RICORS on inflammation (translation of biomarkers into clinical practice). Concession of two competitive public projects with leadership by young researchers of the group: AES24 (PI24/O1018) and one EIT-Health European project.
- 4. The group leads the Scientific-Technical Unit of IRICIS: "Precision immunological markers", where we provide service of detection by biomarkers to research staff, and participate in research projects with different pharmaceutical companies, which has represented an income of over 300,000 €.
- 5. Development of the mobile application for patients, which allows to monitor in a passive and remote manner the risk of disability progression (PMID: 38598952, 39246042). Concession of the EMCARE European Project within the EIT-Health Program (Deep Tech Venture Builder programme call 2025), which will allow to speed up its development and create a spin-off for its exploitation.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	36	166,62	5,04	32	89	6	17
	159	900,48	5,80	126	79	25	16

Neurodegenerative Diseases: Pathogenic Mechanisms Group



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

Collaborating Staff

Alba Hermoso López  
Alicia Álvaro Blázquez  
Aníbal Sánchez de La Torre

Carlos Costas Insúa  
Cristina Blázquez Ortiz  
Eva Resel Mariné  
Irene Maroto Martínez  
Samuel Simón Sánchez  
Sara Ezquerro Herce  
Tania Aguado Sánchez  
Tânia Gavaldá Vives



LOCATION

Complutense University of Madrid  
School of Biological Sciences  
Department of Biochemistry and  
Molecular Biology  
C/ José Antonio Novais, 12  
28040 Madrid

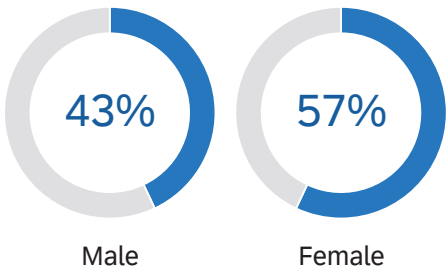


KEY WORDS

neurodegeneration, neurogenesis,  
neurorepair, neuropharmacology,  
cannabinoid



BREAKDOWN BY GENDER



Neurosciences, Sensory Organs and Mental Health

Neurodegenerative Diseases: Pathogenic Mechanisms Group

NETWORKS AND ALLIANCES

- CIBER for Neurodegenerative Diseases
- IUIIN – University Institute of Neurochemistry Research



ACTIVITY INDICATORS 2024

- 7 competitive public projects led: ISCIII, MICINN, CIBERNED
- 1 competitive private project and 1 non-competitive private project led
- 5 competitive Human Resources contracts
- 5 publications
- IF: 30,80
- Publications in Q1: 5 (100%)
- Publications in D1: 2 (40%)
- Project evaluators: 2 PIs
- Editorial board members: 2 PIs
- 24-month stays in foreign and national centres:
  - EMBL - European Molecular Biology Laboratory-Heldelberg
  - Severo Ochoa Molecular Biology Centre
- 1 visitor received and 9-month stay:
  - National Autonomous University of Mexico (UNAM)

STRATEGIC OBJECTIVES

The overall research objective in our group is the study of the molecular mechanisms through which cannabinoid receptors act on the brain, as well as the potential validity of said receptors as therapeutic targets in the areas of neurodegeneration, neurorepair and neuro-oncology. Our work is allowing to characterize new mechanisms and actions and effects mediated by cannabinoid receptors, and to suggest new physiopathological consequences derived of them.

LINES

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

MAJOR MILESTONES

1. **Costas C**, Hermoso A, Moreno E, Montero C, **Álvaro A**, **Maroto IB**, Sánchez A, Díez R, **Blázquez C**, Morales P, Canela EI, Casadó V, Urigüen L, Perea G, Bellocchio L, Rodríguez I, **Guzmán M**. The CB(1) receptor interacts with cereblon and drives cereblon deficiency-associated memory shortfalls. EMBO Mol Med. 2024;16(4): 755 - 783. DOI:10.1038/s44321-024-00054-w.
2. **Maroto IB**, **Costas C**, Montero C, **Hermoso A**, Lebouc M, Bajo R, **Álvaro A**, **Blázquez C**, Cannich A, Marsicano G, Martín R, Baufreton J, Rodríguez I, Bellocchio L, **Guzmán M**. GAP43 Located on Corticostriatal Terminals Restrains Novelty-Induced Hyperactivity in Mice. J. Neurosci. 2024;44(39): e0701242024. DOI:10.1523/JNEUROSCI.0701-24.2024.
3. **Sánchez de la Torre A**, **Ezquerro S**, **Huerga A**, Sánchez E, Chara JC, Matute C, Monory K, Mato S, Lutz B, **Guzmán M**, **Aguado T**, **Palazuelos J**. CB(1) receptors in NG2 cells mediate cannabinoid-evoked functional myelin regeneration. PROG NEUROBIOL. 2024;243: 102683 - 102683. DOI:10.1016/j.pneurobio.2024.102683.
4. Tundidor I, Seijo M, Blasco S, Rubert M, Moreno G, Bindila L, de la Rosa RF, **Guzmán M**, Sánchez C, Pérez E. Fatty acid amide hydrolase drives adult mammary gland development by promoting luminal cell differentiation. Cell Death Discov. 2024;10(1): 12 - 12. DOI:10.1038/s41420-023-01788-1.
5. Quintero JM, Díaz LE, **Galve I**, Bustos RH, Leon MX, Beltrán S, Dodd S. The endocannabinoid system as a therapeutic target in neuropathic pain: a review. Expert Opin. Ther. Targets. 2024;28(9): 739 - 755. DOI:10.1080/14728222.2024.2407824.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	5	30,80	6,16	5	100	2	40
	30	285,31	8,52	29	97	15	50





GROUP COMPOSITION

Head

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Principal Investigators

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Collaborating Staff

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Concepción Villalón Villarroel  
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Lucía Soletto Esteban  
Manuela Villamar López

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Patricia Rodríguez Solana  
Sandra Pérez Rial  
Sergio Fernández Peñalver  
Verónica Barca Tierno  
Yolanda Martín Santo Domingo



LOCATION

Ramón y Cajal University Hospital  
Genetics Unit  
Outpatient consultations building. Floor 0

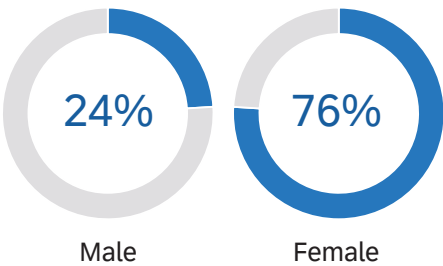


KEY WORDS

rare diseases, genetic disorder, massive sequencing, CGH microarrays, functional clinical trials, transgenic mice, genomics



BREAKDOWN BY GENDER



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Genetics and Sensorineural Pathophysiology Group

#### NETWORKS AND ALLIANCES

- CIBER for Rare diseases
- ITEMAS-Network for Innovation in Medical and Healthcare Technologies
- EATRIS NETWORK -Panel of experts in rare diseases.
- CLINGEN Consortium
- Orphanet Spain
- Genomic Systems
- Decibel Therapeutics
- IMPaCT – Infrastructure of Precision Medicine associated with Science and Technology
- Personalized Medicine Committee (MEDPER of AEGH)



#### LINES

- Spinal muscular atrophy
- Genetic bases of tuberous sclerosis.
- Genetic-molecular bases of Chari Malformation
- Hereditary bases of glaucoma and conditions of the anterior segment of the eye.
- Hereditary hearing loss (syndromic and non-syndromic)
- Lysosomal storage conditions.
- Autoinflammatory syndromes
- Primary immunodeficiencies associated with the TCR/CD3 complex and defects in DNA repair.
- microRNA cure: Modulation of microRNAs to eliminate the latency reservoirs in patients with HIV infection.
- Type 1 and 2 Neurofibromatosis, and neuro-cardio-facio-cutaneous syndromes.

#### STRATEGIC OBJECTIVES

- Identification of new genes associated with hereditary condition in hearing loss, conditions of the anterior segment of the eye, autoinflammatory syndromes, and other rare diseases.
- Conducting functional clinical trials, and generating cell and murine models for the study of associated pathogenesis mechanisms.
- Development, validation and transfer to the market of diagnostic tools based on massive sequencing and microarrays.
- Design of guidelines for the group of rare diseases researched

#### ACTIVITY INDICATORS 2024

- 8 competitive national public projects: ISCIII, MINECO/MICINN, CIBERER
- 3 private projects led
- 1 competitive Human Resources contract
- 11 publications
- IF: 41.10
- Publications in Q1: 6 (55%)
- Publications in D1: 2 (18%)
- Evaluators for scientific projects in national institutions: 5 investigators
- Members of editorial boards: 2 PIs
- Various panels developed at IRYCIS for genetic diagnosis currently used at HURYC
- 1 ongoing study on genetic therapy in hearing loss (Decibel Therapeutics)
- 3 actions with impact on society: conferences, courses, and news in the press
- 3 visitors received and 2.1 months of stay:
  - CIBER

MAJOR MILESTONES

- 1. Pharmacogenetic node of SERMAS to provide coverage to Hospitals in Alcorcón, El Escorial and Móstoles.
- 2. Deputy Chairmanship of the Spanish Association of Human Genetics (Dr. Miguel Ángel Moreno).
- 3. Participation in the functional group by SERMAS in the UNICAS NETWORK providing care to children and adolescents with complex minority diseases.
- 4. Participation in the standardization group of Project SiGenES, which will allow a higher interoperability of genomic data between centres and autonomous communities, positioning it as a key node in the development of Precision Medicine in the National Health System.
- 5. Concession as CO-PI of the CRINGENES Project for neonatal genomic screening, which allows to expand and complement the current biochemical screening, including those diseases without any current biochemical detection screening, but with treatment options already available.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	6	12,89	3,22	3	50	0	0
2021	9	48,57	6,94	7	78	3	33
2022	8	50,04	6,26	7	88	0	0
2023	9	60,90	8,70	7	78	2	22
2024	11	41,10	3,74	10	91	2	18
	43	213,50	5,77	34	77	7	15



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases: Therapy Development Group



#### GROUP COMPOSITION

##### Head

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##### Collaborating Staff

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Carmen Aurora Rodríguez Cueto

Inés Hernández Fisac  
José Antonio Guimaré Ortiz  
María Concepción García García  
María del Carmen Nogales Valenciano  
María Sagrario Gómez Ruiz  
María Luz Hernández Gálvez  
Marta Gómez Almería  
Raquel Martín Baquero  
Santiago Rodríguez Carreiro  
Valentina Satta  
Yolanda García Movellán



#### LOCATION

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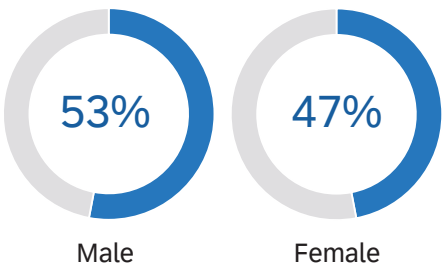


#### KEY WORDS

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



#### BREAKDOWN BY GENDER



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neurodegenerative Diseases: Therapy Development Group

#### NETWORKS AND ALLIANCES

- CIBER for Neurodegenerative Diseases
- IUIN – University Institute of Neurochemical Research
- Moncloa Campus (UCM/UPM)
- Ankar Pharma SLU
- VivaCell Biotechnology Spain
- Oils4Cure



#### LINES

- Relation of the endocannabinoid system with the pathogenesis and treatment of various neurodegenerative conditions.
- Identification of targets in this system with potential neuroprotective action, and development of new selective molecules for these targets.
- Application to cell models and animals of different neurodegenerative diseases.
- Participation in clinical trials with cannabinoid drugs.

#### STRATEGIC OBJECTIVES

The research activity of the group is focused on the study of those changes occurring in elements of the endocannabinoid system in different neurodegenerative conditions (Parkinson's diseases, lateral amyotrophic sclerosis, frontotemporal dementia and spinocerebellar ataxias), and most recently, in refractory epilepsy in children (Davet's syndrome), using both experimental models (cellular or in vivo) and samples from patients. We intend to identify targets in this system, that can be used for neuroprotective treatments, and to study the molecular and/or cell mechanisms through which they could have this type of effect. Based on this, we intend to evaluate the neuroprotective effect of different types of cannabinoids, preferably antioxidant cannabinoids, CB1/CB2 agonists, and cannabinoids with PPAR activity, in experimental models of these diseases. We are also working in the design and biological evaluation of new types of cannabinoid molecules with selectivity for those targets with neuroprotective potential. The final objective is the participation on clinical studies derived of this preclinical experimentation, contributing with the analysis of biochemical markers in samples from patients.

#### ACTIVITY INDICATORS 2024

- 10 competitive projects led: ISCIII, MICINN, UCM
- 3 private projects led
- 10 competitive Human Resources contracts
- 10 publications
- IF: 47.70
- Publications in Q1: 7 (70%)
- Publications in D1: 3 (30%)
- 1 doctoral thesis supervised and read
- 8 acknowledgements to members of the group
- Evaluators in national and European institutions: 4 PIs
- Members of editorial boards: 2 PIs
- One patent (GB201912244) titled: "Use of cannabinoids in the treatment of dyskinesia associated with Parkinson's disease" with PCT/GB2020/052039, extended in three areas
- 13 visitors received and 58 months of stay:
  - Complutense University of Madrid
  - National University del Litoral (UNL). Santa Fé. Argentina
  - Vrije Universiteit Brussels. Belgium
  - Technical School of Specialized Education
- 4 months of stay in foreign centres:
  - Department of Veterinary Medical Sciences (Anatomy Service), University of Bologna. Bologna (Italy)
  - University of Genoa, Department of Pharmacy (DIFAR) Genoa (Italy)

MAJOR MILESTONES

1. **Gonzalo C, Santos I, García L, Martín R, Rodríguez C,** Wittwer MB, Dzygiel P, Grether U, de **Lago E, Fernández J.** Involvement of CB(1) and CB(2) receptors in neuroprotective effects of cannabinoids in experimental TDP-43 related frontotemporal dementia using male mice. *Biomed Pharmacother.* 2024;174: 116473 - 116473. DOI:10.1016/j.biopha.2024.116473. E8.

2. **Burgaz S, Navarro E, Rodríguez S,** Navarrete C, Garrido M, Lastres I, Chocarro J, Lanciego JL, Muñoz E, **Fernández J.** Investigation in the cannabigerol derivative VCE-003.2 as a disease-modifying agent in a mouse model of experimental synucleinopathy.

3. Silva I, **Martín R,** Berrojo A, **Rodríguez C, Fernández J, De Lago E,** Lastres I. Beneficial Effect of Dimethyl Fumarate Drug Repositioning in a Mouse Model of TDP-43-Dependent Frontotemporal Dementia. *Antioxidants (Basel).* 2024;13(9): 1072. DOI:10.3390/ant.

4. Aebi J, Atz K, Ametamey SM, Benz J, Blaising J, Butini S, Campiani G, Carreira EM, Collin L, **de Lago E,** Gazzzi T, Gertsch J, Gobbi L, Guba W, **Fernández J,** Fingerle J, Haider A, He Y, Heitman LH, Honer M, Hunziker D, Kuhn B, Maccarrone M, Märki HP, Martin RE, Mohr P, Mu L, Nazaré M, Nippa DF, Oddi S, O'Hara F, Pacher P, Romero J, Röver S, Rufer AC, Schibli R, Schneider G, Stepan AF, Sykes DA, Ullmer C, Van der Stelt M, Veprintsev DB, Wittwer MB, Grether U. Enhancing Drug Discovery and Development through the Integration of Medicinal Chemistry, Chemical Biology, and Academia-Industry Partnerships: Insights from Roche's Endocannabinoid System Projects. *Chimia (Aarau).* 2024;78(7-8): 499 - 512. DOI:10.2533/chimia.2024.499.

5. Choya C, **Navarro E,** Ríos CL, López MG, Egea J, Hernansanz P, Martínez A. The mitochondrial Na(+)/Ca(2+) exchanger NCLX is implied in the activation of hypoxia-inducible factors. *Redox Biol.* 2024;77: 103364 - 103364. DOI:10.1016/j.redox.2024.103364.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	10	47,70	5,96	7	70	3	30
	38	202,89	5,70	33	87	8	21



# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Psychiatric Diseases Group



#### GROUP COMPOSITION

**Head**  
Ángela Ibáñez Cuadrado  
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**Principal Investigators**  
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**Collaborating Staff**  
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Cecilio Álamo González  
Enriqueta Ochoa Mangado  
Jerónimo Saiz Ruiz (Asesor Senior)  
Sandra García Molina



#### LOCATION

Ramón y Cajal University Hospital  
Psychiatry Unit, 1st Floor – Right  
University of Alcalá: School of Medicine

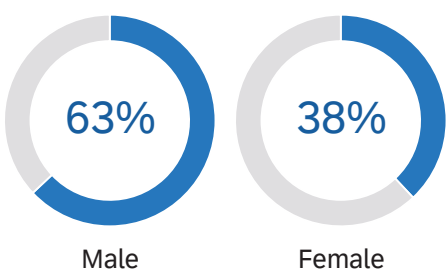


#### KEY WORDS

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



#### BREAKDOWN BY GENDER



NETWORKS AND ALLIANCES

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



LINES

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

STRATEGIC OBJECTIVES

The Psychiatric Diseases Group is a multidisciplinary group including researchers in different areas (Psychiatry, Psychology, Pharmacology), with the objective to develop clinical and biological research programs and programs of services, about the etiopathogenesis and treatment of mental disorders, allowing to implement new clinical interventions in mental health, as well as understanding the mechanisms underlying different mental disorders, which will enable the development of new intervention strategies.

ACTIVITY INDICATORS 2024

- 9 competitive public projects: EU, ISCIII, CAM, Ministry of Health, Ministry of Social Rights, Consumption and Agenda 2030, CIBER
- 2 competitive private projects led
- 18 clinical studies
- 15 publications
- IF: 64.70
- Publications in Q1: 7 (47 %)
- Publications in D1: 3 (20 %)
- 1 doctoral thesis supervised and read
- Evaluators of projects by national institutions: 3 PIs
- Members of editorial boards; 5 group members
- 3 actions with impact on society

MAJOR MILESTONES

1. The research line on first psychotic episodes continues active since the start of the group, with projects AGES-CM 3 (S2022/BMD-7216) within the Support Program for R&D in Biomedicine of the CAM, and ISCIII projects SchizOMICS (ICI21/00089) of the Independent Clinical Research Projects call, and FARMAPRED-PEP (PMP21/00085) of the Personalized Medicine Projects call.
2. There is an ongoing research line on impulsive-compulsive disorders and gambling disorder, through the third consecutive project of the AES call by ISCIII (PI22/01183), and the SUBV23/00023 project of the Ministry of Consumer Affairs, that funds the contract of a female researcher psychologist.
3. Ortega MA, Fraile O, García C, Díaz R, López L, Monserrat J, Barrena S, Álvarez MA, Lahera G, Álvarez M. Understanding immune system dysfunction and its context in mood disorders: psychoneuroimmunoenocrinology and clinical interventions. *Mil Med Res.* 2024;11(1): 80 - 80. DOI:10.1186/s40779-024-00577-w.
4. Article on bipolar disorder: Serra M, Clougher D, Solé B, Sánchez J, González A, Jiménez E, Amann BL, Balanzá V, Tabarés R, Arango C, Accardo V, García MP, Ibáñez Á, Crespo JM, Ayuso JL, Amoretti S, Torrent C, Martínez A, Vieta E, CIBERSAM Functional Remediation G. The impact of sex in the effectiveness of functional remediation in bipolar disorder. *Acta Psychiatr Scand.* 2024;150(6): 543 - 561. DOI:10.1111/acps.13748.
5. Publication on first psychotic episodes: Llorca V, Madero S, Amoretti S, Cuesta MJ, Moreno C, González A, Bergé D, Rodríguez R, Roldán A, García MÁ, Ibáñez A, Usall J, Contreras F, Mezquida G, García C, Berrocoso E, Bernardo M, Bioque M, 2EPs G. Inflammatory blood cells and ratios at remission for psychosis relapse prediction: A three-year follow- up of a cohort of first episodes of schizophrenia. *Schizophr Res.* 2024;267: 24 - 31. DOI:10.1016/j.schres.2024.03.011.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

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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
2024	15	64,70	4,31	13	87	3	20
	111	450,10	4,12	85	77	11	10



21

Area 1

Neurosciences, Sensory Organs and Mental Health

Neuroproteins-Stroke Group



GROUP COMPOSITION

<b>Head</b> Alberto Alcázar González Biochemical Researcher alberto.alcazar@hrc.es	<b>Collaborating Staff</b> Antonio Cruz Culebras Alejandro Escobar Peso Alicia de Felipe Mimbrera Emma Martínez Alonso Ignacio Regidor Bailly-Bailliere Lorena Peracho Benito María Consuelo Matute Lozano Marcel Roca Sanz	Marta del Álamo de Pedro Mercedes Gómez-Calcerrada Iniesta Rocío Vera Lechuga Sebastián García Madrona
<b>Principal Investigators</b> Alberto Alcázar González Jaime Masjuan Vallejo Jesús Miguel Hernández Guijo		



LOCATION

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Neuroproteins and Ischemia Laboratory,  
1st Floor – Right  
Ramón y Cajal Hospital  
Department of Pharmacology,  
School of Medicine, UAM

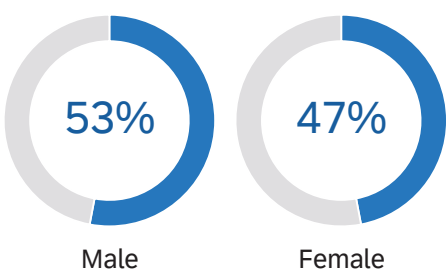


KEY WORDS

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



BREAKDOWN BY GENDER





# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Neuroproteins-Stroke Group

#### NETWORKS AND ALLIANCES

- GEEC – Study Group for Cerebrovascular Conditions
- Madrid Stroke Network Data
- RICORS-Ictus, Network for Cerebrovascular Conditions (ISCIII)
- MINA-CM, Madrid Innovative Neurotech Alliance



**RICORS - ICTUS**



#### STRATEGIC OBJECTIVES

- To advance in the knowledge of cerebral ischemic conditions.
- To develop pharmacological strategies with therapeutic potential, in order to improve functional recovery after ischemic stroke.
- Treatment for stroke in the acute stage

#### LINES

##### Clinical Research Lines:

- Secondary prevention in stroke.
- Reperfusion treatments in cerebral infarction. Use of neuroprotective drugs.
- Unusual causes for stroke. Carotid Web.
- Recurrent cardioembolic stroke. New indications for atrial appendage closure. Carotid filters.
- Coagulation Factor IX inhibitors in non-cardioembolic stroke.
- Analysis of thrombi extracted by mechanical thrombectomy.

##### Experimental research lines:

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

#### ACTIVITY INDICATORS 2024

- 5 competitive national public projects: ISCIII, MINECO, CAM, MICINN
- 4 private projects led
- 11 clinical trials led
- 2 competitive Human Resources contracts
- 19 publications
- IF: 104.50
- Publications in Q1: 16 (84%)
- Publications in D1: 7 (37%)
- Evaluation of public agencies: 3 PIs
- Members of editorial boards: 2 PIs
- 6 active patent families:
  - 1 family of patents, internationally extended in 11 countries, to protect the use of steroidal nitrones in neurodegenerative diseases (PCT/ ES2014/ 070421)
  - 1 patent granted (P201131338) that protects quinolylnitrones at national level with this same objective.
  - 1 patent requested to protect new quinolylnitrone compounds (PCT/EP2019/077525) extended in U.S.A. and EU.
  - 1 new patent for new steroidal nitrone compounds, with priority European application EP20382158 and PCT/EP2021/055653, extended in U.S.A. and EU.
  - 1 application for a nitrone-type compound in stroke, with European application EP22382680
  - 1 application for a nitrone-type compound in hearing loss, with European application EP22382706.4 and PCT/EP2023/07034.

MAJOR MILESTONES

- 1. Participation in an outstanding clinical trial on hemorrhagic transformation of stroke:: Chen CH, Shoamanesh A, Colorado P, Saad F, Lemmens R, De Marchis GM, Caso V, Xu L, Heenan L, Masjuan J, Christensen H, Connolly SJ, Khatri P, Mundl H, Hart RG, Smith EE. Hemorrhagic Transformation in Noncardioembolic Acute Ischemic Stroke: MRI Analysis From PACIFIC-STROKE. Stroke. 2024;55(6): 1477 - 1488. DOI:10.1161/STROKEAHA.123.045204.
- 2. Interesting publication about new potential drugs for ischemic stroke treatment: Escobar A, Martínez E, Hadjipavlou D, Alcázar A, Marco J. Synthesis, antioxidant and neuroprotective analysis of diversely functionalized a-aryl-N-alkyl nitrones as potential agents for ischemic stroke therapy. Eur J Med Chem. 2024;266: 116133 - 116133. DOI:10.1016/j.ejmech.2024.116133.
- 3. Impressive publication about a new toxicity mechanism in neuronal cells: Carretero VJ, Liccardi N, Tejedor MA, de Pascual R, Campano JH, Hernández JM. Lead exerts a depression of neurotransmitter release through a blockade of voltage dependent calcium channels in chromaffin cells. Toxicology. 2024;505: 153809 - 153809. DOI:10.1016/j.tox.2024.153809.
- 4. Original publication about new functional monitoring: Cabañes L, Fedirchuk O, López L, Abreu F, Carrasco R, Del Álamo M, Regidor I. Usefulness of Intraoperative Neurophysiological Monitoring in Intradural Spinal Tumor Surgeries. J Clin Med. 2024;13(24). DOI:10.3390/jcm13247588.
- 5. First biomarkers identified in thrombi of stroke patients. These biomarkers will contribute to an improvement in stroke diagnosis and treatment. Doctoral thesis by Lorena Peracho (supervisors: J. Masjuan and A. Alcázar).

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	22	68,52	3,61	11	50	4	18
2021	35	178,39	5,20	20	57	7	20
2022	25	426,05	18,52	19	76	6	24
2023	24	141,52	7,06	17	71	6	25
2024	19	104,50	5,50	19	100	7	37
	125	918,98	7,98	86	71	30	24

21

Area 1

Neurosciences, Sensory Organs and Mental Health

Ophthalmology Group



GROUP COMPOSITION

**Head**  
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**Principal Investigators**  
Francisco Arnalich Montiel  
Francisco José Muñoz Negrete  
Gema Rebolledo Fernández

**Collaborating Staff**  
Ana Díaz Montealegre  
Ana Rosa Albadea Jiménez  
Ángel López Vázquez  
Beatriz Lain 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  
Marco Sales Sanz  
María Moreno López  
Marta Gómez Mariscal  
Marta Suárez de Figueroa Díez  
Martha Stokking Ramírez  
Mercedes Serrador García  
Miguel Francisco Ruiz Guerrero  
Nieves Alonso Formento  
Noelia Oblanca Llamazares  
Pablo de Arriba Palomero  
Paula Hernández Martínez  
Verónica Sánchez Gutiérrez



LOCATION

Ramón y Cajal University Hospital  
Ophthalmology Unit  
9th floor - Left

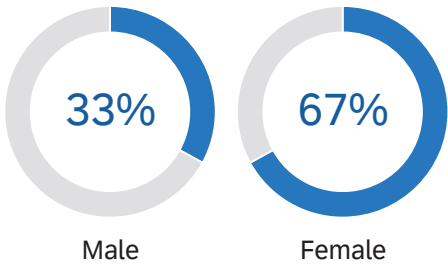


KEY WORDS

OCT, optic nerve, neuro-ophthalmology,  
glaucoma, uveitis, keratoconus,  
DMEK, DSAEK, corneal endothelium,  
Acanthamoeba, keratitis,  
Fuchs dystrophy, impression cytology,  
amniotic membrane, autologous serum,  
stem cells, severe dry eye, optic neuritis,  
ischemic optical neuropathy, AMD,  
Graves' disease, glaucoma surgery,  
genetics and glaucoma



BREAKDOWN BY GENDER





# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Ophthalmology Group

#### NETWORKS AND ALLIANCES

- RICORS – Inflammatory Conditions Network (ISCIII)
- FRB Keratoconus Registry
- FRB Dry Eye Registry
- FRB SPAIN-IMAGE
- International Study Group for Systemic Immunomodulatory Drug Treatment of Non Infectious Uveitis
- TOFU Registry Study Group
- British and Eire Association of Vitreoretinal Surgeons and European Society of Retina Specialists Retinal Detachment Outcomes Group
- LEROS Study Group



#### LINES

- Glaucoma
- Cornea
- Retina

#### STRATEGIC OBJECTIVES

- Clinical epidemiology of eye inflammation.
- Research on the internal retina stimulation on animals with external retina ablation.
- Amniotic membrane transplant in severe dry eye.
- Treatment with stem cells in severe dry eye.
- Endothelial cornea transplant.
- Keratitis by Acanthamoeba.
- Keratoconus: diagnosis and treatment.
- Stem cell therapy for treatment of corneal condition.
- Imaging methods in glaucoma and other optic neuropathies.
- New developments in glaucoma surgery.
- Genetic study on glaucoma and anterior segment dysgenesis.
- Thyroid eye disease.

#### ACTIVITY INDICATORS 2024

- 3 competitive public projects led: ISCIII
- 25 clinical trials led
- 3 private projects led
- 17 publications
- IF: 44.90
- Publications in Q1: 6 (35%)
- 4 awards
- Evaluators of national public agencies: 5 PIs
- Members of editorial committees: 11 researchers
- 1 family of patents with priority European application (EP22382119.0) and PCT/EP2023/053668
- 2 actions with impact on society: courses
- 7 visitors received and 6 months of stay:
  - University Hospital Centre Zagreb. Croatia
  - University Hospital Sveti Duh. Croatia
  - St. Adalbert's Hospital. Poland
  - University Of Trieste. Italy
  - University Hospital Sveti Duh. Croatia
  - Caucasus Medical Centre. Georgia

Neurosciences, Sensory Organs and Mental Health

Ophthalmology Group

MAJOR MILESTONES

- 1. Participation in a multicentre study on retinal detachment: “Improved Outcomes with Heavy Silicone Oil in Complex Primary Retinal Detachment”, that analyses the outcomes of using heavy silicone oil in complex primary retinal detachment. This multicentre study has allowed an improvement in the knowledge about the efficacy and safety of this surgical technique in complex cases, generating a major impact.
- 2. Incorporation of researchers with New Generation funding in AI projects and international registries. This incorporation strengthens the ability of the team to analyse large volumes of data and the implementation of predictive models, consolidating its leadership in technological innovation in Ophthalmology.
- 3. Certification of the Multidisciplinary Unit of Uveitis by the Society of Rheumatology of Madrid, which highlights the joint work of the Departments of Ophthalmology (Dr. Francisco José Muñoz Negrete) and Rheumatology (Dr. Mónica Vázquez Díaz) in the multidisciplinary management of uveitis, consolidating its leadership in the diagnosis and treatment of these inflammatory conditions of the eye.
- 4. Participation in executive committees for international registries on keratoconus and dry eye. Francisco Arnalich is a member of the Steering Committee of the FRB Keratoconus Registry, an international network of hospitals committed to the development and analysis of an international registry on keratoconus. Likewise, he also participates with David Mingo in the Steering Committee of the FRB Dry Eye Registry, another international registry focused on the study of dry eye.
- 5. Selected as the Number 1 Ophthalmology Unit at national level by MERCO's Healthcare Reputation Monitor (HRM); this acknowledgement attests its excellence, quality of care and leadership in this sector.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	17	44,90	4,08	9	53	2	12
	148	339,81	2,77	55	40	4	3



GROUP COMPOSITION

Head

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Ángela Hermosa Gelbard  
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Belén de Nicolás Ruane  
Borja Díaz Guimaraens  
Celia Sánchez Rangil  
Daniel Ortega Quijano  
David Saceda Corralo  
Elisa Carrasco Cerro  
Gerald Selda Enríquez  
Gonzalo Segurado Miravalles  
Irma Joyce Dias de Almeida  
Jimena Nicolás Morala

Juan Pablo Boixeda de Miguel  
Laura Miguel Gómez  
Luis Ríos Buceta  
María Asunción Ballester Martínez  
María Bibiana Pérez García  
María Elena de las Heras Alonso  
María Gallego Rentero  
Marta Mascaraque Checa  
Mikel Portillo Esnaola  
María González Ramos  
Montserrat Fernández Guarino  
Natalia Jiménez Gómez  
Óscar Muñoz Moreno-Arrones  
Pablo Fernández González  
Patricia Burgos Blasco  
Sonia Bea Ardebol



LOCATION

Ramón y Cajal University Hospital:  
Research labs (3rd floor -Right)  
Dermatology Day Hospital  
(8th floor – centre)  
Outpatient offices  
(2nd floor – Outpatient Consultation  
Building)

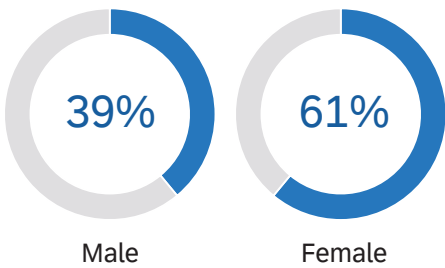


KEY WORDS

regenerative medicine, stem cells, skin,  
hair, non-melanoma cutaneous cancer,  
psoriasis, burns, wounds, chronic ulcers,  
dermatologic laser, imaging techniques  
in dermatology, photodynamic therapy,  
minority dermatological conditions,  
melanocyte transplantation, trichology,  
alopecia, androgenic alopecia, alopecia  
areata, frontal fibrosing alopecia, oral  
minoxidil.



BREAKDOWN BY GENDER





# Area 1

## Neurosciences, Sensory Organs and Mental Health

### Experimental Dermatology and Cutaneous Biology Group

#### NETWORKS AND ALLIANCES

- Plataforma SkinModel para el estudio de la homeóstasis y patología cutánea
- Piel en Red
- Plataforma BIOBARADERM
- Colaboración grupo de Investigación de John McGrath – King's College, London (Reino Unido)
- Colaboración Universidad Libre de Bruselas
- Colaboración con el Regional Dermatology Training Center (Tanzania)
- Laboratorio de fisiopatología vascular (HNP)
- National Institute of Health (NIH) (Dr. Nehal Mehta)
- MEDSTAR HEALTH (EEUU)
- University of Oxford (United Kingdom)
- Atria Clinic
- Francisco de Vitoria University
- COBIOMIC Biosciences
- University of Buenos Aires (Argentina)
- Cleveland Clinic University Hospitals (USA)
- New York University (USA)
- University of Bologna (Italy)
- University of Warsaw (Poland)
- Harvard University (USA)
- London St James's University (United Kingdom)



#### LINES

##### Regenerative Dermatology and stem cells

- Characterization of new regulation mechanisms for skin stem cells with potential applications in regenerative medicine and the treatment of different skin conditions.
- Characterization of molecular factors involved in conditions associated with skin stem cells (alopecia and others).

##### Therapeutic targets in non-melanoma skin cancer

- Development of diagnostic methods and identification of therapeutic targets in non-melanoma skin cancer.

##### Clinical dermatology

- Identification of new molecules, targets, biomarkers, prognostic cancers, comorbidity and response to treatments in inflammatory dermatological conditions.
- Implantation of non-invasive diagnostic imaging techniques in dermatologic conditions.
- Development of treatment for advanced non-melanoma skin cancer and strategies to prevent it, including high-risk patients.
- Genetic and trichoscopic characterization of alopecia.
- Characterization and treatment of severe reactions to drugs and chemotherapy treatments.
- Research on the photochemical, photobiologic, photomechanical, effects and photobiomodulation when applying light sources in the treatment for skin conditions and malformations..
- Characterization of the microbiota associated with dermatologic conditions.
- Development of melanocyte transplantation.
- Development of a multidisciplinary unit for complex dermatological patients.

##### Trichology

- New therapies for androgenic alopecia (oral minoxidil).
- JAK inhibitors for alopecia areata.
- Genetic characterization of patients with frontal fibrosing alopecia.
- Microbiota analysis in patients with alopecia areata and folliculitis decalvans.

#### STRATEGIC OBJECTIVES

- To characterize growth factors and transcriptional regulators involved in the proliferation and differentiation of skin stem cells and the regulation of the hair cycle, and in conditions associated with the function/dysfunction of these cells.
- To implement new clinical therapies based on skin stem cells to favor skin regeneration: burns and wounds, chronic ulcers, alopecia.
- Development of dermoepidermal skin equivalents or new generation artificial skin prototypes. Assessment of their use at clinical level, as disease model, or to assess response to topical treatments.
- To implement diagnostic methods and therapeutic targets for non-melanoma skin cancer, particularly for pre-malignant lesions such as actinic keratosis.
- To characterize the efficacy, safety, and improvement in morbimortality for new molecules or biologic drugs for treatment of psoriasis, atopic dermatitis and generalized vitiligo.
- Development of new technologies in the diagnostic area of Dermatology. Incorporation of cutaneous ultrasound, confocal microscopy and OCT for the diagnosis and monitoring of different cutaneous conditions and their comorbidities.
- Clinical trials with new therapeutic targets and development of prevention strategies for high-risk patients of non-melanoma skin cancer and transplanted patients.
- Description of the trichoscopy genes and patterns associated with different types of alopecia.
- To characterize the patterns of clinical, histological and immunological expression in patients with severe drug reactions (TEN, DRESS Syndrome, Steven-Johnson).
- Development and inclusion in protocol of laser and non-coherent (LLLT, LEDS) light sources as treatment, and solar light sources or in Photodynamic Therapy for different dermatologic conditions (vascular malformations, ulcers, tissue regeneration, alopecia, acne).
- Creation of a biobank for intestinal microbiota from patients with inflammatory and tumoral dermatologic conditions.
- Unit for vitiligo treatment conducting melanocyte transplantation in refractory cases of localized vitiligo.
- Operation in inter-department units for complex dermatologic conditions: unit of blistering conditions, lymphoma, apheresis, skin reactions to chemotherapy, and minority severe inflammatory conditions.

ACTIVITY INDICATORS 2024

- 4 public projects led: MICINN-MINECO, ISCIII, CAM
  - 9 private projects led
  - 41 clinical trials led
  - 61 publications
  - IF: 216.00
  - Publications in Q1: 33 (54%)
  - Publications in D1: 10 (16%)
  - 3 doctoral theses supervised and read
  - 5 awards
  - Translation: 2nd Practical Handbook of Trichology - TricoHRC
- Evaluators for national public agencies: 4 researchers
  - Members of editorial boards: 3 researchers
  - 10-day stays in foreign centres:
    - Pharmaceutical University of Showa (Machida, Tokio)
  - 5 visitors received and 40 months of stay:
    - Cleveland Clinic University Hospitals (USA)
    - Blauvelt consulting LLC (USA)
    - Warsaw University (Poland)
    - Bologna University (Italy)

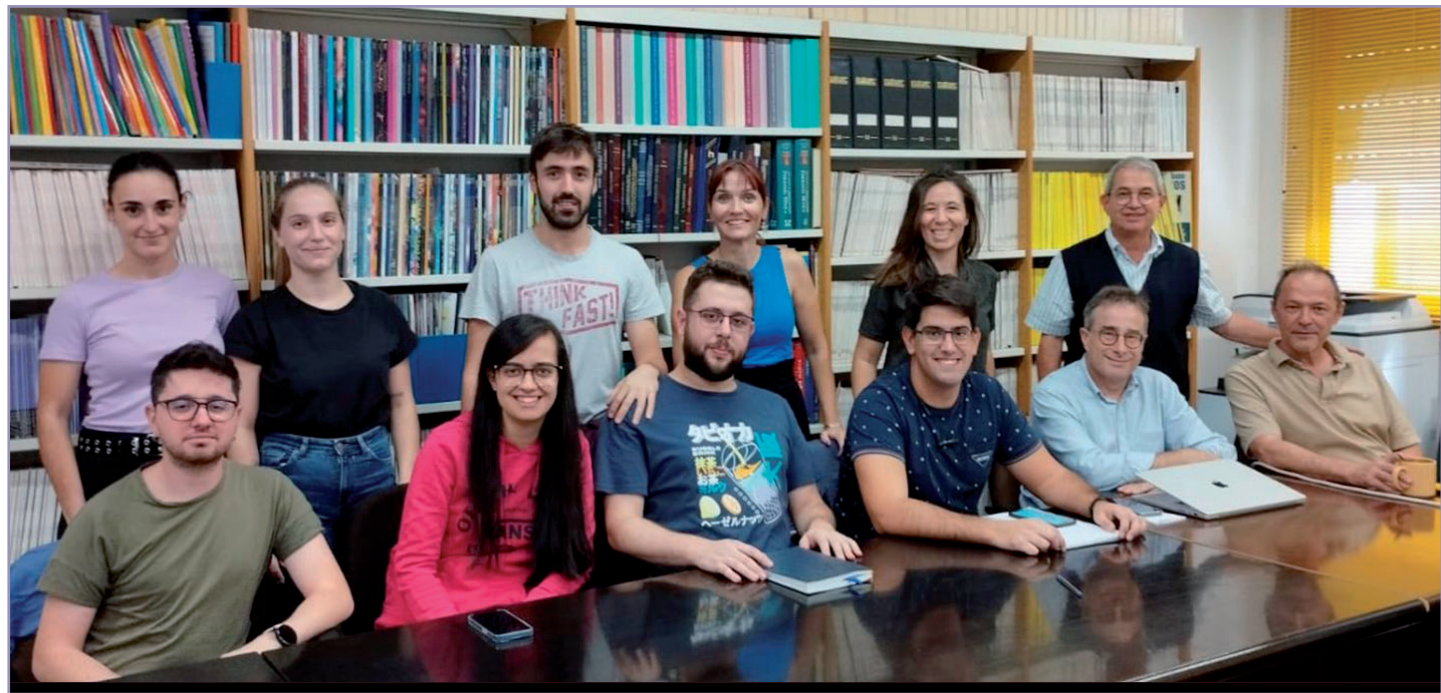
MAJOR MILESTONES

1. Dr. Pedro Jaén and Dr. Sergio Vañó have been selected as the best 2024 Dermatologists in Spain by the FORBES magazine.
2. In 2024, the group for research in psoriasis and cardiovascular risk, led by Dr. Álvaro González-Cantero, has published two original articles in one of the most important research journals for this specialty (Journal of Investigative Dermatology), as well as many other articles in high-impact journals.
3. The group has received funding for conducting a clinical trial designed by the team, titled: “Study on the effects of Mediterranean Diet on patients with psoriasis (MEDIPSO)”.
4. The scientific collaborations of the group with renowned research centres, both national and international, show its global scope, translated into joint publications and international visits.
5. During 2024, 3 doctoral theses by collaborating members of the research group have been read, showing their commitment with high-level research in Dermatology.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	61	216,00	5,14	39	64	10	16
	249	1193,30	6,27	167	66	65	26



GROUP COMPOSITION

Head

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Alicia Mansilla Aparicio  
Román Blanco Velasco

Collaborating Staff

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Consuelo Pérez Rico  
Cristina Alcácer Fernández-Coronado  
Francisco Germain Martínez  
Lorena Aguado García  
María José Casarejos Fernández  
Mateo Pazo González  
Pedro Blanco Hernán

Santiago Milla Navarro  
Sara Pérez Suárez  
Víctor Paleo González



LOCATION

Visual Neurophysiology Lab Systems  
Biology Unit  
School of Medicine University of Alcalá

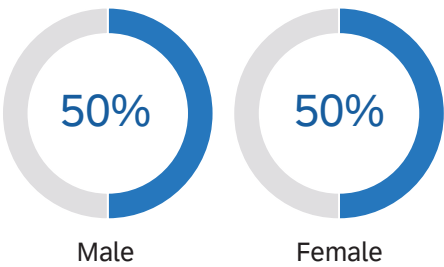


KEY WORDS

retina, synapse, calcium sensors,  
electroretinography, multifocal  
electroretinography (mfERG), retinitis  
pigmentosa, experimental models,  
multifocal visual evoked potentials  
(mfVEP)



BREAKDOWN BY GENDER





<b>LINES</b> <ul style="list-style-type: none"><li>Evaluation of the presence of light response in blind mice injected with “photoswitches”, through electrophysiological registry techniques and techniques for evaluation of visual behaviour.</li><li>Preparation and characterization of PLGA particles loaded with therapeutic agents for their application in retinal cell degeneration models, with study of molecular release, injection of PLGA particles, and functional efficacy studies.</li><li>Experimental models of glaucoma and mechanisms for neuroprotection of the retinal ganglion cells.</li><li>The protective role of physical exercise in neurodegenerative conditions.</li><li>Development of synaptic modulators for the treatment of neurodegenerative and neurodevelopment conditions.</li></ul>	<b>MAJOR MILESTONES</b> <ol style="list-style-type: none"><li>The group has demonstrated that the measurement of the Multifocal Visual Evoked Potential (mfVEP) can be used as an independent risk factor to predict the conversion to Multiple Sclerosis (MS) in individuals with Radiologically Isolated Syndrome.</li><li>Advance in the validation of “photoswitches” in animal models of blindness. These substances present response to light and allow to generate light responses even in complete absence of retinal photoreceptors.</li><li>Funding obtained for the development of new therapeutic interventions in Parkinson's disease, within the framework of a project coordinated with female CSIC researchers. In this project, artificial intelligence will be used for the design of new modulator compounds for synaptic activity.</li><li>Incorporation to the team of Dr. María José Casarejos, specialized in animal models of neurodegeneration and in liquid chromatography for neurotransmitter measurement. Her integration has allowed to initiate new research lines, such as the study of the retinal dopaminergic circuit.</li><li>Strengthening and expansion of the group collaborations with different research groups from the Autonomous University of Madrid, the Francisco de Vitoria University, and the CSIC. This expansion has been possible due to the identification of major synergies between the study of neurodegenerative and inflammatory diseases, and the wide experience of the group in the visual system, with particular focus on retina.</li></ol>
<b>STRATEGIC OBJECTIVES</b> <ul style="list-style-type: none"><li>Development of a therapeutic strategy based on optic pharmacology.</li><li>Evaluation of the therapeutic effect of pharmacological, neuroprotective and neuromodulator agents included in PLGA particles.</li><li>Development of neuroprotective agents in retinal neurodegenerations.</li></ul>	
<b>ACTIVITY INDICATORS 2024</b> <ul style="list-style-type: none"><li>4 competitive national public projects: ISCIII, MINECO/ MICINN</li><li>2 competitive Human Resources contracts: FPU and Research Assistant Contract of CAM.</li><li>9 publications</li><li>IF: 30,40</li><li>Publications in Q1: 6 (67%)</li><li>Evaluators for projects of national public agencies: 1 PI</li><li>Members of editorial boards: 1 PI</li><li>2 actions with impact on society: one conference and one participation in round table</li></ul>	

**BIBLIOMETRICS 2020-2024**  
(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	11	60,90	6,09	9	82	3	27
2021	8	50,32	6,29	8	100	1	13
2022	7	61,88	8,84	7	100	1	14
2023	6	41,61	6,94	6	100	3	50
2024	9	30,40	3,38	7	78	0	0
	41	245,11	6,31	37	92	8	20

### Research Groups

Infectious Diseases

Biology and Evolution of Microorganisms

Health Outcomes Research

Translational Individualized Medicine in Inflammation and Cancer



21

# Area 2

## Microbiology, Immunology and Infection

Financiación y producción científica en los últimos cinco años

ACCUMULATED INCOME  
(private / public projects and clinical trials)

13M€ 

R&D&I PROJECTS  
AND INITIATIVES

315 

PUBLICATIONS

1.184 

PUBLICATIONS IN  
Q1&Q2

78%

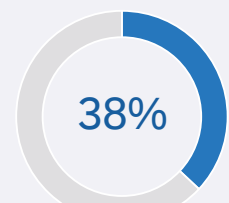
PUBLICATIONS with IRYCIS  
members as leaders

41%

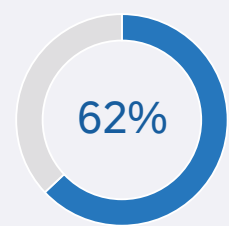
DOCTORAL THESES  
supervised and read

57

BREAKDOWN BY GENDER



Male



Female

### List of the five most relevant publications in the annuity

**Herencias C, Álvaro L, Ramiro P, Fernández A, Muñoz A, DelaFuente J, Graf FE, Jaraba L, Castillo JA, Cantón R, San Millán Á, Rodríguez J.**  $\beta$ -lactamase expression induces collateral sensitivity in *Escherichia coli*. *Nat Commun.* 2024;15(1): 4731 - 4731. DOI:10.1038/s41467-024-49122-2.

Sastre J, DelaFuente J, Toribio L, **Herencias C**, Herrador P, Costas C, **Hernández M, Cantón R, Rodríguez J, Santos A, San Millan A.** Plasmid-encoded insertion sequences promote rapid adaptation in clinical enterobacteria. *Nat Ecol Evol.* 2024;8(11): 2097 - 2112. DOI:10.1038/s41559-024-02523-4.

**Díaz C, Moreno E, Talavera A, Martín L, González S, Martín L, Pérez JA, Dronda F, Gosálbes MJ, Luna L, Vivancos MJ, Huerta J, Moreno S, Serrano S.** Fecal microbiota transplantation alters the proteomic landscape of inflammation in HIV: identifying bacterial drivers. *Microbiome.* 2024;12(1): 214 - 214. DOI:10.1186/s40168-024-01919-5.

García AG, **Vivancos MJ**, de Lagarde M, Ramírez M, Del Mar M, Orviz E, Curran A, Carmona F, **Moreno S, Pérez MJ, Martínez J,** Cohort of the Spanish HIV/AIDS Research N. Transition times across the HIV care continuum in Spain from 2005 to 2022: a longitudinal cohort study. *Lancet HIV.* 2024;11(7): 470 - 478. DOI:10.1016/S2352-3018(24)00118-8.

**Suárez C, Corbacho MD, Del Campo L, Kamel S, Halperin AV, Escudero R, Ponce M, Moreno S, Cobo J.** Is advanced age still a risk factor for recurrence of *C. difficile* infection in the era of new treatments? *Age Ageing.* 2024;53(8): afae182. DOI:10.1093/ageing/afae182.





GROUP COMPOSITION

Head

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Principal Investigators

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Elena Moreno del Olmo  
Francisco Javier Cobo Reinoso  
Humberto Erick de la Torre Tarazona  
Javier Martínez Sanz  
Jesús Fortún Abete  
José Antonio Pérez Molina  
María Jesús Pérez Elías  
María Jesús Vivancos Gallego  
Matilde Sánchez Conde  
Pilar Martín Dávila

Santiago Moreno Guillén  
Sergio Serrano Villa

Collaborating Staff

Adrián Martín-Hondarza Ríos  
Alba Talavera Rodríguez  
Alejandro García García  
Ana del Amo de Palacios  
Ana María Moreno Zamora  
Carmen Quereda Rodríguez-Navarro  
Celia Cano Sanz  
Clara Crespillo Andújar  
Claudio Díaz García  
Daniel de las Heras Gómez  
Diego Gayoso Cantero  
Enrique Navas Elorza  
Fernando Dronda Núñez  
Francesca Florence Norman  
Francesca Guiuseppina Gioia  
Javier Moreno García

Jorge Díaz Álvarez  
José Luis Casado Osorio  
José Manuel Hermida Donate  
Laura Martín Pedraza  
María Dolores Corbacho Loarte  
María Fons Contreras  
Mario Pons Guillén  
Miguel Suárez Robles  
Paul Nicholas Holmes Anton  
Raquel Ron González  
Rogelio López-Vélez Pérez  
Rosa Escudero Sánchez  
Roser Navarro Soler  
Sandra Chamorro Tojeiro  
Santos del Campo Terrón  
Sara Sáiz Baggetto  
Vicente Pintado García



LOCATION

Immunovirology Lab and Clinical Trials  
Unit in General Infectious Diseases.  
4th floor – Centre, Control A  
Clinical Trials Unit in HIV Infection and  
Tropical Medicine.  
Outpatient Building, ground floor  
Ramón y Cajal University Hospital

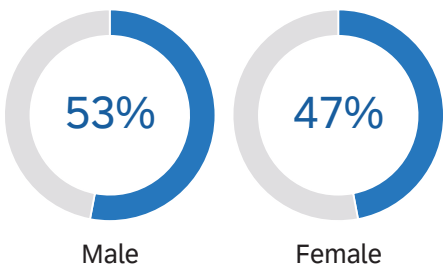


KEY WORDS

infection, HIV, immunosuppressed,  
antibiotic, antiviral, antiparasitic,  
antifungals, hepatitis, human papilloma  
virus, sexually transmitted infection



BREAKDOWN BY GENDER



# Area 2

## Microbiology, Immunology and Infection

### Infectious Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER for 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 travellers 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 Organization: centre for the clinical management of leishmaniasis-SPA 55
- European AIDS Clinical society (EACS) - Women against viruses in Europe (WAVE)
- SEIMC Group for Study of AIDS



#### LINES

- HIV infection.
- Imported infectious diseases (Tropical Medicine).
- Infectious diseases in healthy and immunosuppressed persons.
- Clinical applications of microbiome.

#### STRATEGIC OBJECTIVES

- To examine the drivers and pathogenic mechanisms of infectious diseases that cause health problems in our setting, with special emphasis on environmental factors of the host and the microorganism itself.
- To determine the best diagnostic, therapeutic and preventive approach for conditions caused by bacteria, virus, fungus or parasites prevalent in our setting.
- To examine, in collaboration with national and international groups, the mechanisms for HIV persistence, and the pharmacological interventions that can contribute to its eradication.
- To understand the characteristics of infectious diseases affecting immigrants in Spain and people travelling to tropical and subtropical areas, examining the diagnostic and therapeutic procedures for them.
- To define strategies for optimizing the use of antimicrobials for treatment of community and hospital infections, allowing to achieve maximum efficacy with the lowest toxicity for the patient, the lowest impact on the ecosystem, and the lowest pharmaceutical expenses.
- To define the mechanisms through which microbiome contributes to the pathogenesis of infectious and non-infectious diseases, and to make the most of their potential to identify biomarkers and therapeutic targets.

ACTIVITY INDICATORS 2024

- 2 competitive European projects: SULTAN, IMI-COMBACTE-NET
- 12 competitive national public projects: ISCIII
- 15 private projects led
- 60 clinical trials led
- 13 competitive Human Resources contracts
- 84 publications
- IF: 574.70
- Publications in Q1: 51 (30%)
- Publications in D1: 25 (30%)
- 7 doctoral theses supervised and read
- 1 research award
- Evaluators for projects by national and international institutions: 10 PIs
- Members of editorial boards: 7 PIs
- 5 visitors received and 13 months of stay:
  - Princeton University (Germany)
  - Humanitas University (Italy)
  - Centro Investigaçao Em Saude De Manhiça (Mozambique)
  - Fundación SEIMC-Gesida (Spain)
  - Constructor University (Albania)
- 6-month stay in foreign centres:
  - Toronto General Hospital (Canadá)
- 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 PCT/EP2023/082280 extension “Microbiota-associated markers of high-grade squamous intraepithelial lesions (HSIL)”

MAJOR MILESTONES

1. García AG, Vivancos MJ, de Lagarde M, Ramírez M, Del Mar M, Orviz E, Curran A, Carmona F, Moreno S, Pérez MJ, Martínez J, Cohort of the Spanish HIV/AIDS Research N. Transition times across the HIV care continuum in Spain from 2005 to 2022: a longitudinal cohort study. Lancet HIV. 2024;11(7): 470 - 478. DOI:10.1016/S2352-3018(24)00118-8.
2. Systematic review: Gioia F, Walti LN, Orchanian A, Husain S. Risk factors for COVID-19-associated pulmonary aspergillosis: a systematic review and meta-analysis. Lancet Respir Med. 2024;12(3): 207-216. DOI:10.1016/S2213-2600(23)00408-3.
3. Díaz C, Moreno E, Talavera A, Martín L, González S, Martín L, Pérez JA, Dronda F, Gosalbes MJ, Luna L, Vivancos MJ, Huerta J, Moreno S, Serrano S. Fecal microbiota transplantation alters the proteomic landscape of inflammation in HIV: identifying bacterial drivers. Microbiome. 2024;12(1): 214 - 214. DOI:10.1186/s40168-024-01919-5.
4. FORTALECE: The FAR – FORTALECE IRYCIS project starts, with the Infectious Diseases Group as part of it.
5. Success at the AES 2024 Call: 4 health research projects (PI24/00078; PI24/00811; PI24/01983; PI24/02115); 3 competitive Human Resources contracts in research; 2 Río Hortega (CM24/00067 and CM24/00112), 1 PFIS (FI24/00284).

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	84	574,70	7,18	72	86	25	30
	493	3679,90	7,81	373	76	132	27



# Area 2

## Microbiology, Immunology and Infection

### Biology and Evolution of Microorganisms Group



#### GROUP COMPOSITION

##### Head

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##### Principal Investigators

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África Holguín Fernández  
Ana Elena Pérez Cobas  
Cristina Herencias Rodríguez  
Fernando Baquero Mochales  
Jerónimo Carlos Rodríguez Beltrán  
Juan Carlos Galán Montemayor  
Juan de Dios Caballero Pérez  
María Teresa Coque González  
Patricia Ruiz Garbajosa  
Rosa María del Campo Moreno

##### Collaborating Staff

Ada Muñoz Cazalla  
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Ainoa Paredes Plaza  
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Ana Valadés Alcaraz  
Ana Verónica Halperin  
Bárbara Catalá Sánchez  
Beatriz Romero Hernández  
Blanca Pérez Viso  
Carlos Medina Sánchez  
Carmen de la Vega Losada  
Carolina López López  
Concepción Rodríguez Jiménez  
Desirée Gijón Cordero  
Esther Palacios Gómez  
Ignacio de Quinto Cáceres  
Joao Pedro Alves Gama  
José Avendaño Ortiz  
Judit María Ventosa Cubillo  
Laura Álvaro Llorente  
Laura Jaraba Soto

Laura Martínez García  
Luna Ballester García  
María Asunción Garriga García  
María del Carmen García Castillo  
María Elena Martínez Rodríguez  
María Elia Gómez García de la Pedrosa  
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  
Paula Ramiro Martínez  
Pedro Manuel Ponce Alonso  
Roberto Reinoso Fernández  
Saïoa Vicente Santamaría  
Silvia Serrano Calleja  
Sonia Aracil Gisbert



#### LOCATION

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

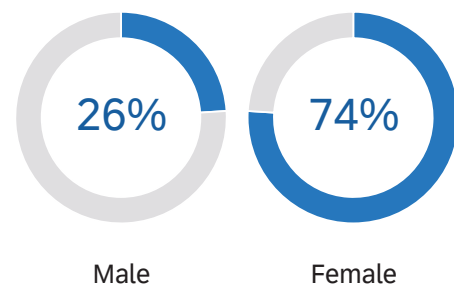


#### KEY WORDS

populational biology, resistance to antimicrobials, respiratory infection, microbiota, metagenomics, HIV, clinical trials for diagnostic tests, phagotherapy



#### BREAKDOWN BY GENDER



# Area 2

## Microbiology, Immunology and Infection

### Biology and Evolution of Microorganisms Group

#### NETWORKS AND ALLIANCES

- CIBER for Epidemiology and Public Health
- CIBER for Infectious Diseases
- CLSI - Clinical & Laboratory Standards Institute
- JPIAMR - Joint Programme Initiative on Antimicrobial Resistance
- EUCAST - European Committee on Antimicrobial Susceptibility Testing
- International HIVDR TCN LAC Network
- Gadea Science Foundation
- WHO-UNAIDS Network for HIV Isolation and Characterisation
- FAO (Food and Agriculture Organization of the United Nations) / WHO (World Health Organization)
- PRAM – National Plan for Resistance to Antimicrobials
- CYTED-PLANTAIDS
- Emory University, Atlanta (USA)
- CYTED-RESISTIRE (Network for Systematic Interacademic Study of Resistance)
- Francisco Soria Melguizo Foundation
- RITIP-Network for Translational Research in Pediatric Infectology
- SEMTSI-Spanish Society of Tropical Medicine and International Health
- CHAFAEA-Consumers, Health, Agriculture and Food Executive Agency
- Alonso Family Foundation
- ICOMEM- Illustrious Official College of Physicians of Madrid
- Biotechvana (Technological park of Valencia)
- SARS-CoV-2 Sequencing Network
- National Plan for AIDS
- Bomberos Ayudan Association
- SEPLA Ayuda Foundation
- Solidary Tourism 2020 Foundation
- National Association of Hotel Managers of Spain (AEDH)
- Spanish Network of Lactic Bacteria (RedBAL)
- Transatlantic Taskforce on Antimicrobial Resistance (TATFAR)
- ASEBIO Work Group on Antibiotic Resistance
- United Nations Environmental Programme (UNEP)
- Spanish Society of Microbiota, Probiotics and Prebiotics (SE-MIPyP)
- PRECICOLON-CM. Towards Precision Medicine in Colorectal Cancer: biomarkers, tumour microenvironment and microbiota
- SEIMC-GEMARA: Study Group for Mechanisms of Action and Resistance to Antimicrobials.
- JPIAMR Research Networks (TEAPOTS, ISARPAE)
- ESGEM: ESCMID Study Group for Epidemiological Markers
- EFWISG: ESCMID Study Group for Food- and Water-borne Infections



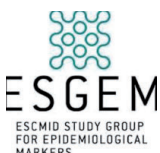
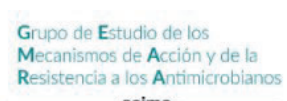
Plan Nacional  
Resistencia  
Antibióticos



Ilustre Colegio  
Oficial de Médicos  
de Madrid



SECRETARÍA GENERAL  
DE SANIDAD Y CONSUMO  
DIRECCIÓN GENERAL  
DE SALUD PÚBLICA,  
CALIDAD E INNOVACIÓN  
SECRETARÍA  
DEL PLAN NACIONAL  
SOBRE EL SIDA



#### LINES

- Epidemiology of antibiotic resistance, clinical trials, diagnostic tests and phagotherapy (PI: Dr. R. Cantón, Co-PI: Dr. P. Ruiz-Garbajosa)
- Evolutive Microbiology, Eco-Microbiology, and Microbial Processes Modelling with relevance on Global Health (PI: Dr. F. Baquero)
- Bacterial populations biology, mobile genetic elements and resistome (PI: Dr. M.T. Coque, Co-PI: Dr. AE. Pérez Cobas)
- Metagenomics/Microbiome and disease; host-parasite interaction (PI: Dr. R. del Campo, Co-PI: Dr. J. Avendaño)
- Evolution of antibiotic resistance, mechanisms and new strategies (PI: Dr. J.C. Rodríguez-Beltrán, Co-PI: Dr. C. Herencias)
- Diagnostic and clinical consequences of viral variability in national and international cohorts. Development of nanotechnologies in early molecular diagnosis for HIV with aptamers (PI: Dr. A. Holguín)
- Strategies for diagnostic improvements and genomic epidemiology of sexually-transmitted (HIV/STIs/hepatitis) and respiratory transmitted viral infections (PI: Dr. J.C. Galán).
- Cystic fibrosis: self-management for nutritional approach in search of patients' wellbeing (PI: Dr. J.d.D. Caballero and S. Vicente)

#### STRATEGIC OBJECTIVES

- Innovation and development in translational research in Microbiology, with emphasis on the anthropogenic influence on the urgency and dissemination of pathogenic microorganisms and/ or with resistance to antimicrobials, and potential control strategies.
- Consolidation of molecular microbiology techniques, bioinformatic platforms, mathematical and computational modelling for the study of changes in microbial biology and microbiome with influence on human health, considered at multiple hierarchical levels (from genes to clones and to patients and the built environment).
- Consolidation of an innovative hospital-based microbiology useful for public health, with applications in hospital infections, and also in community infections and environmental microbial ecosystems.
- Training of researchers on Molecular Microbiology and Public Health Microbiology.

#### ACTIVITY INDICATORS 2024

- 9 competitive European projects: IMI, H2020, HE, ERC-STG, EU4HEALTH, JPIAMR
- 13 competitive national public projects led: ISCIII, CAM, MICIIN
- 13 private projects led
- 5 clinical trials led
- 15 competitive Human Resources contracts
- 99 publications
- IF: 519,90
- Publications in Q1: 53 (54%)
- Publications in D1: 24 (24%)
- 2 doctoral theses supervised and read
- 7 awards
- Project evaluators: 8 group members
- Members of editorial boards: 6 PIs
- 1 Spanish brand registration and software registration (M4263261 and 2404247750786-2ETRXX) of EPIMOLBIO and one application for European patent titled: "European priority application: aptamers against HIV proteins" (EP24383092.4)
- 2 clinical guidelines, 1 consensus document, 1 procedure, 1 European agenda
- 9 visitors received and 13-month stay:
  - MIKROBIOMIK (Spain)
  - Reina Sofia Hospital (Spain)
  - University of Veterinary Sciences BRNO. (Czech Republic)
  - MCI Management Center. Innsbruck (Austria)
  - Harvard University School of Medicine. Boston (USA)
  - Max Planck Institute for Evolutionary Biology. Pion (Germany)
  - Emory University. Atlanta (USA)
  - Colombian Centres for Genomics and Extreme Environments Bioinformatics. Bogotá (Colombia)
  - Virgen del Rocío Hospital. Seville (Spain)
- 11-month stay in 3 foreign centres:
  - Yale University (USA)
  - Alexander von Humboldt Tropical Medicine Institute. Cayetano Heredia Peruvian University. San Martín de Porres (Perú)
  - Wellcome Wolfson Institute for Experimental Medicine (Queens University, Belfast). Belfast (United Kingdom)



Microbiology, Immunology and Infection

Biology and Evolution of Microorganisms Group

MAJOR MILESTONES

- 1. **Attracting funds in competitive calls for international projects** (ERADIAMR AC23\_2/00047) and national ISCIII projects (PI24/01898, PI24/01449, FOR23/00046 FORTALECE), MICINN (CPP2023-010453 Ministry of Science, Innovation and Universities), local (UAH- IRYCIS23/11\_COMTI), including Human Resources (1 Río Hortega CM23/00037, Predoctoral CAM PIPF-2023/ SAL-GL-30595, Research Assistant CAM PEJ-2024-AI/SAL-GL-31755, for attracting research talent “César Nombela” by the CAM) and **agreements with pharmaceutical, biotechnological and diagnostic companies** (QBD, GILEAD) and Foundations (Alonso Family, Eugenio Rodríguez Pascual Foundation).
- 2. **Acknowledgement for its researchers:** 1) Margarita Salas Award of the CAM to under 40-year-old researchers, 2) Margarita Salas Nacional Research Award, Biology Area, 3) Amadeo Foz award of the Spanish Society of Infectious Diseases and Clinical Microbiology, and 4) Inclusion of 3 of its researchers in the “top 2% scientist” international list, according to the Stanford University.
- 3. **Appointment as Manager of IRYCIS Area 2** (Microbiology, Immunology and Infection) for one of its Principal Investigators, Dr. Rosa del Campo.
- 4. **Start of activities as European Union Reference Laboratory (EURL)** for in vitro devices for Class D diagnosis (EURL-IVD.1: Harmonization process of European Reference Laboratories for in vitro diagnosis).
- 5. **International Cooperation in Africa and Latin America.** Participation in Programs of Counselling for HIV/AIDS, research project in HIV in children, and training of healthcare professionals in the diagnostic area.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	99	519,90	6,05	71	72	24	24
	517	3175,88	6,70	375	73	96	19

# Area 2

## Microbiology, Immunology and Infection

### Health Outcomes Research Group



#### GROUP COMPOSITION

**Head**

Jesús M<sup>a</sup> Aranaz Andrés  
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91 336 83 72

**Principal Investigator**

Jesús M<sup>a</sup> Aranaz Andrés

**Collaborating Staff**

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Ana García de la Santa Viñuela

Blanca Romero Panadero  
Carmen Garrote Liarte  
Consuelo Bautista Fernández  
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  
Jorge de Vicente Guijarro  
Juan Daniel Miranda Cortes  
Manuela Serrano Pareja

Marco Antonio Espinel Ruiz  
María del Carmen Martínez Ortega  
Mercedes García Haro  
Miguel Ignacio Cuchi Alfaro  
Miriam Roncal Redin  
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**

Preventive Medicine and Public Health  
Unit – 3rd floor – Left.  
Ramón y Cajal University Hospital

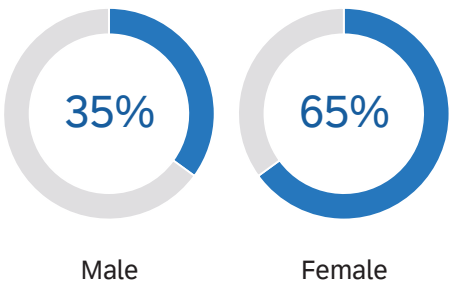


**KEY WORDS**

health outcomes research, patient safety, adverse events, quality of care, patient satisfaction, use and evaluation of health centers and services, clinical epidemiology



**BREAKDOWN BY GENDER**



Male Female

## Microbiology, Immunology and Infection

## Health Outcomes Research Group

## NETWORKS AND ALLIANCES

- CIBER for Epidemiology and Public Health
- Polytechnic University of Madrid
- Center for Risk Management and Patient Safety of Tuscany, Italy.
- Escola Nacional de Saúde Pública - Universidade Nova de Lisboa



## LINES

- Health outcomes research
- Public health outcomes research

## STRATEGIC OBJECTIVES

- Surveillance of health problems, with the aim to assess changes and trends in level of health and its determining factors, and particularly of those of the hospital setting itself, through the application of principles and methods of epidemiology.
- Intervention, through individual preventive medicine activities and others of generic or joint nature (preparation of regulations, guidelines, protocols, etc.) for an improvement in the efficacy of clinical practice, quality of care and patient safety.
- Promotion and protection of health, oriented to improving the level of health and the control of its determining factors.
- Evaluation of risks at hospital and in the community, and improvement of their management.
- Evaluation of the effectiveness, efficacy and utility of the different actions conducted.

## ACTIVITY INDICATORS 2024

- 2 competitive public projects led
- 4 private projects led
- 1 competitive Human Resources contract
- 5 publications
- IF: 17.80
- Publications in Q1: 2 (40%)
- Publications in D1: 1 (20%)
- 9 awards
- Evaluators for public national agencies: 3 researchers
- Members of editorial boards: 2 researchers
- 1 new registration of utility model (face mask for inhalation of nebulized substances with an incorporated aspiration system (U202230357)
- 4 intellectual property registrations: APP SER+COVID (1609022147992) and 3 other new APPs: Quickvaccine (2205271226694), No hacer (2207261668651) and ADECUAS (2209232069733)
- 1 new intellectual property registration of the "Manual for cleaning and decontaminating medical-surgical materials and instruments" (2211022547215)
- 1 intellectual property registration for assembly and preparation: "those great forgotten aspects in sterilization" (1910012057062)
- 6 technical documents
- 1 visitor received and 1.8 months of stay:
  - Polytechnic University of Madrid (Spain)
- 7-month stay in foreign centres:
  - T.H. Chan Public Health School of Harvard University (USA)
  - University Hospital of Geneva (Switzerland)
  - Escola Nacional de Saude Publica de la Universidade NOVA de Lisboa (Portugal)



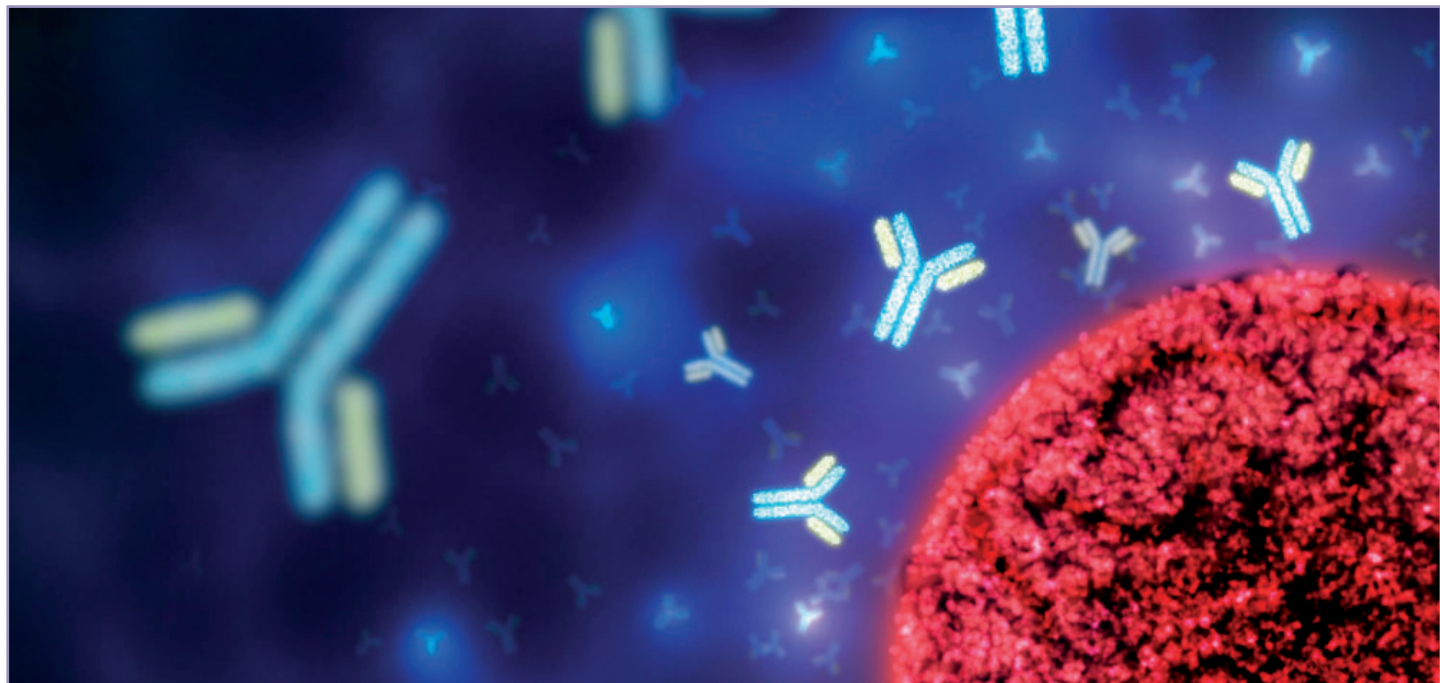
MAJOR MILESTONES

- 1. Publication of the book “Preventive Medicine and Public Health in Clinical Practice”, with direction by Dr. Jesús María Aranaz and by Dr. Jorge de Vicente (edited by the Mapfre Foundation). It summarizes knowledge from 9 subject areas within the specialty, involving over 150 experts in its preparation. Being a groundbreaking contribution, it positions itself as a frame of reference for practice for the rest of professionals.
- 2. Celebration of the “1st Conference on Quality of Care and Patient Safety in Sociosanitary Centres”, within the project “An Integrated System of Quality and Continuity of Care between the hospital and the sociosanitary settings”, which is a pioneer in approaching linking structures and strategies with the aim to improve the quality of care and safety of patients living in retirement homes. It was attended by 350 persons and by over 150 virtual attendees.
- 3. Review published in “Medicina Clínica”, a first quartile (Q1) in its area. This article was prepared on request by the journal to its authors. **Vicente J, San Jose D, Aranaz JM.** Inappropriate Hospitalization: Measurement approaches. Med Clin (Barc). 2024;163(2): 91 - 97. DOI:10.1016/j.medcli.2024.01.022.
- 4. BiC 2024 Award to the “Best Preventive Medicine and Public Health Unit”, and 5 star accreditation. The Unit also received the 5-star accreditation by being the fourth award within the past 5 years. This distinction represents one of the principal acknowledgements for the work conducted.
- 5. Preparation and dissemination of the “Diagnostic Error Video for Patient Safety Day”. An activity within the frame of Patient Safety promotion. The video makes visible the set of problems associated with diagnostic errors. It was distributed to the main scientific societies, the press, and through the YouTube channel of the unit on the occasion of the Conference, and it involved the Hospital Management and Heads of Department, making visible the commitment by the Ramón y Cajal University Hospital to patient safety.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	5	17,80	3,56	4	80	1	20
	62	202,94	3,95	33	53	3	5



GROUP COMPOSITION

Head

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Melchor Álvarez de Mon Soto  
Miguel Ángel Álvarez de Mon González

Collaborating Staff

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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

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(Madrid)

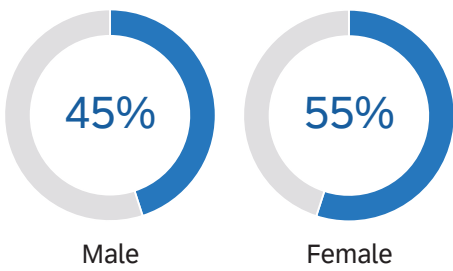


KEY WORDS

T-lymphocytes, B-lymphocytes,  
myelomonocytic cells, inflammation,  
immunomodulation



BREAKDOWN BY GENDER



NETWORKS AND ALLIANCES

- CIBER for Liver and Digestive Diseases
- Translational Individualized Medicine in Inflammation and Cancer Program (MITIC-CM)



ACTIVITY INDICATORS 2024

- 1 competitive national public: ISCIII
- 1 competitive Human Resources contract
- 44 publications
- IF: 187.10
- Publications in D1: 6 (14%)
- Publications in Q1: 25 (57%)
- 8 doctoral theses supervised and read
- Evaluators for public research agencies: 2 PIs
- Members of editorial boards: 1 PI

LINES

- Study of the alterations of the T and B lymphocyte compartments and of the innate immune cells in diseases with established immunoinflammatory pathogenesis. Special emphasis on autoimmune conditions affecting the musculoskeletal system and systemic. Analysis of its diagnostic and therapeutic significance.
- Study of the pathogenic involvement of the immune system in conditions affecting the central nervous system. Analysis of its clinical and therapeutic significance. Development, study and use of biomaterials as tissue replacements.
- Research on the etiopathogenetic mechanisms of the immune system alterations. Analysis of the relevance of interactions with microbiota and other body systems.
- Clinical and therapeutical applications of immune system modulation.

MAJOR MILESTONES

1. Consolidation of the MITIC-CM Consortium of the Program for R&D activities in Biomedicine of the Community of Madrid (B2022/BMD-7321).
2. 8 doctoral theses defended by young clinical researchers with quality indexes and publications in JCR.
3. Implementation of the Research on the Central Nervous System University Chair (ADAMED).
4. **Ortega MA, Fraile-Martínez O, García-Montero C, Díaz-Pedrero R, López-González L, Monserrat J, Barrena-Blázquez S, Álvarez-Mon MA, Lahera G, Álvarez-Mon M.** Understanding immune system dysfunction and its context in mood disorders: psychoneuroimmunoendocrinology and clinical interventions. *Mil Med Res.* 2024 Dec 17;11(1):80. doi: 10.1186/s40779-024-00577-w.
5. Participation and leadership in the MadrigNight Program “Researchers and citizens: facing together the European challenges”.

STRATEGIC OBJECTIVES

- Analysis and characterization of the immune system response in conditions with inflammatory pathogenesis.
- Clinical and therapeutic significance of the immune system alterations in conditions with inflammatory pathogenesis.
- Development of strategies for diagnostic and therapeutic individualization in conditions with immune pathogenesis and of immunomodulating treatments.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	44	187,10	4,35	41	93	6	14
	192	966,59	4,98	168	88	23	12



## Research Groups

Molecular Pathology of Cancer

Biomarkers and Personalized Approach to Cancer (BioPAC)

Intestinal Morphogenesis and Homeostasis

Translational Haematology



Funding and Scientific Production during the last five years

ACCUMULATED INCOME  
(private / public projects and clinical trials)

26M€ 

R&D&I PROJECTS  
AND INITIATIVES

1.006 

PUBLICATIONS

894 

PUBLICATIONS IN  
Q1&Q2

80%

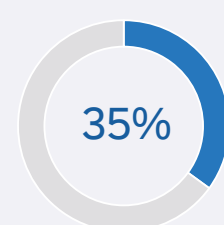
PUBLICATIONS with IRYCIS  
members as leaders

27%

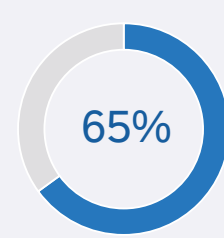
DOCTORAL THESES  
supervised and read

23

BREAKDOWN BY GENDER



Male



Female

List of the five most relevant publications in the annuity

**López JC, García S, Ruiz L, Navarro D, Palencia A, Giráldez A, Earl J, Dorado J, Gómez G, Monfort A, Alcalá S, Gaida MM, García S, Cabezas P, Batres S, Barreto E, Sánchez P, Vallespinós M, Ambler L, Lin ML, Aicher A, García García de Paredes A, de la Pinta C, Sanjuanbenito A, Ruz I, Rodríguez M, Guerra C, Carrato A, de Cárcer G, Sánchez L, Nombela C, Espinet E, Sanchez VJ, Heesch C, Sainz BJR.** The Peptidoglycan Recognition Protein 1 confers immune evasive properties on pancreatic cancer stem cells. Gut. 2024;73(9): 1489 - 1508. DOI:10.1136/gutjnl-2023-330995.

Iborra M, Ruiz J, Velasco de la Esperanza M, Estrada BS, Bovolenta ER, Cifuentes C, Prieto C, González T, García J, Rey MF, Rupérez FJ, Guerra M, Argüello RJ, Cogliati S, **Martín F, Martínez N.** Defective mitochondria remodelling in B cells leads to an aged immune response. Nat Commun. 2024;15(1): 2569 - 2569. DOI:10.1038/s41467-024-46763-1.

**Alcalá S, Villarino L, Ruiz L, Couceiro JR, Martínez M, Palencia A, Navarro D, Cabezas P, Rodríguez I, Cordero A, Trilla L, Rubiolo JA, Batres S, Vallespinos M, González C, Rodríguez J, Gámez A, Vara J, Fernández SF, Berlinches AB, Moreno N, Redondo A, Carrato A, Hermann PC, Sánchez L, Torrente S, Fernández MÁ, Mascareñas JL, Sainz BJR.** Targeting cancer stem cell OXPHOS with tailored ruthenium complexes as a new anti-cancer strategy. J Exp Clin Cancer Res. 2024;43(1): 33 - 33. DOI:10.1186/s13046-023-02931-7.

**Ruz I, Caniego T, Alonso T, Carretero I, Ariño C, Santón A, Rosas M, Pian H, Molina J, Luengo P, Palacios J.** Transcriptomic Differences in Medullary Thyroid Carcinoma According to Grade. Endocr. Pathol. 2024;35(3): 207 - 218. DOI:10.1007/s12022-024-09817-0.

**Palencia A, Ruiz L, Abal M, López JC, Batres S, Saraiva SM, Yagüe B, Navarro D, Alcalá S, Rubiolo JA, Bidan N, Sánchez L, Mura S, Hermann PC, de la Fuente M, Sainz B.** Reprogramming tumor-associated macrophages with lipid nanosystems reduces PDAC tumor burden and liver metastasis. J Nanobiotechnology. 2024;22(1): 795 - 795. DOI:10.1186/s12951-024-03010-5.



GROUP COMPOSITION

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Principal Investigators

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Amparo Benito Berlinches  
Elena López Miranda  
Eva Cristóbal Lana  
Eva María Guerra Alía  
Ignacio Ruz Caracuel  
Irene Carretero del Barrio  
Luis Cristian Perna Monroy

María 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

Anatomopathology Unit  
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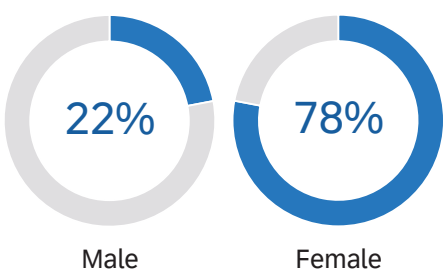


KEY WORDS

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



BREAKDOWN BY GENDER





NETWORKS AND ALLIANCES

- CIBER for Cancer
- Spanish Group for Ovarian Cancer Research (GEICO)
- IMPaCT – Precision Medicine Infrastructure associated to Science and Technology
- The Ovarian Tumour Tissue Analysis (OTTA)



LINES

- Clinical and molecular characterization of breast, ovary and endometrium cancer, and its diagnostic, prognostic and predictive consequences

STRATEGIC OBJECTIVES

- To research into the molecular alterations associated with the most aggressive histological types of breast, endometrial and ovarian cancer, and to determine their potential role as prognostic and predictive factors. Evaluation of new treatments and therapeutic targets.

ACTIVITY INDICATORS 2024

- 4 competitive national public projects: ISCIII
- 2 competitive private projects led
- 5 private projects led
- 158 clinical trials led
- 71 publications
- IF: 664.00
- Publications in Q1: 50 (70%)
- Publications in D1: 28 (39%)
- 1 doctoral thesis supervised and read
- 1 consensus document
- 5 acknowledgements to group members
- Evaluator for projects by national public agencies: 1 PI
- Member of national and international editorial boards: 1 PI
- 3 visitors received and 6.3-month stay:
  - Polytechnic University of Madrid (Spain)
  - University Chieti-Pescara (Italy)

MAJOR MILESTONES

1. Coordination of the Breast Conditions Unit of HURYC, contributing to the obtention of its reaccreditation.
2. Participation in the consensus guidelines for the use of biomarkers in breast cancer: “Colomer R, González- Farré B, Ballesteros AI, Peg V, Bermejo B, Pérez-Mies B, de la Cruz S, Rojo F, Pernas S, Palacios J. Biomarkers in breast cancer 2024: an updated consensus statement by the Spanish Society of Medical Oncology and the Spanish Society of Pathology. Clin Transl Oncol. 2024; 26(12):2935-2951. doi: 10.1007/s12094-024-03541-1. PMID: 38869741”.
3. Stabilization of the program for cervical cancer screening by the Community of Madrid (CERVICAM) and the NGS project on solid tumours (ROM).
4. Optimization of single-cell RNA sequencing in tissue fixed in formalin and included in paraffin.
5. Participation in collaborative networks for cancer research framed within CIBERONC

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	71	664,00	10,38	61	86	28	39
	171	1339,54	7,38	131	77	48	28

Biomarkers and Personalized Approach to Cancer Group (BioPac)



GROUP COMPOSITION

Head

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Ainara Soria Rivas  
Diego Navarro Vera  
Emma Barreto Melián  
Federico Longo Muñoz  
Jorge Melones Herrero

Jorge Juan Villalón López  
Juan Carlos López Gil  
Laura Ruiz Cañas  
María del Carmen Calés Bourdet  
María Reyes Ferreiro Monteagudo  
Mercedes Rodríguez Garrote  
Patricia Delgado Aliseda  
Sofía Figueiras Vilariño  
Sonia Alcalá Sánchez



LOCATION

School of Medicine. Laboratory B17  
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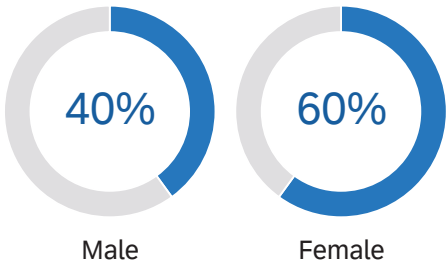


KEY WORDS

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



BREAKDOWN BY GENDER



### Biomarkers and Personalized Approach to Cancer Group (BioPac)

#### NETWORKS AND ALLIANCES

- CIBER for Cancer
- CIBER for Rare Diseases
- Pancreatic Cancer Europe
- Hub Salud CIVIS, a European Civic University
- The Pancreatic Cancer Early Detection Consortium (PRECEDE)
- COST Action CA21116: TRANSPAN
- Alliance for Research in Pancreatic Cancer (ALIPANC)
- Spanish Society of Gastrointestinal Conditions (SEPD)
- Group for Gastrointestinal Tumour Treatment (TTD)



#### LINES

- Identification and characterization of new biomarkers for early cancer detection, response to therapy, and detection of cancer stem cells in different solid tumours.
- Development of liquid biopsy platforms for the isolation of circulating cancer stem cells for their characterisation and/or free circulating free tumour DNA as a marker for early cancer detection.
- Management of the National Registry of Familial Pancreatic Cancer (PanGen-Fam), with the biobank of samples and associated clinical data for phenotypical and molecular characterization of families.
- Management of the screening program for high-risk persons, and development of new techniques and approaches for image analysis (e.g. radiomics) for early detection.
- Identification of new genes, pathways and/or variables (i.e. potentially pathogenic mutations) associated with risk of cancer (e.g. pancreatic, gastric, colorectal, glioblastoma and oligodendrogliomas) through omic approaches, and their exploitation in personalized medicine. Study of the deregulation of genetic expression in the abovementioned tumours.
- Characterization of the cell niche and the tumoral microenvironment, with particular attention to immunity cell infiltrates, such as tumour-associated macrophages (TAM).
- Development of new Biomodels and in vitro and in vivo platforms to test and discover new therapies, such as metallodrugs, nanotechnology, siRNAs, and anti-CSC agents. To promote the translation of new therapies into clinical practice, and to participate in clinical trials with a translational component.

#### STRATEGIC OBJECTIVES

- To develop new technologies and systems for personalized medicine, focused on the identification of drugs selected according to tumour characteristics, biomarkers, and/or cancer stem cells as universal target for aggressive tumours.
- To actively participate in national and international networks and projects in the cancer area, with focus on tumour biology, cancer stem cells, tumour immune microenvironment, and preclinical cancer models such as patient-derived xenografts (PDX).
- To reinforce 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 European level, representing an essential reference framework in cancer-based studies.



Biomarkers and Personalized Approach to Cancer Group (BioPac)

ACTIVITY INDICATORS 2024

- 1 European project: PANCAID (HE)
- 4 competitive national public projects led: ISCIII, MICINN
- 3 competitive private projects
- 1 private project led
- 109 clinical trials led
- 4 competitive Human Resources contracts
- 40 publications
- IF: 285.30
- Publications in Q1: 25 (60%)
- Publications in D1: 11 (26%)
- 3 doctoral theses read
- 1 award
- Evaluators in public entities: 4 PIs
- Members of editorial boards: 3 PIs
- 5 visitors received with 14.4-month stay:
  - Acibadem University (Turkey)
  - Santiago de Compostela University
  - Francisco de Vitoria University
  - Polytechnic University of Valencia

MAJOR MILESTONES

1. **López JC, García S, Ruiz L, Navarro D, Palencia A, Giráldez A, Earl J, Dorado J, Gómez G, Monfort A, Alcalá S, Gaida MM, García S, Cabezas P, Batres S, Barreto E, Sánchez P, Vallespinós M, Ambler L, Lin ML, Aicher A, García García de Paredes A, de la Pinta C, Sanjuanbenito A, Ruz I, Rodríguez M, Guerra C, Carrato A, de Cárcer G, Sánchez L, Nombela C, Espinet E, Sanchez VJ, Heeschen C, Sainz BJR.** The Peptidoglycan Recognition Protein 1 confers immune evasive properties on pancreatic cancer stem cells. Gut. 2024;73(9): 1489 - 1508. DOI:10.1136/gutjnl-2023-330995.
2. SEOM Grant in the section for Medical Oncology research projects related to Nuclear Medicine: “Do radiopharmaceuticals play a diagnostic and therapeutic role in sarcoma?” PI: Dr. María Ángeles Vaz.
3. Award for the Best Project of Voluntary Work and Active Participation by the Spanish Group of Cancer Patients to Dr. María Reyes Ferreiro Monteagudo.
4. Seed-funding for Research Activities and African-European Collaboration, project “Advances in Medicinal Chemistry: New Approaches and Targeted Drug Delivery”. Africa-Europe Research Collaboration (2024) 10.000€ by CIVIS-4UA. PI. Dr. M Isabel Sánchez Pérez and Carmela Calés.
5. CanSERV European grant awarded: “Providing Cutting-Edge Cancer Research Services Across Europe” in the “Transnational Service Provision” call, to fund a unit associated with the development of the project “A multi-omic approach for the characterization and early detection of familial pancreatic cancer (PANomics)”.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	42	285,30	7,50	36	86	11	26
	84	645,34	9,72	77	92	25	30



GROUP COMPOSITION

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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

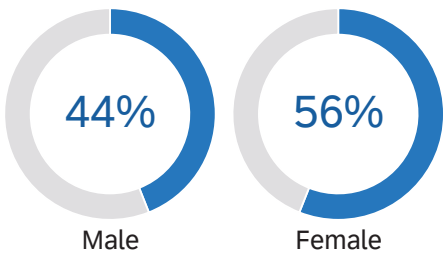


KEY WORDS

cell polarity, epithelium, intestines,  
morphogenesis, organoids, protein traffic,  
cancer



BREAKDOWN BY GENDER



Intestinal Morphogenesis and Homeostasis Group

NETWORKS AND ALLIANCES

- International Excellence Campus (CEI-UAM + CSIC)
- SPANISH Thematic Network for the Interaction between cell metabolism and microenvironment in homeostasis and diseases



LINES

- To characterize the role of lysosome-rich enterocytes (LRE) in the initial stages of development, metabolism, and effect on intestinal homeostasis.
- Cell strategy to improve drug absorption for cancer treatment.
- To characterize the role of B-cell immunometabolism in immune response.
- To characterize the role of smoothelin-like2 (smtnl2) in cytoskeletal reorganization and carcinoma progression in intestinal tissues.

STRATEGIC OBJECTIVES

- Addressing the mechanical response of intestinal cells and the orientation of the mitotic spindle with the aim of generating key information for CRC treatment.
- Analysis of the biochemical and biomechanical properties of epithelial organoids during intestinal development, and addressing their impact on cancer development and progression, by using the “organ-in-one-chip” organoid model.
- Gaining further knowledge about intestinal cells and their relation with autophagy, cell metabolism and paracellular communication, essential for intestinal development and homeostasis, and their associated conditions such as CRC.
- Exploration of the use of the high absorption capacity of LREs to facilitate the oral uptake of nanocarriers in order to contribute with new approaches for biologic drug administration through biological barriers such as the intestinal tract.
- Characterization of the role of metabolism as regulator for B-cell activation and differentiation in normal physiological conditions, in order to later understand its role in the condition and identify new biomarkers for the condition and potential therapeutic targets.

ACTIVITY INDICATORS 2024

- 2 competitive European projects led: H2020-MSCA- IF and HE-MSCA-DN
- 5 competitive national public projects: MICINN
- 3 competitive private projects led
- 5 competitive Human Resources contracts
- 2 publications
- IF: 16.60
- Publications in D1: 1 (50%)
- 2 doctoral theses supervised and read
- Evaluators for projects from national and international public agencies: 2 PIs

MAJOR MILESTONES

1. **Strengthening of the international positioning of the group:** “Epithelial Exchange Surfaces –From organizing principles to ex vivo disease models of the gatekeepers of the body (SurfEx)” led by Dr. Martín-Belmonte and funded by the EU (Horizon-MSCA-2022-DN -101119504) with a 4-year duration.
2. **Start of the competitive public project:** “Neonatal Intestinal Microenvironment: The Role of Enterocytes in Homeostasis”, led by Dr. Martín-Belmonte, funded by the MICINN (PID2023-151844OB-I00) with a 3-year duration.
3. **Coordination of the network for excellence:** “SPANISH Thematic Network for the Interaction between Cell Metabolism and Microenvironment in Homeostasis and Diseases”, coordinated by Dr. Martín Belmonte, funded by the MICINN (RED2022-134927-T) with a 2-year duration.
4. **Two doctoral theses defended,** by doctoral research candidates (Gonzalo Herranz and Marta Iborra) and managers from the group, and with a distinction Cum Laude.
5. **Iborra M,** Ruiz J, Velasco de la Esperanza M, Estrada BS, Bovolenta ER, Cifuentes C, Prieto C, González T, García J, Rey MF, Rupérez FJ, Guerra M, Argüello RJ, Cogliati S, **Martín F, Martínez N.** Defective mitochondria remodelling in B cells leads to an aged immune response. Nat Commun. 2024;15(1): 2569 - 2569. DOI:10.1038/s41467-024-46763-1.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2022	1	7,50	7,50	1	100	0	0
2023	1	0,00	0,00	0	0	0	0
2024	2	16,60	8,30	2	100	1	50
	4	24,10	5,27	3	75	1	25





GROUP COMPOSITION

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Anabelle China Rodríguez  
Clara Sánchez Menéndez  
Claudia Núñez-Torrón Stock  
Fernando Martín Moro  
Gemma Moreno Jiménez  
Gerónimo Fernández Gómez-Chacón

Jesús Villarrubia Espinosa  
Juan Marquet Palomares  
Kyra Velázquez Kennedy  
María Concepción Tenorio Núñez  
María del Mar Meijón Ortigueira  
María Jesús Blanchard Rodríguez  
María Luisa Palacios Berraquero  
Miguel Piris Villaespesa  
Pilar Herrera Puente



LOCATION

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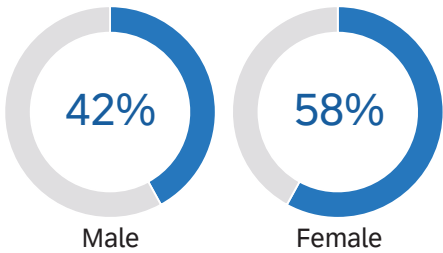


KEY WORDS

translational haematology,  
Oncohematology, immune reconstitution,  
cell therapy, stem cell transplant,  
myeloproliferative neoplasia,  
lymphoproliferative syndromes,  
coagulopathies, transfusion therapy



BREAKDOWN BY GENDER



## Translational Haematology

## NETWORKS AND ALLIANCES

- International Chronic Myeloid Leukemia Foundation (RiboRed)
- Spanish Group for Chronic Myeloid Leukemia
- Spanish Group for Philadelphia negative myeloproliferative neoplasms (GEMFIN)
- Clinic Hospital, Barcelona
- National Network for Cell Therapy



## LINES

- Study of the immune system in response to oncohematologic disease pathogens.
- Effect of the immune response against oncohematologic neoplasias and its modulation by new drugs.
- Cell therapy in patients undergoing stem cell transplant and non-neoplastic conditions.
- Study and prevention of cardiac dysfunction secondary to certain drugs.
- Search for factors predicting response in myeloproliferative neoplasias.
- Clinical and biological characterization (lymph node and bone marrow) of chronic B-lymphoproliferative syndromes.
- To implement genetic diagnostic testing in the diagnosis of red series conditions in order to determine phenotype-genotype associations.
- Development of diagnostic algorithms with serological and genetic tests that enable the resolution of complex immunohematologic problems in transfusion medicine.
- Study of the long-term side effects of conventional chemotherapy and new drugs.

## STRATEGIC OBJECTIVES

- To find new pathways involved in immune response against oncohematologic conditions and infections subject to therapeutic intervention.
- Study of therapeutic strategies in patients undergoing stem cell transplants, as optimization of the graft vs. disease effect.
- Development of cell therapy with clinical and research objectives, with application in medical and surgical specialties.
- To implement immunophenotypic diagnosis of hematologic neoplasias for the application of targeted therapies (individualized treatment) and the improvement of residual disease follow-up,
- Optimization of strategies in transfusion therapy.
- Integration of multidisciplinary teams in the management of frail patients with hematologic neoplasias.
- To encourage multidisciplinary teams for prevention and management of long-term complications caused by current treatments.
- To promote the participation and encourage leadership in cooperative groups and national and international "real world evidence" registries.
- Collection of resources from public and private organisms for the support and growth of the group.

## ACTIVITY INDICATORS 2024

- 4 competitive public projects led: ISCIII
- 2 private projects led
- 152 clinical trials led
- 46 publications
- IF: 349.30
- Publications in Q1: 35 (76%)
- Publications in D1: 12 (26%)
- 1 doctoral thesis supervised and read
- 5 awards
- Evaluators for projects by national and international institutions: 3 researchers
- Editorial board member: 1 PI
- 1 visitor received and 6-month stay:
  - o Polytechnic University of Madrid
- 4-month stay in a foreign center
  - o Universidad Politécnica de Madrid
- 4 meses de estancia en un centro extranjero:
  - o Memorial Sloan Kettering Cancer Center (USA)
- Impact on society: 14 haematologists received from Mexico (Preceptorship Visit)

## MAJOR MILESTONES

1. A new public project (AES24 (ISCIII) granted, of Dr. García Gutiérrez (PI24/00861), reinforcing the other four already initiated in the last years: Dr. Luna (PI23/01924), Dr. García Gutiérrez (PI21/00877), intensification AES contract of Dr. García Gutiérrez (INT23/00058) and FORTALECE - FAR IRYCIS (FORT23/00046).
2. Six (6) clinical trials initiated about CAR-T therapy both in benign conditions and in non-hematologic neoplasias.
3. Pérez L, de Paz R, Díaz R, Montero LFC, Payer ÁR, Sierra M, Marín FF, López RP, Cirici BX, Steegmann JL, Gómez MT, Martínez J, **García V**. Hepatotoxicity as dose-limiting toxicity of the combination of bosutinib and atezolizumab in patients with chronic myeloid leukemia. Results of the ZEROLMC study. Ann Hematol. 2024;103(10): 4045 - 4055. DOI:10.1007/s00277-024-05662-7.
4. Acknowledgement as one of the best abstracts in the National Congress of the Spanish Society of Haematology, in plenary session of the congress selecting the best 5 among over 1,000 abstracts submitted.
5. Mateos MV, Martínez J, Rodríguez P, González V, Gonzalez MS, Oriol A, Gutiérrez NC, Ríos R, Rosiñol L, Alvarez MA, Bargay J, Gonzalez AP, Alegre A, Escalante F, Iñigo MB, De La Rubia J, Teruel AI, de Arriba F, Palomera L, Hernández MT, **López J**, Reinoso M, García A, Ocio EM, Paiva B, Puig N, Cedena MT, Bladé J, Lahuerta JJ, San JF, Spanish Myeloma Group Curative Strategy for High-Risk Smoldering Myeloma: Carfilzomib, Lenalidomide, and Dexamethasone (KRd) Followed by Transplant, KRd Consolidation, and Rd Maintenance. J Clin Oncol. 2024;42(27): 3247 - 3256. DOI:10.1200/JCO.23.02771. IF: 24; Altmetrics 36.



### Grupos de Investigación

Nanomaterials for Bioimaging

Aptamers

Biomarkers and Therapeutic Targets

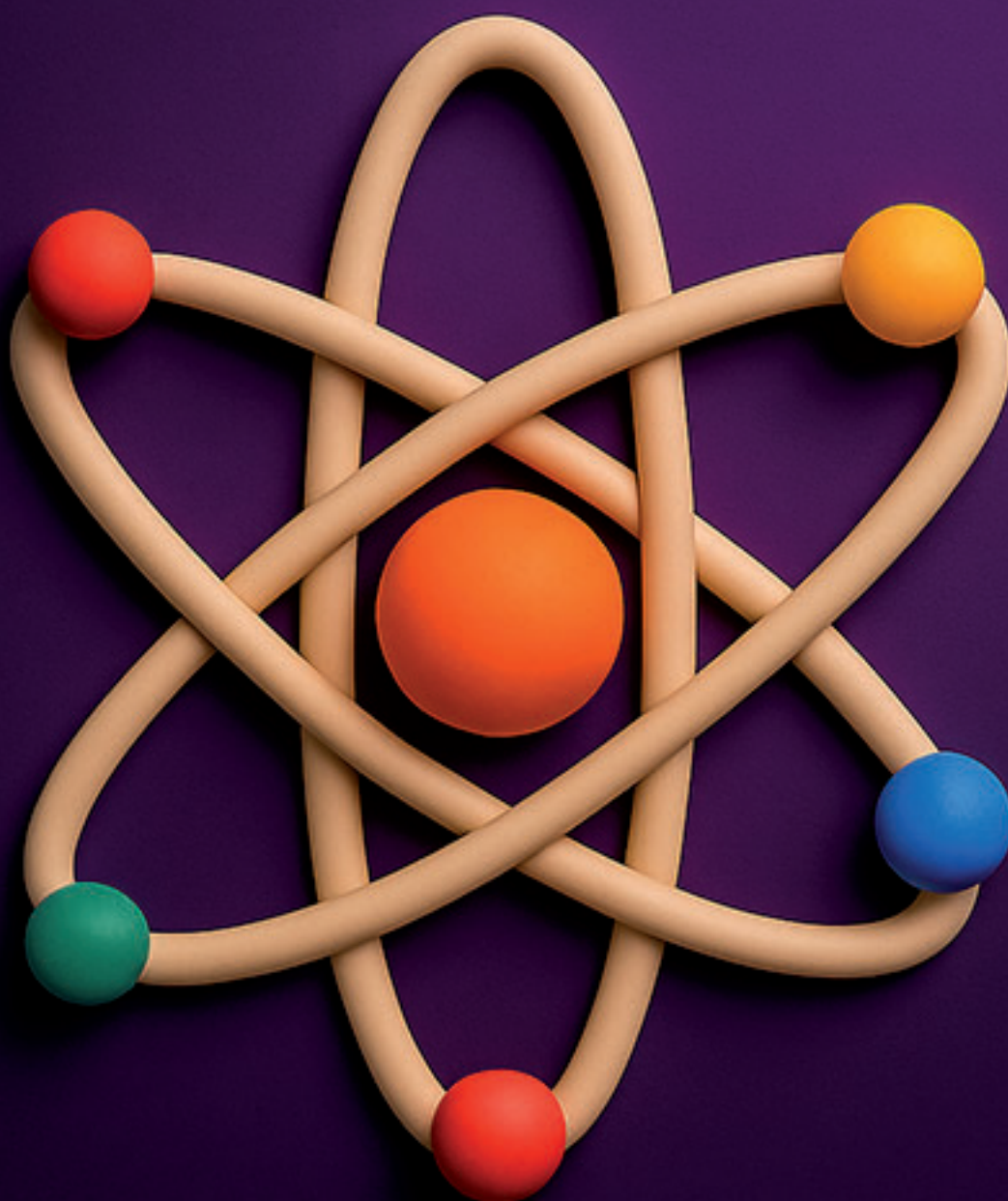
Tissue Engineering and Regenerative Medicine

Biomedical Research on Biomaterials and Healing (GIBBYC)

Biologic Chemistry

Dendrimers for Biomedical Applications

Biomedical Science and Data Engineering





# Area 4

## Tools for Advanced Medicine

21

### Funding and Scientific Production during the last five years

ACCUMULATED INCOME  
(private / public projects and clinical trials)

15M€ 

R&D&I PROJECTS  
AND INITIATIVES

379 

PUBLICATIONS

676 

PUBLICATIONS IN  
Q1&Q2

82%

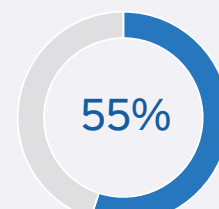
PUBLICATIONS  
with IRYCIS members as leaders

48%

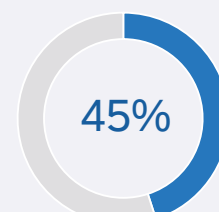
DOCTORAL THESES  
supervised and read

84

BREAKDOWN BY GENDER



Male



Female

### List of the five most relevant publications in the annuity

Muñoz S, Heredero I, **de la Mata FJ, García S**. Bifunctional Carbosilane Dendrimers for the Design of Multipurpose Hydrogels with Antibacterial Action. *Chem Mater*. 2024;36(1): 266 - 274. DOI:10.1021/acs.chemmater.3c02027.

**Ortega MA, García LM, Fraile O, Pekarek T, García C, Buján J, Pekarek L, Barrena S, Gragera R, Rodríguez IC, Rodríguez P, López L, Díaz R, Álvarez M, García N, De León JA, Bravo C, Saez MA**. Oxidative Stress, Lipid Peroxidation and Ferroptosis Are Major Pathophysiological Signatures in the Placental Tissue of Women with Late-Onset Preeclampsia. *Antioxidants (Basel)*. 2024;13(5): 591. DOI:10.3390/antiox13050591.

**Figuer A, Santos FM, Ciordia S, Valera G, Martín B, Hernández JP, Bodega G, Ceprián N, Ramírez R, Carracedo J, Alique M**. Proteomic analysis of endothelial cells and extracellular vesicles in response to indoxyl sulfate: Mechanisms of endothelial dysfunction in chronic kidney disease. *Life Sci*. 2024;351: 122810 - 122810. DOI:10.1016/j.lfs.2024.122810.

**Pérez B, Benito S, Rivas C, Gómez V, García F, Pascual G**. Potentiality of Antibacterial Gels for the Prophylactic Coating of Hernia Repair Prosthetic Materials. *Gels*. 2024;10(11): 687. DOI:10.3390/gels10110687.

Humanes M, **Sans E, Virumbrales C, Milián A, Sanz R, García P, Fernández MA**. Selective Synthesis of Boron-Functionalized Indenes and Benzofulvenes by BCl<sub>3</sub>-Promoted Cyclizations of ortho-Alkynylstyrenes. *Org. Lett*. 2024;26(31): 6568 - 6573. DOI:10.1021/acs.orglett.4c02092.

Area 4

Tools for Advanced Medicine

Nanomaterials for Bioimaging Group



GROUP COMPOSITION

<b>Head</b> Daniel Jaque García University Lecturer daniel.jaque@uam.es	Francisco Sanz Rodríguez Jorge Rubio Retama Juan Pedro Cascales Sandoval Marco Laurenti Miriam Granado García Nuria Fernández Monsalve	<b>Collaborating Staff</b> Álvaro Artiga Folch Dirk Ortgies Ely Anira Bravo Tapia Erving C. Ximendes José García Solé José Lifante Cañavete Lyan Ming Luis Monge Sánchez María Carmen Iglesias de la Cruz
<b>Principal Investigators</b> Daniel Jaque García Antonio Benayas Hernández Diego Méndez González Emma Martín Rodríguez		



LOCATION

Autonomous University of Madrid  
Department of Materials Physics  
School of Sciences  
Physiology Department  
School of Medicine

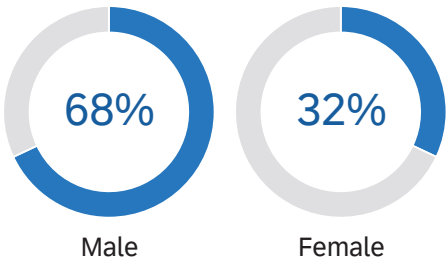


KEY WORDS

biomedicine, nanotechnology, bioimaging



BREAKDOWN BY GENDER



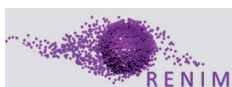
# Area 4

## Tools for Advanced Medicine

### Nanomaterials for Bioimaging Group

#### NETWORKS AND ALLIANCES

- 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, United Kingdom)
- National University of Singapore (Singapore)
- Université de Lyon (France)
- Shandong University (China)
- Université Grenoble Alpes and the CRNS (Grenoble, France)
- Royal Melbourne Institute of Technology (Australia)
- Institute of Sciences of Materials of Madrid, of the CSIC.
- La Laguna University.



#### LINES

- Development of new luminescent nanostructures in order to obtain high-penetration tridimensional images.
- Development of new luminescent nanostructures for the development of minimally invasive therapies.
- Development of new experimental bio-image systems for in vivo and in vitro applications with high penetration and minimal interaction.
- Development of new optic tools for handling individual cells in order to study their intracellular dynamics.
- Knowledge and prediction of toxicity events in luminescent nanoparticles.
- Synthesis of biocompatible nanoparticles for microRNAs delivery.

#### STRATEGIC OBJECTIVES

The strategy plan of the group is focused on translating all already known knowledges and technics for managing luminescent nanoparticles into areas of direct application in Biomedicine, by means of establishing solid and real collaborations with clinical groups

#### ACTIVITY INDICATORS 2024

- 12 competitive national projects: MICINN, CAM
- 7 competitive Human Resources contracts
- 9 publications
- IF: 47.90
- Publications in Q1: 5 (56%)
- Publications in D1: 1 (11%)
- 2 doctoral theses supervised and read
- 1 award
- Evaluators for public agencies: 1 PI
- Members of editorial boards: 4 researchers
- 7 months of stay in national centres:
  - Institute of Materials Science of Madrid ICMM-CSIC (Spain)
- 2 visitors and 9-month stay:
  - Quaid-I-Azam University of Islamabad (Pakistan)
  - National Polytechnic Institute (Mexico)

#### MAJOR MILESTONES

1. Appointment of Dr. José García Solé as Honorary Doctor.
2. 5 group researchers with current competitive Human Resources contracts (Juan de la Cierva, Ramón y Cajal, María Zambrano, CAM Talent Attraction).
3. 8 group researchers are PIs in a National Plan project (MICINN).
4. 2 young researchers from the group have a consolidation project.
5. Wang P, Morales R, Cervás G, Hernández A, Paris M, Jiménez de Aberasturi D, de Isidro AI, Torres A, Palomares FJ, García S, Sousa CT, Espinosa A, Telle HH, Ortigies DH, Vega V, Cabanillas J, Martín E, Resch U, David K, Juárez BH. The role of temperature in the photoluminescence quantum yield (PLQY) of Ag(2)S-based nanocrystals. Mater. Horizons. 2024;11(23): 6158 - 6168. DOI:10.1039/d4mh01016g.

#### BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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	10,66	13	87	6	40
2024	9	47,90	5,32	7	78	1	11
	73	737,17	9,95	63	86	27	37



Area 4

Tools for Advanced Medicine

Aptamers Group



GROUP COMPOSITION

Head

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Senior Investigator

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María Elena Martín Palma

Collaborating Staff

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Celia Pinto Díez

Gerónimo Fernández Gómez-Chacón

Laura Herráiz Benítez

Ignacio Iturrieta Zuazo

Juan Manuel Gómez Hernández

Mariana Fuentes-Quintana Miralles

Marta García Hernández

María Isabel Pérez Morgado

María del Val Toledo Lobo

Manuel Pascual Mellado

Raquel Ferreras Martín

Silvia Sacristán López



LOCATION

Aptamers Lab

1st floor - Right

Ramón y Cajal University Hospital

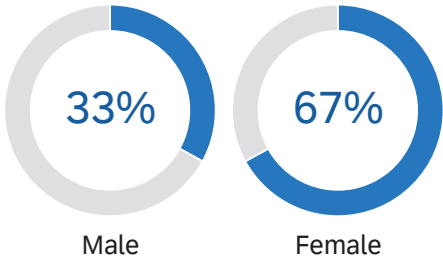


KEY WORDS

aptamer, diagnosis, MNK, therapy



BREAKDOWN BY GENDER



#### NETWORKS AND ALLIANCES

- Aptus Biotech
- RiboRed
- Iberoamerican Network for Aptamers (REDIBA)
- Participation in the Aptagastro Consortium: MINECO-ISCIII\_FIBIO- HRC



#### STRATEGIC OBJECTIVES

- Development of detection systems based on aptamer technology and oriented towards an improvement in the diagnosis and/or prognosis of different conditions, which will allow better patient care and cost savings for the health system.
- Development of aptamers against targets involved in different conditions (cancer, infections, etc.) for their use in the design of drugs representing new therapeutic options for patients.
- Identification of new therapeutic targets in cancer

#### LINES

- Development of aptamers with therapeutic potential.
- Development of aptamer-based diagnostic systems.
- Involvement of the Mnk1b kinase in tumorigenesis.

#### ACTIVITY INDICATORS 2024

- 1 European competitive project: ABSarbo (HE)
- 6 competitive public projects: ISCIII, MICINN
- 2 private projects led
- 2 competitive Human Resources contracts
- 11 publications
- IF: 44.10
- Publications in Q1: 7 (64%)
- Publications in D1: 1 (9%)
- Evaluators for projects by national institutions: 2 PIs
- Member of Editorial board: 1 PI
- 3 visitors received and 6-month stay:
  - Colombian Institute of Tropical Medicine (Colombia)
  - Peruvian University of Applied Sciences (Peru)
  - National Microbiology Centre (Spain)
- One molecule under clinical trial for stroke treatment with 151 patients
- 9 active families of patents with priority patent:
  - P201430955 "TLR4-specific aptamers and their potential use for stroke treatment". National phase entry in 15 countries.
  - P201930524 "FPR2-receptor agonist aptamers" with PCT/ES2020/070378 and national phase entry in U.S.A. and Europe.
  - EP 18 382 888.8 "Aptamers specific against human MNK1 protein and their use in detection method for MNK1 and MNK1-inhibitor" with PCT/ EP2019/083547 and national phase entry in Europe and U.S.A.
  - EP17382610 "MAFG as a potential therapeutic target to restore chemosensitivity in platinum-resistant cancer cells" with PCT/EP2018/06815 extended in U.S.A. and Europe.
  - EP22382616.5 "DNA aptamer conjugates recognizing and degrading coronavirus proteins"
  - EP22382617.3 "DNA aptamer conjugates recognizing and degrading coronavirus proteins"
  - EP24382574.2 "OR2AT4 receptor agonist aptamers and uses thereof"
  - EP24382947.0 "Aptamer, or pharmaceutical composition thereof, for use in the treatment of pancreatic cancer"
  - EP24382233.5 "Nucleic acid aptamer for treatment of liver cancer"

# Area 4

## Tools for Advanced Medicine

### Aptamers Group

#### MAJOR MILESTONES

1. Implementation of two new AES2023 (ISCIII) research projects: call for R&D&I in Health (PI23/00539) project, and Fortalece (FORT23/00046) project, both led by Dr. Víctor M. González.
2. One project granted in the 2024 Mutua Madrileña Foundation call to Dr. Ignacio Iturrieta, with a Rio Hortega contract in our research group.
3. Publication of 11 articles in international journals, and multiple presentations in national and international congresses.
4. Signature of 4 research projects by the Aptamers UCA of IRYCIS, formed on the basis of the research group, and providing service of aptamers selection to third parties, with a research group and three biotechnological companies.
5. Appointment of Dr. Víctor M. González as Deputy Scientific Director of IRYCIS.

#### BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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	13
2023	12	79,92	7,27	11	92	1	8
2024	11	44,10	4,01	9	82	1	9
	43	237,71	5,78	37	86	5	13



# Area 4

## Tools for Advanced Medicine

### Biomarkers and Therapeutic Targets Group



#### GROUP COMPOSITION

##### Head

María Laura García Bermejo  
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##### Principal Investigators

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Ángel Candela Toha  
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Fernando Liaño García  
Konstantinos Stamatakis Andriani  
Jaime Díaz Poveda  
Javier del Moral Salmoral  
Julián Prieto Velasco

Laura Romero Crespo  
Lorena Crespo Toro  
Manuel Collado Valero  
Marta Alvarado Belinchón  
Miren Edurne Ramos Muñoz  
Sandra Villatoro Gómez



##### LOCATION

7th Floor - Right  
Ramón y Cajal University Hospital

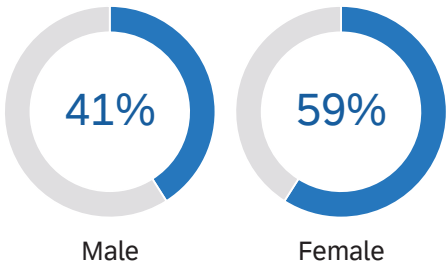


##### KEY WORDS

biomarkers, therapeutic targets, miRNAs,  
lncRNAs, personalized medicine, cell  
therapy, artificial intelligence



##### BREAKDOWN BY GENDER



# Area 4

## Tools for Advanced Medicine

### Biomarkers and Therapeutic Targets Group

#### NETWORKS AND ALLIANCES

- RICORS2040- Kidney diseases
- COST Action EU-CardioRNA
- EATRIS-European Infrastructure for Translational Medicine
- ReTBioH- Network of Biobanks
- 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 Renal Failure and its impact on cardiovascular conditions.
- PEOF: Patient Engagement Open Forum



#### LINES

- Mechanisms for renal fibrosis development. New biomarkers and targets for therapeutic action in chronic renal disease.
- Mechanisms for macrophage polarization in nephropathies: potential new therapeutic approaches in renal inflammation.
- Physiopathological mechanisms in minority nephropathies: characterization and new tools for patient stratification.
- Physiopathological mechanisms and new biomarkers useful in renal cancer: patient stratification for personalized therapy.
- miRNAs and incRNAs as new biomarkers for diagnosis and prognosis in pancreatic cancer.
- New targets for therapeutic action in pancreatic cancer based on tumour subtype: KIF3B.
- miRNAs as biomarkers in heart failure and mechanisms for cardiac remodelling: cardio-renal axis.
- miRNAs as stratification tools and new targets for therapeutic action in colorectal cancer.

#### STRATEGIC OBJECTIVES

Generation and validation of tools useful for diagnosis, prognosis, stratification and treatment of patients in different conditions.

#### ACTIVITY INDICATORS 2024

- 3 European projects: EATRIS-Connect (HE), REMEDI4ALL (HE), EUGLOH 2.0 (HE)
- 6 competitive public projects led: ISCIII, CAM and MICINN
- 5 private projects led
- 2 clinical trials led
- 1 competitive Human Resources contract
- 9 publications
- IF: 65.00
- Publications in Q1: 3 (33%)
- Publications in D1: 2 (22%)
- Project evaluators: 3 PIs
- Members of editorial boards: 2 PIs
- 2 patent families:
  - 1 international application (U.S.A. and Europe) for a patent protecting miR127 as a new therapeutic target in Chronic Renal Disease (European Application 16382399.0)
  - 1 application for European patent: EP22383047.2, protecting microRNAs in colorectal cancer with application PCT/EP2023/080239
- 2 transfer agreements with companies
- 6 visitors received and 12.8 months of stay:
  - Polytechnic University of Madrid (Spain)

Tools for Advanced Medicine

Biomarkers and Therapeutic Targets Group

MAJOR MILESTONES

- 1. Biomarkers and new therapies for gastrointestinal tumours: i) collaboration with AMADIX for a diagnostic kit for pancreatic cancer, RETOS-Collaboration); ii) biomarkers for response in drug repositioning for this tumour (REMEDI4ALL); iii) multimodal prognostic biomarkers (miRAmut) in colorectal cancer, including radiomics markers, in collaboration with Quibim (DTS Project); iv) European positioning in tools for diagnosis and for identification of population at risk in these tumours, through the development and use of Trustworthy Artificial Intelligence tools. v) IRYCIS 2030 MISSION for the development and efficiency of NK-CART cells in colorectal cancer.
- 2. Biomarkers useful for personalized medicine in clear cell renal carcinoma i) Identification of molecular signatures including noncoding RNAs and radiomics parameters predicting response to the new treatment lines in this tumour setting. 2ª ISCIII project (consecutive). ii) Doctoral thesis (FI22/00312). iii) Consolidation as an expert group in radiobiology at national and European level through collaboration with ESTRO (European Society for Radiotherapy and Oncology). iv) Introduction of new transcriptomic methodologies (spatial transcriptomics) with a competitive European project (CANSERV).
- 3. European group of reference in multiomic and multimodal biomarkers, leading to the generation of Trustworthy Artificial Intelligence tools with clinical applicability, through national and European projects such as EATRIS Plus and EATRIS Connect, with leadership in the generation of tools such as MultiomicToolBox (<https://motbx.eatris.eu/>) or the digital hub.
- 4. Group of reference in drug repositioning and description of orphan drugs, through European initiatives and projects such as REMEDI4ALL, in collaboration with policy makers (European Commission), regulating agencies (EMA), and patient associations (PEOF, EURORDIS, POP) in the context of tumours and minority renal conditions.
- 5. Scientific direction of the Spanish node of the EATRIS Translational Medicine Infrastructure: European leadership and positioning of the Spanish node in EATRIS formed by 33 institutions, leadership in national and European initiatives for “Citizen and patient participation”, “Climate change and health”, and “Digital transformation of health systems”.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

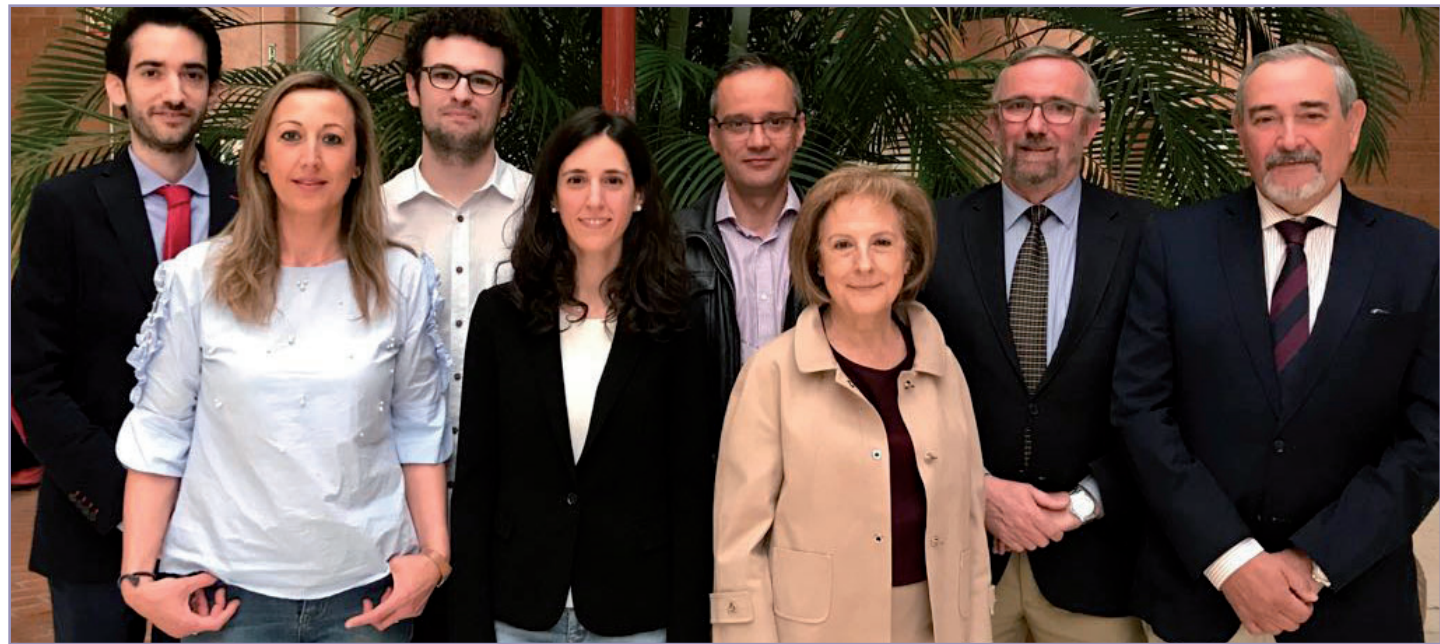
	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	14	77,19	12,87	11	79	4	29
2021	18	93,99	15,67	14	78	3	17
2022	13	106,48	8,19	12	92	3	23
2023	17	107,12	7,14	13	76	4	24
2024	9	65,00	10,83	6	67	2	22
	71	449,78	10,94	56	79	16	23



# Area 4

## Tools for Advanced Medicine

### Tissue Engineering and Regenerative Medicine



#### GROUP COMPOSITION

##### Head

Julia Buján Varela  
Relationship Manager with Health  
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Natalio García Honduvilla

##### Collaborating Staff

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Basilio de la Torre Escuredo  
Bianca Lago Beack  
Diego de León Oliva  
Diego Liviu Boaru Boaru  
Eduardo Sánchez-Jáuregui Alpañés  
Fernando Almeida Parra  
Fernando Ruiz Grande  
Ignacio García-Tuñón Llanio  
Julio Jesús Acero Sanz  
Laura López González  
Leonel Pekarek  
Lorenzo Mauricio Hernández Fernández

Loreto Barrios Rodríguez  
Luis Alberto González Guijarro  
Luis María García-Puente Mesa  
María del Mar Royuela García  
Miguel Ángel Ortega Núñez  
Miguel Ángel Sáez García  
Óscar Fraile Martínez  
Patricia de Castro Martínez  
Patricia de Leyva Moreno  
Pedro López Hervás  
Roberto Fernández-Baillo Gallego de la  
Sacristana  
Salud Soledad Aguado Henche  
Santiago Coca Menchero  
Silvestra Barrena Blázquez



#### LOCATION

Department of Medicine and Medical  
Specialties  
Medicine and Health Sciences Building  
University of Alcalá  
A-2 Km 33.600  
28805 Alcalá de Henares (Madrid)

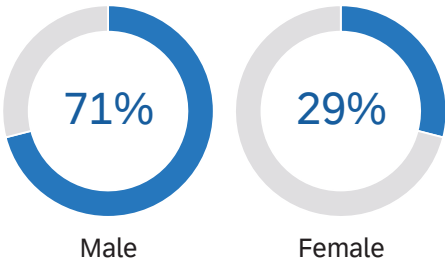


#### KEY WORDS

tissue engineering, regenerative medicine,  
damage-repair, ageing, biomaterials



#### BREAKDOWN BY GENDER



NETWORKS AND ALLIANCES

- CIBER for Liver and Digestive Diseases



ACTIVITY INDICATORS 2024

- 1 competitive public project led: ISCIII
- 5 private projects led
- 2 clinical trials led
- 3 competitive Human Resources contracts
- 47 publications
- IF: 184.90
- Publications in Q1: 26 (55%)
- Publications in D1: 5 (11%)
- 11 doctoral theses supervised and read
- 1 acknowledgement to a group member
- Evaluators in international public agencies: 2 researchers
- Evaluators in national public agencies: 3 researchers
- Members of editorial boards: 2 researchers

LINES

- Development and study of experimental models for tissue repair-regeneration.
- Study of the process of ageing and tissue degeneration and its clinical consequences.
- Development, study and use of biomaterials as tissue replacements.

MAJOR MILESTONES

- Application for European patent (EP23382390.5) “Method for monitoring the spatial deviation with respect to a planned surgical procedure” con PCT/EP2024/061573.
- Consolidation of the MITIC-CM Consortium of the Program of R&D activities in Biomedicine of the Community of Madrid (B2022/BMD-7321).
- In total, 11 doctoral theses supervised, which strengthens the commitment, impact and influence of the group with training and academic development. This effort has been acknowledged through a prestigious award for excellence in the Supervision of Doctoral Theses.
- Participation and leadership in the MADRIDNIGHT Program: “Researchers and citizens: facing together the European challenges”.
- High-impact results of the public project PI21/01244 with the publication: Muñoz-Chápuli Gutiérrez M, Prat AS, Vila AD, Claverol MB, Martínez PP, Recarte PP, Benítez MV, García CA, Muñoz EC, Navarro M, Navarro PG, **Álvarez-Mon M, Ortega MA**, de León-Luís J. Post-COVID-19 condition in pregnant and postpartum women: a long-term follow-up, observational prospective study. EclinicalMedicine. 2024 5;67:102398. doi: 10.1016/j.eclinm.2023.102398.

STRATEGIC OBJECTIVES

- To generate and disseminate knowledge in the research lines through the development of public and private projects and contracts.
- To promote interest and critical mass in these areas through training for research and technical staff.
- To increase the presence of researchers in international networks and European projects through collaboration with national and international groups.

BIBLIOMETRICS 2020-2024

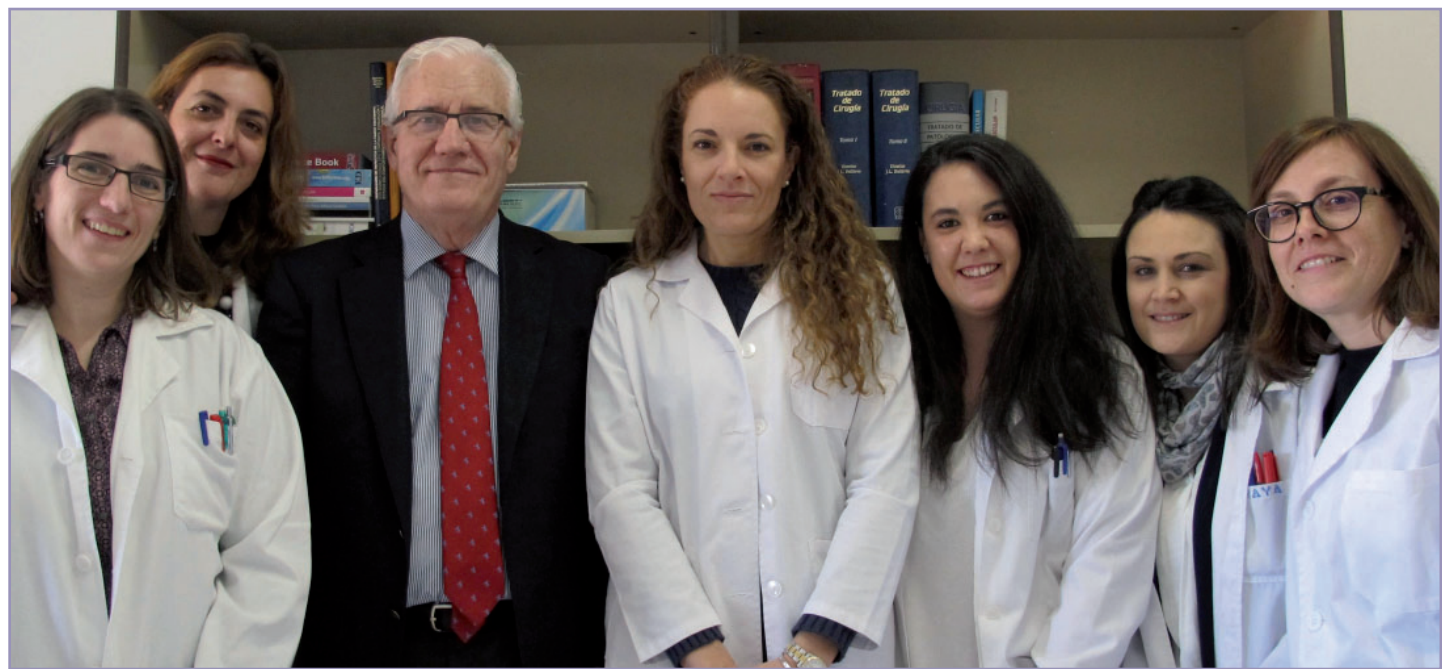
(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	24	66,94	3,04	14	58	0	0
2021	52	212,05	4,16	44	85	3	6
2022	53	243,54	4,60	45	85	2	4
2023	55	277,97	4,60	44	80	10	18
2024	47	184,90	4,20	42	89	5	11
	231	985,40	4,12	189	82	20	9

# Area 4

## Tools for Advanced Medicine

### Biomedical Research Group on Biomaterials and Healing (GIBBYC)



#### GROUP COMPOSITION

##### Head

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Juan Manuel Bellón Caneiro

##### Collaborating Staff

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Francisca García-Moreno Nisa  
Celia Rivas Santos  
Marta Rodríguez Mancheño  
Manuela Rodríguez Sánchez



#### LOCATION

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Specialties and Department of Surgery,  
Medical and Social Sciences.  
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School of Medicine and Health Sciences.  
University of Alcalá.  
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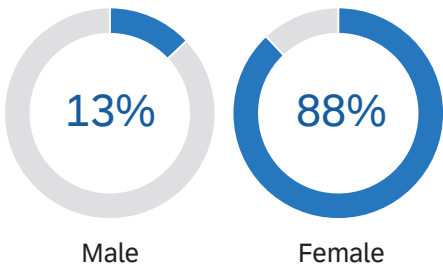


#### KEY WORDS

soft tissue damage-repair, abdominal  
wall, hernia formation, biomaterials,  
new prosthetic designs, prevention  
of infection, tissue adhesives, skin,  
cutaneous lesions, wound healing, animal  
models



#### BREAKDOWN BY GENDER





# Area 4

## Tools for Advanced Medicine

### Biomedical Research Group on Biomaterials and Healing (GIBBYC)

#### NETWORKS AND ALLIANCES

- CIBER for Bioengineering, Biomaterials and Nanomedicine.
- NANBIOSIS – Unique scientific and technical infrastructure for production and characterisation of nanoparticles, biomaterials, and systems in biomedicine.
- AO Research Institute, AO Foundation Davos
- Technical University of Viena (TU Wien)
- French Institute of Health and Medical Research
- CovidSurg Collaborative – International Platform
- Institute for Science and Technology of Polymers-CSIC
- University of Zaragoza
- Advanced Research Lance with Tridimensional Printing -UPM
- NanoBioCel – University of the Basque Country
- Bioengineering Institute of Catalonia (BIMPS-IBEC)
- Institute of Medical Chemistry-CSIC
- ESTES SnapAppy
- MANCTRA-1



UNIVERSIDAD  
POLITÉCNICA  
DE MADRID



#### LINES

- Damage-repair of abdominal wall defects with prosthetic materials, in presence or absence of bacterial infection.
- Cutaneous healing in normal and compromised tissue repair models, and application of treatments for an improved wound closure.

#### STRATEGIC OBJECTIVES

- Development, analysis, and preclinical validation of new prosthetic materials for hernia repair and last-generation fixing methods.
- Study of cutaneous healing and preclinical evaluation of the effect of different treatments on the evolution of skin lesions.
- Design and validation of therapeutic and preventive strategies for the optimization of antimicrobial use in the treatment of prosthetic and skin infections.
- Generation of knowledge and clinical translation, within our lines of research, through the development of public-private projects-contracts.
- Establishing synergies with national and international groups, in soft tissue damage-repair mechanisms, in order to promote collaboration and the exchange of knowledge and experiences.

#### ACTIVITY INDICATORS 2024

- 4 competitive national projects led: MICINN, CAM, UAH
- 1 competitive Human Resources contract
- 1 publication
- 1 doctoral thesis supervised and read
- Evaluators for projects in national and international agencies: 2 researchers
- Members of editorial boards: 4 group members
- 5 actions with impact on society: projects, workshops, participation in the Science and Innovation Week, Open Days.
- 1 visitor received and over 2.5 months of stay:
  - Superior Professional School of Madrid (EPSUM)

Tools for Advanced Medicine

Biomedical Research Group on Biomaterials and Healing (GIBBYC)

MAJOR MILESTONES

- 1. “Generation of Knowledge Projects”. Government Program to Promote Scientific-Technical Research and its Transfer, within the Government Plan for Scientific, Technical Research and Innovation 2021-2023. Ministry of Science, Innovation and Universities. **Innovative antimicrobial antiadherent covers to prevent infection in abdominal hernia repair: fighting against bacterial resistance** (PID2023-152295OB-I00).
- 2. “Research Projects of the UAH”. Grants for conducting Research Projects for the UAH, within the Program for R&D&I Grants, 2024 Call. Nanoparticles of **metal oxides modified with carbylane cationic dendritic systems as molecules for a cream with antibacterial properties** (PIUAH24/CCS-034).
- 3. **Pérez-Köhler B, Benito-Martínez S, Rivas-Santos C, Gómez-Gil V, García-Moreno F, Pascual G.** Potentiality of antibacterial gels for the prophylactic coating of hernia repair prosthetic materials. **Gels** 2024; **10(11): 687**. doi: 10.3390/gels10110687.
- 4. Doctoral thesis. **Diagnostic value of the serum levels of acute inflammatory markers as early indicators of post-gastrectomy anastomotic leaks**. Doctoral Candidate: Diego Ramos Rubio, obtaining a Cum Laude distinction.
- 5. Encouragement of education and scientific dissemination through **activities in the area of Research and Innovation Managers (RRI)** in the UAH and the CAM through workshops, monographics, conferences, and events for different audiences.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	1	5,00	5,00	1	100	0	0
	19	69,36	3,74	17	75	0	0

# Area 4

## Tools for Advanced Medicine

### Biologic Chemistry Group

21



#### GROUP COMPOSITION

##### Head

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Patricia García García

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Ana María Cuadro Palacios

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Álvaro González Molina  
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Guillermo Germán Otárola Tejada  
Javier García Marín  
José Antonio García García  
Jaime Mateos Gil  
Marta Durán Martínez  
Mercedes Zurro de la Fuente  
Rafael Martín Romero Segura  
Sergio Torres Oya



#### LOCATION

Department of Organic Chemistry and  
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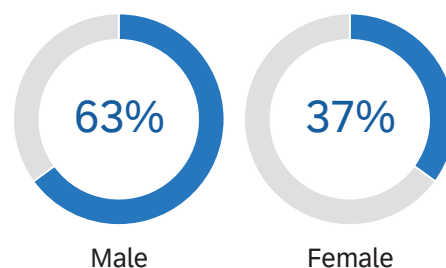


#### KEY WORDS

cellular staining and bioimage, chronic  
renal disease, bioactive azaheterocycles  
and azaborines, metal catalysis, PET  
reagents, peptides and PNAs



#### BREAKDOWN BY GENDER





## NETWORKS AND ALLIANCES

- RICORS2040- Kidney diseases
- Research network integrated into Organic Fibrosis
- INNOREN-CM S2022/BMD-7221



## LINES

- Strategies of Medical Chemistry in renal disease.
  - Development of new inhibitors on targets involved in renal disease (calpains, PTP1B and NIK).
  - Delivery of PNAs and drugs to the renal setting.
  - 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 cellular staining and bioimage.
- Development of synthetic methodology for carbo and heterocycles of biologic interest. Organocatalysis. Photocatalysis.
- Synthesis, reactivity and applications of BN-arenes.

## STRATEGIC OBJECTIVES

The research activity of the group is oriented to the design, synthesis and evaluation of small molecules with biologic interest or pharmacological activity. For this aim, we maintain collaborations with expert groups in validated and emergent targets for different therapeutic areas. The active research lines are focused on the development of new inhibitors for several targets involved in renal disease, on the search for reagents for cellular staining and bioimage, and on the development of synthetic methodology applicable to carbo and heterocycles of biologic interest.

## ACTIVITY INDICATORS 2024

- 11 competitive national public projects led: ISCIII, CAM, MICINN, UAH
- 11 competitive Human Resources contracts
- 12 publications
- IF: 115.50
- Publications in Q1: 10 (83%)
- Publications in D1: 6 (50%)
- 3 doctoral theses supervised and read
- 1 award
- Members of editorial boards: 2 PIs
- 1 application for patent (P202230612) through UAH- CSIC : "Solutions for peritoneal dialysis containing a natural flavonoid as osmotic agent" with PCT/ ES2023/070430
- 3 agreements of transfer to the pharmaceutical sector

## MAJOR MILESTONES

1. Humanes M, **Sans E**, Virumbrales C, **Milián A**, Sanz R, **García P, Fernández MA**. Selective Synthesis of Boron-Functionalized Indenes and Benzofulvenes by BCl(3)-Promoted Cyclizations of ortho-Alkynylstyrenes. *Org. Lett.* 2024;26(31): 6568 - 6573. DOI:10.1021/acs.orglett.4c02092.
2. **Manas C**, **Merino E**. Combined Gold and Photoredox Catalysis: Synthesis of 3-Alkenyl-2*H*-Indazoles from 2-Alkynylazobenzenes. *Adv. Synth. Catal.* 2024;DOI:10.1002/adsc.202400990.
3. **Tostado J**, **Milián A**, **Vaquero JJ**, **Fernández MA**. Synthesis of Seven- and Eight-Membered Rings by a Brønsted Acid Catalyzed Cationic Carbocyclization of Biphenyl Embedded Enynes. *Org. Lett.* 2024;26(16): 3343 - 3348. DOI:10.1021/acs.orglett.4c00647.
4. Hu Y, Hervieu C, **Merino E**, Nevado C. Asymmetric, Remote C(sp<sup>3</sup>) -H Arylation via Sulfinyl-Smiles Rearrangement. *Angew Chem Int Ed Engl.* 2024;63(17): e202319158. DOI:10.1002/anie.202319158.
5. Hervieu C, Kirillova MS, Hu Y, Cuesta S, **Merino E**, Nevado C. Chiral arylsulfinylamides as reagents for visible light-mediated asymmetric alkene aminoarylations. *Nat Chem.* 2024;16(4): 607 - 614. DOI:10.1038/s41557-023-01414-8.

## BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	12	115,50	9,62	12	100	6	50
	51	314,45	6,01	49	96	13	25

# Area 4

## Tools for Advanced Medicine

### Dendrimers for Biomedical Applications Group

21



#### GROUP COMPOSITION

##### Head

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##### Collaborating Staff

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Jesús Cano Sierra  
Judith Recio Ruíz

Laura Madrid González  
Marcos Hernando Gozalo  
Mercedes González Rico  
Óscar Barrios Gumiel  
Rafael Ramírez Chamond  
Samuel Takvor Mena  
Silvia Moreno Pinilla  
Silvia Muñoz Sánchez



#### LOCATION

Department of Organic Chemistry and  
Inorganic Chemistry  
School of Pharmacy University of Alcalá

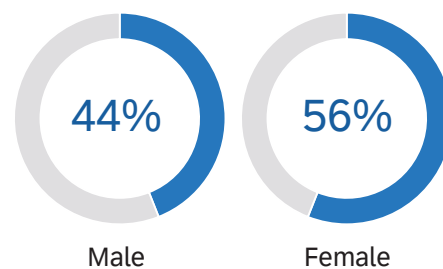


#### KEY WORDS

dendrimer, dendron, nanoparticle,  
hydrogels, carbosilane, biomedicine,  
cancer, HIV, microbial resistance



#### BREAKDOWN BY GENDER



## 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-type dendritic systems for their application as non-viral vectors of drugs or nucleic acids, or as therapeutic agents.
- Dendronization of molecules of pharmacological interest (drugs, peptides, antibodies, etc.)
- Preparation of metallodendritic systems of carbosilane nature, oriented towards bioorganic applications.
- Dendronization of nanostructured materials for their application in biomedicine.
- Synthesis of dendritic nanogels for drug encapsulation.
- Application of dendritic systems against microbial resistance.
- Application of dendritic systems against a virus, particularly HIV.
- Applications of dendritic systems against cancer.
- Applications of dendritic systems against neurodegenerative conditions.

#### STRATEGIC OBJECTIVES

- To synthesize a platform of dendritic systems with the ability to act as non-viral vectors in the transport of drugs and nucleic acids.
- To synthesize a platform of dendritic systems with therapeutic activity per se, against cancer, microbial conditions, or as antiviral agents.
- To establish collaborations with groups from the Institute which might have common research interests with our group.
- To attempt participation in the application for European projects for which the Institute might be eligible.

#### ACTIVITY INDICATORS 2024

- 16 competitive public projects: ISCIII, MICINN, CAM, CAM-UAH and UAH
- 1 private project led
- 4 competitive Human Resources contracts
- 19 publications
- IF: 98.60
- Publications in Q1: 18 (95 %)
- Publications in D1: 5 (26 %)
- Project evaluators: 4 PIs
- Members of editorial boards: 3 researchers
- 6 active patents:
  - **EP23383337**: Stable soft capsule preparations with solid fill for moisture sensitive active ingredients
  - **ES2940914B2**: Hydrogels with dendritic domains of carbosilane nature, their preparation and uses.
  - **ES2932900**: Extraction and purification of proteins with magnetic nanoparticles stabilized with carbosilane dendritic systems.
  - **P202430695**: System of nanoparticles containing one metal, covered by polyethylene glycol (PEG), which is functionalised with a polyphenol-type organic acid; manufacturing process and use of said system.
  - **EP24382398**: Stable soft capsule preparations with liquid fill for moisture sensitive active ingredients
  - **P202430766**: Dendrimers with carbosilane structure sensitive to pH variations, and their use as agents for transfection of nucleic acids in human cells
- 5-month stay in foreign centres:
  - University of Naples Federico II (Italy)
  - CIC nanoGUNE (Spain)



MAJOR MILESTONES

- 1. Development of the APTANANODEN project within the Fortalece IRYCIS – FAR project. Innovative administration methods for aptamers in targeted and combination therapies for pancreatic cancer.
- 2. Reincorporation of Dr. Natalia Sanz del Olmo through Beatriz Galindo Grants for attracting research talent. Dr. Sanz del Olmo has wide international experience in the area of macromolecular chemistry for biomedical applications.
- 3. Initiation of the competitive public project within the framework of the call “Projects of Scientific Research and Technology Transfer. 2023 Call” from the JCCM, titled: “Development of nanoplatforms based on polyphenols, terpenes, or other molecules with antioxidant and/or antimicrobial capacity for skin care”. Ref: SBPLY/23/180225/000109.
- 4. Incorporation of two pre-doctoral researchers through grants for pre-doctoral research staff in training of the Community of Madrid.
- 5. Awards to Young Research and Innovation by the Autonomous Regional Government of Castilla-La Mancha. Sciences Category: Dr. Sandra García-Gallego.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	19	98,60	5,47	19	100	5	26
	105	549,38	5,60	101	96	17	16

Area 4

Tools for Advanced Medicine

Science and Data Engineering Group



GROUP COMPOSITION

Responsible

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Marçal Mora Cantallops  
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Ángel Luis del Rey Mejías  
Diego Cárdenas Cuadrado  
Fernando Cruz Roldán  
Hilario Gómez Moreno

Jorge Lázaro Bailón  
Lino González García  
Manuel Blanco Velasco  
María Mercedes Rodríguez García  
Salvador Sánchez Alonso  
Samuel Santos Benito  
Sergio Moreno Solera



LOCATION

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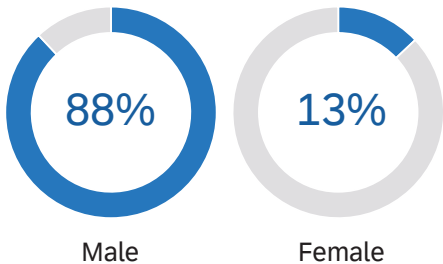


KEY WORDS

data science, data engineering, artificial intelligence, computer methods, trustworthy AI, big data



BREAKDOWN BY GENDER



# Area 4

## Tools for Advanced Medicine Science and Data Engineering Group

21

### NETWORKS AND ALLIANCES

- Z-inspection International Network

**Z-Inspection®**

### LINES

- Design and development of models and systems of artificial intelligence in biomedicine, including all domains, types of data and techniques.
- Use of computer and simulation methods applied to biomedicine.
- Biomedical data processing and data engineering in biomedicine.
- Technological tools and innovative methods for data collection, visualization, and systems to assist in decision-making.

### STRATEGIC OBJECTIVES

- To develop and apply data science methods and techniques to problems and challenges in biomedical research.
- To apply new or existing techniques or methods of Artificial Intelligence (AI) to biomedical problems and data, based on the outcomes of biomedical research.
- To apply and develop processing techniques for complex data and large volumes of biomedical data, including analysis of automatic learning with preservation of privacy.
- To design and evaluate the integration, interoperability and quality management of biomedical data, applying data engineering data.
- To evaluate and incorporate the Trustworthy AI approach in the design of systems and models, according to best practices and European regulation.

### ACTIVITY INDICATORS 2024

- 1 European competitive public project led: Tech Connect (HE)
- 2 national competitive public projects led: FECYT and UAH
- 1 private project led
- 2 doctoral theses supervised and read
- Evaluators for scientific articles and individual applications for research staff in different organisms: 2 PIs
- Members of editorial boards: 2 researchers

### MAJOR MILESTONES

1. Launch of the European competitive public project **TechConnect- 101177251** (HE) "Assessing and Strengthening Human-Tech Skill Complementarity in the Digital Landscape", within the HORIZON-CL2-2024- TRANSFORMATIONS-01-11 call.
2. Initiation of the competitive public project TRITON-DMP (MDG-23-11625) "Selection, test and implementation of tools for the management of data plans and research data catalogues" (FECYT).
3. Inclusion in the group of 3 researchers expert in biomedical signal from the UAH and one female researcher expert in anonymization for the "Data Science" Central Support Unit of IRYCIS.
4. Inclusion of the research group in the Z-inspection network of Trustworthy AI, to evaluate the reliability of AI systems and applications of real life.
5. First outcomes of the MISIÓN IRYCIS 2030 project for oral cancer detection with AI, with the Maxillofacial Surgery Unit (internal action).



### Research Groups

Lipid metabolism

Diabetes, Obesity and Human Reproduction Respiratory Diseases

Cardiovascular Diseases

Pediatrics

Metabolic-Endocrine, Digestive Surgery and Nutrition

Multisystemic Diseases

Liver and Digestive Diseases

Geriatrics

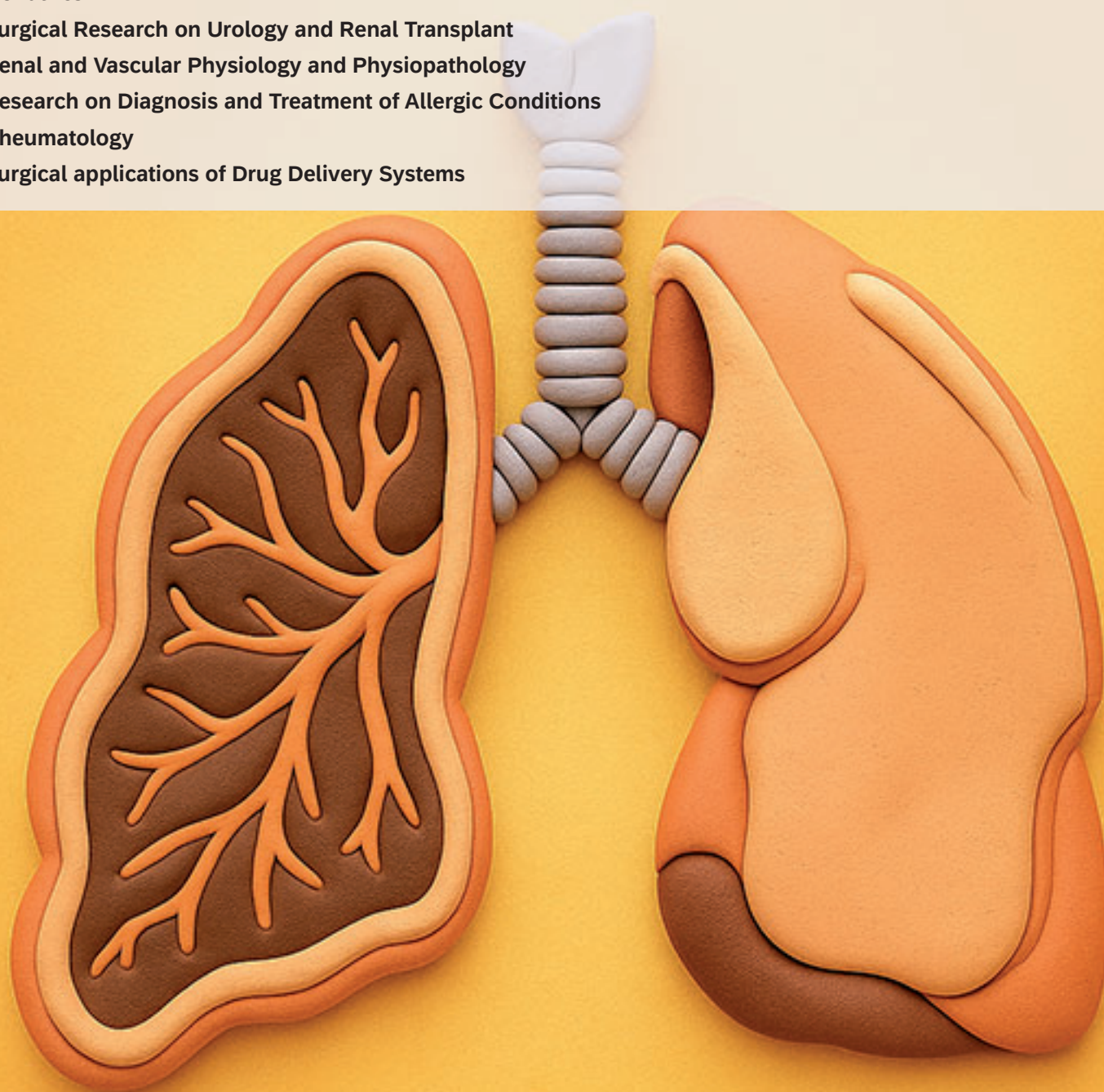
Surgical Research on Urology and Renal Transplant

Renal and Vascular Physiology and Physiopathology

Research on Diagnosis and Treatment of Allergic Conditions

Rheumatology

Surgical applications of Drug Delivery Systems



# Area 5

## Chronic Conditions and Surgery Research

Funding and Scientific Production during the last five years

ACCUMULATED INCOME  
(private / public projects and clinical trials)

15M€ 

R&D&I PROJECTS  
AND INITIATIVES

632 

PUBLICATIONS

2.215 

PUBLICATIONS IN  
Q1&Q2

70%

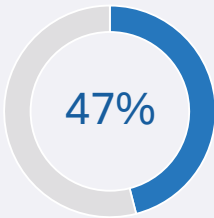
PUBLICATIONS with IRYCIS  
members as leaders

41%

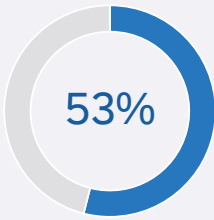
DOCTORAL THESES  
supervised and read

73

BREAKDOWN BY GENDER



Male



Female

### List of the five most relevant publications in the annuity

Sayer AA, Cooper R, Arai H, Cawthon PM, Ntsama MJ, Fielding RA, Grounds MD, Witham MD, **Cruz AJ**. Sarcopenia. Nat. Rev. Dis. Primers. 2024;10(1): 68 - 68. DOI:10.1038/s41572-024-00550-w.

**Téllez L**, Rincón D, Payancé A, Jaillais A, Lebray P, **Rodríguez de Santiago E**, Clemente A, Paradis V, Lefort B, **Garrido E**, Prieto R, Iserin L, Tallegas M, **Garrido E**, **Torres M**, **Muriel A**, **Perna C**, **Del Cerro MJ**, d'Alteroche L, Rautou PE, Bañares R, **Albillos A**, VALDIG C. Non-invasive assessment of severe liver fibrosis in patients with Fontan-associated liver disease: The VALDIG-EASL FONLIVER cohort. J Hepatol. 2024;DOI:10.1016/j.jhep.2024.09.005.

**Martín R**, Martínez L, Carvalho Á, Aceituno L, Cadahía V, Salcedo MM, Arias A, Pérez SL, Odriozola A, **Zamora J**, Blanes M, Len Ó, Benítez L, Campos I, González ML, Lázaro DR, **Fortún J**, Cuadrado A, **Carrasco NM**, Rodríguez M, Navascues C, Fábrega E, Serrano T, Mons VC, Rodríguez M, Castells L, Berenguer M, **Graus J**, **Albillos A**. Multidrug-resistant bacterial infections after liver transplantation: prevalence, impact, and risk factors. J Hepatol. 2024;80(6): 904 - 912. DOI:10.1016/j.jhep.2024.02.023.

**Domínguez LM**, Dobarro D, Iglesias C, Crespo MG, Raposeiras S, **Álvarez J**, Barreiro M, Muñoz I, **Sánchez A**, Íñiguez Á, **Zamorano JL**. Guideline-directed medical therapy for heart failure in arrhythmia-induced cardiomyopathy with improved left ventricular ejection fraction. Eur J Heart Fail. 2024;DOI:10.1002/ehj.3556.

**Álvarez J**, Lala A, Rivas M, **De Rueda C**, Brunjes D, Lozano S, **García C**, Mitter S, **Remior P**, **Jiménez M**, **Del Prado S**, Barghash M, **González E**, Ullman J, Cobo M, Segovia J, **Zamorano JL**, Pinney SP, Mancini D. Remote Dielectric Sensing Before and After Discharge in Patients With ADHF: The ReDS-SAFE HF Trial. JACC Heart Fail. 2024;12(4): 695 - 706. DOI:10.1016/j.jchf.2024.01.002.



Area 5

Chronic Conditions and Surgery Research

Lipid Metabolism Group



GROUP COMPOSITION

Head

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Diana María Arrebola Mesa  
Irene Chavarría Cubel  
Karla Belén Cevallos Ibarra  
Gema de la Peña Martín  
Miguel Ángel Lasunción Ripa  
Milagros Lerma Fernández  
Sara Poyatos Peláez  
Tamara Villanueva Blanco



LOCATION

Biochemistry-Research Lab  
1st Floor- Right  
Ramón y Cajal University Hospital

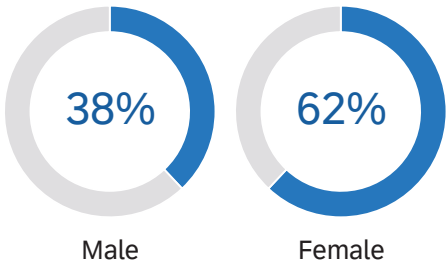


KEY WORDS

cholesterol, ceramides, lipid metabolism,  
cellular proliferation, food allergy,  
intracellular lipid traffic, male fertility,  
, HDL, genetic expression, lipidomics,  
NAFLD, selective estrogen receptors  
modulators (SERMs), cholesterol-lowering  
drugs



BREAKDOWN BY GENDER






Area 5

Chronic Conditions and Surgery Research

Lipid Metabolism Group

NETWORKS AND ALLIANCES

- Clinical Lipidomics Interest Group (CLIG-Trial) 

LINES

- Cholesterol actions upon cellular proliferation.
- Food allergies.
- Effect on drugs with amphiphilic amine nature upon lipid homeostasis.
- HDL functionality and their alterations.
- Regulation of the genetic expression in obesity and its association with lipid metabolism.
- Lipidomics applied to the study of metabolic alterations associated with the disease.

STRATEGIC OBJECTIVES

Study of the lipid metabolism, particularly of cholesterol, upon physiology and pathology, with the aim to determine the biologic role of certain lipids, identify their mechanisms, and design strategies with therapeutic potential

ACTIVITY INDICATORS 2024

- 2 competitive national public projects led: ISCIII
- 1 competitive Human Resources contract
- 12 publications
- IF: 67.20
- Publications in Q1: 10 (83%)
- Publications in D1: 2 (17%)
- Evaluators for national public agencies: 4 group members
- Members of editorial boards: 1 PI
- Actions with impact on society: participation in the European Research Night.
- 2 visitors received and 8 months of stay:
  - University of Alcalá

MAJOR MILESTONES

- Fluvastatin, a cholesterol biosynthesis inhibitor, boosts the inflammatory response of the macrophage to Mycobacterium tuberculosis H37Ra (**Montero MT**, Matilla J, **Bazán E**, **Reimers D**, **De Andrés A**, **Gonzalo R**, **Correa C**, Urbano F, **Gómez D**. Fluvastatin Converts Human Macrophages into Foam Cells with Increased Inflammatory Response to Inactivated Mycobacterium tuberculosis H37Ra. Cells. 2024;13(6): 536. DOI:10.3390/cells13060536).
- ML-SA1, aTRPML1 agonist, mitigates the intracellular lipid accumulation induced by antipsychotics in vitro by boosting the delivery of extracellular microvesicles (Chavarría-Cubel et al. In review at Biochim Biophys Acta, BBALIP-24-304).
- Characterization of a Vitamin E-derived compound that delays the progression of metabolic hepatic steatosis in an animal model (PI21/01173, ISCIII).
- Appointment as organizer (O.P.R.) and next venue for the 4th Conference of the International Lipidomics Society (ILS) Madrid 2025 (<https://lipidomicsociety.org/events/ils-2025/>).
- The determination of specific IgE and the Basophil Activation Test through microarrays are promising tools for diagnosing hypersensitivity reactions to platinum compounds (**Fernández C**, **Rita CG**, **Barra A**, **De La Hoz B**, **Roldán E**, **Pueyo C**, **Martínez J**, **Berges MP**. Specific IgE and Basophil Activation Test by Microarray: A Promising Tool for Diagnosis of Platinum Compound Hypersensitivity Reactions. Int J Mol Sci. 2024;25(7): 3890. DOI:10.3390/ijms25073890).

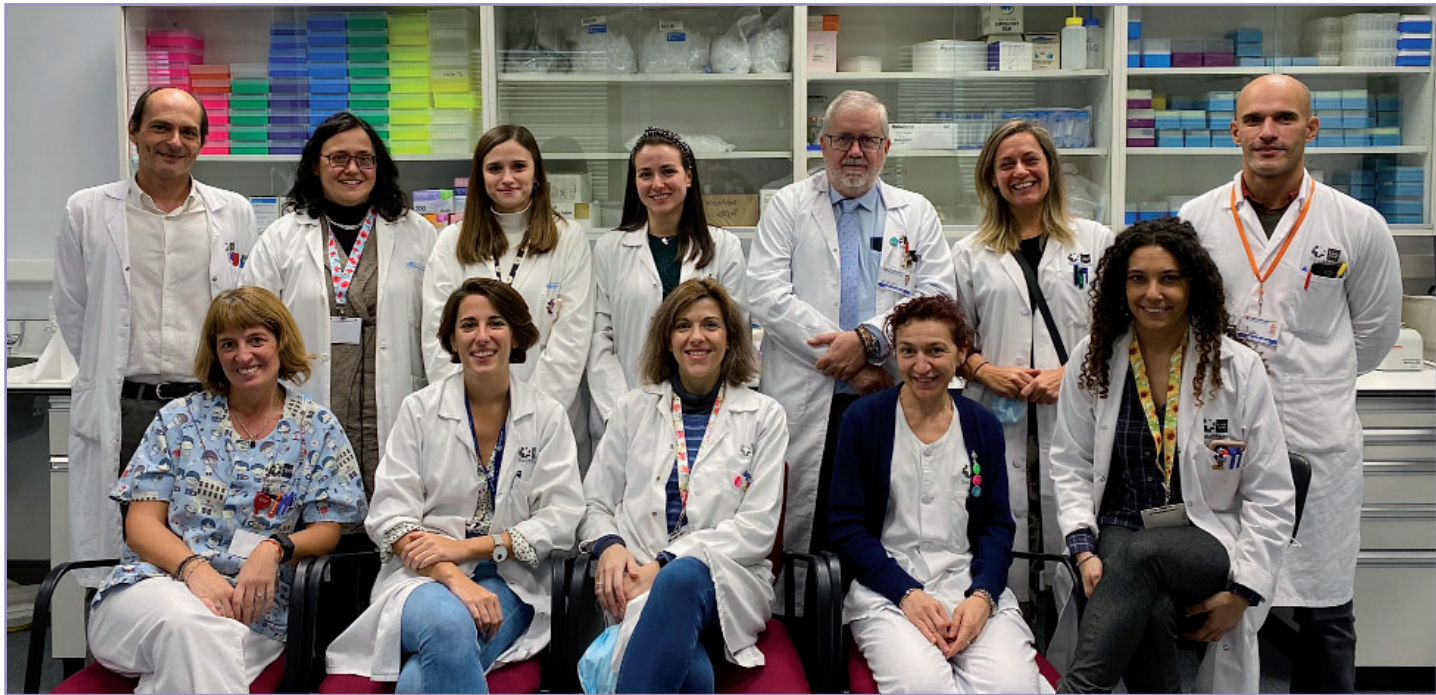
BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	12	67,20	6,11	11	92	2	17
	102	580,43	5,97	79	79	15	15

# Area 5

## Chronic Conditions and Surgery Research Diabetes, Obesity, and Human Reproduction Group



### GROUP COMPOSITION

#### Head

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#### Principal Investigators

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Manuel Luque Ramírez  
María Lía Nattero Chávez

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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

Lab for the Group of Research in  
Diabetes, Obesity, and Human  
Reproduction  
2nd Floor Centre / Back  
Ramón y Cajal University Hospital

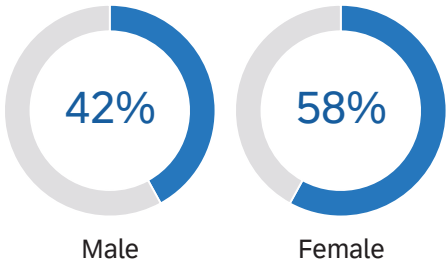


#### KEY WORDS

reproductive endocrinology, androgens,  
estrogens, diabetes, obesity, intermediary  
metabolism, polycystic ovary syndrome,  
hypogonadism



#### BREAKDOWN BY GENDER



Chronic Conditions and Surgery Research

Grupo Diabetes, Obesidad y Reproducción Humana

NETWORKS AND ALLIANCES

- CIBER for Diabetes and Metabolic Conditions associated.
- European Society of Endocrinology – Polycystic Ovary Syndrome Special Interest Group (PCOS SIG).
- Androgen Excess & Polycystic Ovary Syndrome Society (AE-PCOS).



LINES

- Evolution of female androgenic excess associated to obesity after weight loss.
- Evolution of male hypogonadism associated to obesity after weight loss.
- Influence of obesity and gonadal dysfunction upon markers for early cardiovascular condition and markers for cardiovascular risk.
- Obesity as a cardiovascular risk factor in women and men.
- Influence of the treatment for gonadal dysfunction in both genders (polycystic ovary syndrome or functional hypogonadotropic hypogonadism) upon visceral adiposity and metabolic dysfunction.
- Sexual dimorphism of cardiac autonomic neuropathy in subjects with Type 1 diabetes mellitus.

STRATEGIC OBJECTIVES

- To lead the approach for sex/gender medicine towards metabolic conditions highly prevalent in Spain.
- To lead transfer research in reproductive endocrinology and intermediary metabolism.
- To lead the transfer of scientific knowledge into clinical practice in reproductive endocrinology.

ACTIVITY INDICATORS 2024

- 2 competitive national projects: ISCIII
- 3 clinical trials led
- 2 competitive Human Resources contracts
- 9 publications
- IF: 50.30
- Publications in Q1: 3 (33%)
- Publications in D1: 3 (33%)
- 1 doctoral thesis supervised and read
- Evaluators for public agencies: 2 PIs
- Members of editorial boards: 2 PIs
- One application for European patent (EP19382836.5) titled “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.
- 3 actions with impact on society: round tables, outreach news.

MAJOR MILESTONES

1. **Luque M, Martínez MÁ, Insenser M, Fernández E, Quintero A, Fiers T, Kaufman JM, García AM, Rosillo M, Nattero L, Escobar HF.** Influence of state-of-the-art laboratory techniques on the phenotyping of women with polycystic ovary syndrome in the clinical setting. J Endocrinol Invest. 2024;DOI:10.1007/s40618-024-02416-0. This work analyses the diagnostic methods for Polycystic Ovary Syndrome (PCOS). In conclusion, immunoarrays used in clinical practice are inaccurate for phenotyping women with PCOS.
2. **Nattero L, Insenser M, Amigó N, Samino S, Martínez N, Dorado B, Quintero A, Escobar HF, Luque M.** Quantification of lipoproteins by proton nuclear magnetic resonance spectroscopy ((1)H-NMRS) improves the prediction of cardiac autonomic dysfunction in patients with type 1 diabetes. J Endocrinol Invest. 2024;47(8): 2075 - 2085. DOI:10.1007/s40618-023-02289-9. This work describes how the advanced profile of lipoproteins determined through nuclear magnetic resonance (NMR), alongside clinical variables, is useful to identify patients with Type 1 diabetes at risk of cardiac autonomic neuropathy (CAN).
3. **Martínez MÁ, Quintero A, de Lope S, Insenser M, Fernández E, Escobar HF, Luque M.** Obesity and polycystic ovary syndrome influence intestinal permeability at fasting, and modify the effect of diverse macronutrients on the gut barrier. FOOD RES INT. 2024;186: 114338 - 114338. DOI:10.1016/j.foodres.2024.114338. This study shows that obesity and PCOS alter the effect of macronutrients on the gut barrier and have impact on intestinal permeability at fasting, contributing to endotoxemia and chronic inflammation in functional hyperandrogenism.
4. Awards to the best article, doctoral thesis, and obtention of a research grant at the 65th Congress of the Spanish Society of Endocrinology and Nutrition (SEEN), held in Oviedo. These acknowledgements reinforce the outstanding track record in research and clinical excellence of the research group.
5. National Multidisciplinary Conference on Type 1 Diabetes. First edition of these conferences, with the objective to update knowledge on research innovation and technological development in the Type 1 diabetes setting.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	9	50,30	6,29	8	89	3	33
	64	373,24	6,06	46	74	15	23



# Area 5

## Chronic Conditions and Surgery Research

### Respiratory Diseases Group



#### GROUP COMPOSITION

##### Head

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Carmen Rodríguez Calle  
Celia Zamarro García  
Esther Barbero Herranz  
Eva Mañas Baena  
Javier Gaudó Navarro

Jesús Corres González  
José Andrés Tenes Mayen  
Juan Abelardo Rigual Bobillo  
Laura Pozuelo Sánchez  
Luis María Maíz Carro  
Marta Najarro de la Parra  
Raquel Morillo Guerrero  
Rosa Nieto Royo  
Sara González Castro



#### LOCATION

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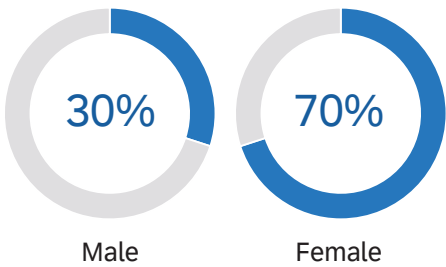


#### KEY WORDS

respiratory conditions, bronchial asthma, bronchiectasis, chronic obstructive pulmonary disease, cystic fibrosis, pulmonary thromboembolism, non-invasive mechanical ventilation



#### BREAKDOWN BY GENDER



Area 5

Chronic Conditions and Surgery Research

Respiratory Diseases Group

NETWORKS AND ALLIANCES

- CIBER for Respiratory Diseases
- EPENET
- RIETE Registry
- RIBRON
- PII TEP SEPAR
- INVENT - International Network of Clinical VTE Research Networks



LINES

- Venous Thromboembolic Disease.
- Bronchiectasis, cystic fibrosis and chronic bronchial infection. Chronic infection by Pseudomonas aeruginosa and respiratory fungal colonization.
- Acute and chronic respiratory failure. Non-invasive mechanical ventilation. High-flow and ambulatory oxygen therapy.
- Bronchial asthma. Chronic cough.
- COPD. Self-care in COPD. Respiratory rehabilitation.

STRATEGIC OBJECTIVES

To design and conduct scientific projects to advance Pulmonology and with positive impact on the health of patients with respiratory diseases.

ACTIVITY INDICATORS 2024

- 1 competitive European public project led: MORPHEUS (HE)
- 2 competitive national public projects led: ISCIII
- 3 competitive private projects led: Merck Health & Caixa Research Health
- 10 clinical trials led
- 2 competitive Human Resources contracts
- 54 publications
- IF: 374.30
- Publications in Q1: 38 (70%)
- Publications in D1: 21 (39%)
- Evaluator for projects and scientific communications: 1 PI
- Members of editorial boards: 1 PI

MAJOR MILESTONES

1. National coordinators for the European project MORPHEUS-101095698 “Prognosis improvement of unprovoked venous thromboembolism using personalized anticoagulant therapy”.
2. Incorporation of 3 new clinical researchers into the research group.
3. Participation in the Spanish multicentre study METASLEEP (PMP22/00030), “Impact of Respiratory Disorders Management During Sleep upon systemic hypertension control”, funded by the ISCIII.
4. Co-authorship of the article: Talasaz AH, Sadeghipour P, Ortega L, Kakavand H, Aghakouchakzadeh M, Beavers C, Fanikos J, Eikelboom JW, Siegal DM, Monreal M, Jiménez D, Vaduganathan M, Castellucci LA, Cuker A, Barnes GD, Connors JM, Secemsky EA, Van BW, De Caterina R, Kurlander JE, Aminian A, Piazza G, Goldhaber SZ, Moores L, Middeldorp S, Kirtane AJ, Elkind MSV, Angiolillo DJ, Konstantinides S, Lip GYH, Stone GW, Cushman M, Krumholz HM, Mehran R, Bhatt DL, Bikdeli B. Optimizing antithrombotic therapy in patients with coexisting cardiovascular and gastrointestinal disease. NAT REV CARDIOL. 2024;21(8): 574 - 592. DOI:10.1038/s41569-024-01003-3.
5. Co-authorship of the most cited article in the JACC journal during 2024: Bejjani A, Khairani CD, Assi A, Piazza G, Sadeghipour P, Talasaz AH, Fanikos J, Connors JM, Siegal DM, Barnes GD, Martin KA, Angiolillo DJ, Kleindorfer D, Monreal M, Jiménez D, Middeldorp S, Elkind MSV, Ruff CT, Goldhaber SZ, Krumholz HM, Mehran R, Cushman M, Eikelboom JW, Lip GYH, Weitz JI, Lopes RD, Bikdeli B. When Direct Oral Anticoagulants Should Not Be Standard Treatment: JACC State-of-the-Art Review. J Am Coll Cardiol. 2024;83(3): 444 -465. DOI:10.1016/j.jacc.2023.10.038.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	54	374,30	6,93	43	80	21	39
	253	2058,55	8,18	214	85	69	27

Area 5

Chronic Conditions and Surgery Research

Cardiovascular Diseases Group



GROUP COMPOSITION

<b>Head</b> José Luis Zamorano Gómez Head of the Cardiology Unit zamorano@secardiologia.es 91 336 85 15	Covadonga Fernández-Golfín Lobán Cristina García Sebastián David Cordero Pereda Eduardo Franco Díez Eduardo González Ferrer Elisa Velasco Valdazo Fátima de la Torre Carazo Ignacio Hernández Navarro Irene Carrión Sánchez Javier Angulo Frutos 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 María Carmen de Pablo Zarzosa	María Luisa Salido Tahoces Marcelo Sanmartín Fernández Marta Jiménez-Blanco Bravo Miguel Cayetano Amores Luque Miguel Castillo Orive Nunzio Alcharani de Simone Paloma Remior Pérez Pilar Agudo Quílez Rafael Ramírez Carracedo Rafael Rodrigo Martínez Moya Roberto Matía Francés Sandra González Martín Sara Fernández Santos Sara Jorquera Ortega Sergio García Gómez Simón Novo Flores Susana del Prado Díaz Vanesa Cristina Lozano Granero Vivencio Barrios Alonso
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<b>Collaborating Staff</b> Ana García Martín Ana Pardo Sanz Ángel Sánchez Recalde Antonio Hernández Madrid Ariana González Gómez Beatriz Jiménez Guirado Claudia González Cucharero Clemencia de Rueda Panadero		



LOCATION

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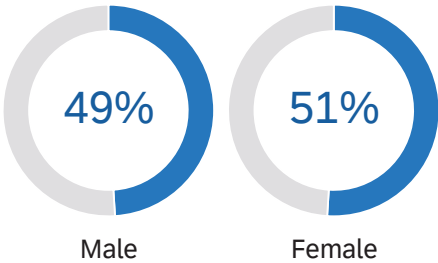


KEY WORDS

valve failure, acute coronary syndrome, heart failure, software, cardiovascular imaging, molecular imaging, new technologies, arrhythmias, endothelial dysfunction, biomarkers, cardiac rehabilitation, ubiquitin-proteasome



BREAKDOWN BY GENDER





Area 5

Chronic Conditions and Surgery Research

Cardiovascular Diseases Group

21

NETWORKS AND ALLIANCES

- CIBER for Cardiovascular Diseases
- REDINSCOR



LINES

- Imaging techniques in heart valve diseases and structural cardiopathies.
- Ischemic cardiopathy and structural damage: new biomarkers, bimolecular imaging and precision medicine.
- Development of new therapies in cardiac arrhythmias.
- Cardiovascular epidemiology, risk factors and rehabilitation.

STRATEGIC OBJECTIVES

- To advance in the knowledge of cardiovascular diseases, one of the main causes of mortality in developed countries, through an approach of basic-clinical research of translational nature.
- To explore the development of new medical imaging techniques, and to identify and validate biomarkers for diagnosis, prognosis, prevention, and response to treatment.

ACTIVITY INDICATORS 2024

- 2 European projects led: RETENTION (H2020) and STRATIFY-HF (HE)
- 6 national public projects: ISCIII and MICINN
- 9 private projects led
- 54 clinical trials led
- 95 publications
- IF: 808.37
- Publications in Q1: 59 (62%)
- Publications in D1: 37 (39%)
- 3 doctoral theses supervised and read
- 2 awards / acknowledgements
- Members of editorial boards: 5 researchers
- 1 international patent (EP11845312,5) "Potential use of EMMPRIN inhibitors for cardiac damage treatment after ischemia-reperfusion". (Authors: Dr. Carlos Zaragoza et al.), and another one in application stage.

MAJOR MILESTONES

- First European Lump Sum funding project granted: "FH-EARLY 101155885: New strategies for the EARLY diagnosis, risk stratification and co-management of familial hypercholesterolemia."
- CIBER Study - SPANISH I. Prospective, randomized, multicentre, open study, event-driven, to evaluate non-inferiority in a personalized precision strategy for sudden death prevention in patients with non-ischemic dilated cardiomyopathy. PI in our centre: Dr. Marta Jiménez-Blanco.
- First European project of the ERASMUS program granted: "XiA: Xpanding Innovative Alliance for interoperability skills in digital health".
- Dr. Cristina Lozano appointed as President of the Young Cardiologists Group of the Spanish Society of Cardiology.
- Dr. Zamorano obtains different appointments and acknowledgements, including: Member of the Royal National Academy of Medicine of Spain, Director of the European PCR TRICUSPID Focus Group, Co-director of the Interventional Echocardiography Congress (Milan, 2024).

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	95	808,37	8,51	69	73	37	39
	465	3384,92	7,18	328	71	116	25

Area 5

Chronic Conditions and Surgery Research

Paediatrics Group



GROUP COMPOSITION

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<b>Principal Investigators</b> Mª Jesús del Cerro Marín María Álvarez Fuente		



LOCATION

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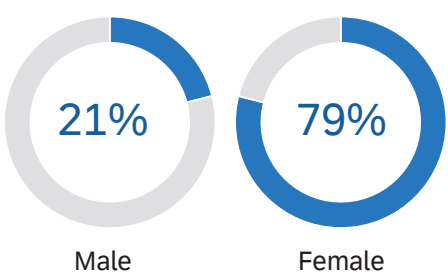


KEY WORDS

bronchopulmonary dysplasia, cell therapy, pulmonary arterial hypertension, congenital heart diseases, diabetes mellitus, rare diseases, child obesity, new technologies in Type 1 diabetes, growth, drug safety in Paediatrics, hospital infection, hyperandrogenism



BREAKDOWN BY GENDER



# Area 5

## Chronic Conditions and Surgery Research

### Paediatrics Group

#### NETWORKS AND ALLIANCES

- Type 1 diabetes Genetic Consortium
- PULMESCELL Project: Niño Jesús Hospital & UCM
- RECLIP – Spanish Network for Paediatric Clinical Trials
- Spanish Registry of Congenital Heart Diseases (RECC) of the Spanish Society of Cardiology



#### LINES

- Pulmonary arterial hypertension.
- Cell therapy in bronchopulmonary dysplasia.
- Markers to predict the risk of developing bronchopulmonary dysplasia.
- Safety of new drugs in the paediatric population.
- Congenital heart diseases in adolescents and adults.
- New technologies in Type 1 diabetes.
- New drugs for 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.
- New imaging techniques in congenital heart diseases.
- New techniques in pulmonary valve implantation.

#### STRATEGIC OBJECTIVES

- Development of new therapies for preventing bronchopulmonary dysplasia.
- Evaluation of new therapies in PAH.
- Evaluation of new drugs in Paediatrics.
- Prognosis and quality of life for congenital heart diseases at mid and long term.
- Genetic mapping of Type 1 diabetes mellitus.
- Development, implantation and dissemination of new technologies for Type 1 diabetes mellitus in childhood and adolescence.
- New insulins for Type 1 diabetes mellitus in childhood and adolescence.
- Lifestyle, prevention and treatment in child obesity.
- Epidemiology and genetic analysis of rare diseases: pseudohypoparathyroidism (Spanish PHP group), monogenic diabetes.
- Epidemiological studies on efficacy and safety in children with growth hormone treatment.
- Hyperandrogenism and Type 1 diabetes.

#### ACTIVITY INDICATORS 2024

- 4 competitive projects led: ISCIII and MICINN
- 1 private project led
- 9 clinical trials led
- 1 competitive Human Resources contract
- 6 publications
- IF: 34,90
- Publications in Q1: 2 (33%)
- Publications in D1: 1 (17%)
- 1 application for European patent
- Evaluators for projects in national associations: 1 PI
- Members of editorial boards: 1 PI

#### MAJOR MILESTONES

1. Launch of two research projects within the National Plan funded by the ISCIII (AES 2023): PI23/01302 PI. Dr. María Álvarez and PI23/01819 PI. Dr. María Jesús del Cerro.
2. International extension of the patent “Pharmaceutical composition for preventing or treating bronchopulmonary dysplasia by the intravenous route in repeated doses” PCT/EP2024/057670.
3. Initiation of three clinical trials with private funding: TREPaed (sponsor: AOP ORPHAN pharmaceuticals GMBH), AV-101-002 and AV-101-003 (sponsor: AEROVATE THERAPEUTICS, INC) PI. Dr. María Jesús del Cerro.
4. **Cerro MJD, Ormazábal IG**, Gimeno A, **Álvarez M**, López P, Avila A, Arruza L, González C, Labrandero de Lera C, Lozano M, Moreno L, Melen G, Ramírez M, Saldaña N, Pavón A, Vento M, “PULMESCELL” I. Repeated intravenous doses of human umbilical cord-derived mesenchymal stromal cells for bronchopulmonary dysplasia: results of a phase 1 clinical trial with 2-year follow-up. Cytotherapy. 2024;26(6): 632 - 640. DOI:10.1016/j.jcyt.2024.02.028.
5. **Téllez L**, Rincón D, Payancé A, Jaillais A, Lebray P, **Rodríguez de Santiago E**, Clemente A, Paradis V, Lefort B, **Garrido E**, **Prieto R**, **Iserin L**, **Tallegas M**, **Garrido E**, **Torres M**, **Muriel A**, **Perna C**, **del Cerro MJ**, d’Alteroche L, Rautou PE, Bañares R, **Albillos A**, VALDIG C. Non-invasive assessment of severe liver fibrosis in patients with Fontan-associated liver disease: The VALDIG-EASL FONLIVER cohort. J Hepatol. 2024;DOI:10.1016/j.jhep.2024.09.005.

#### BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	6	34,90	5,82	3	50	1	17
	50	437,60	8,79	33	66	10	20



# Area 5

## Chronic Conditions and Surgery Research Metabolic-Endocrine Digestive Surgery and Nutrition



### GROUP COMPOSITION

#### Head

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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

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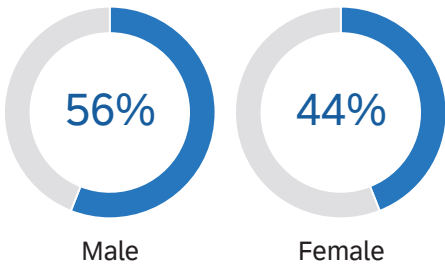


### KEY WORDS

endocrine surgery, metabolic surgery,  
obesity surgery, cardiovascular risk,  
malnutrition, nutritional support,  
parenteral nutrition, oncological surgery,  
digestive surgery, neuroendocrine  
tumours



### BREAKDOWN BY GENDER



# Area 5

## Chronic Conditions and Surgery Research

### Metabolic-Endocrine Digestive Surgery and Nutrition

#### NETWORKS AND ALLIANCES

- CIBER for Obesity and Nutrition Physiopathology
- Spanish Society of Endocrinology and Nutrition (SEEN)
- Work Group on Nutrition
- Work Group on Neuroendocrinology
- Work Group on Adrenal Gland
- Work Group on Obesity
- Group of interest on intestinal failure and home nutrition of the European Society of Clinical Nutrition and Metabolism (ESPEN).
- Society of Endocrinology, Nutrition and Diabetes of Madrid (SENDIMAD)
- Nutrition Group
- Neuroendocrinology Group
- National Registry of Carcinomatosis. Spanish Group of Peritoneal Oncological Surgery (REGECOP)
- Group of Artificial, Home and Outpatient Nutrition of the Spanish Society of Clinical Nutrition and Metabolism (SENPE).
- EURECCA Registry of Gastric and Oesophageal Cancer
- Group of primary hyperaldosteronism of ENSAT



#### LINES

- Metabolic surgery for obesity and associated comorbidities.
- Malnutrition and nutritional support.
- Oncological and non-oncological digestive surgery.
- Neuroendocrine tumours and their surgical treatment.

#### STRATEGIC OBJECTIVES

- To delve in the study of cardiovascular risk; hormonal, metabolic and nutritional alterations associated with severe obesity and their resolution and/or evolution after metabolic/ bariatric surgery.
- To advance in the development and evolution of techniques for digestive oncological surgery, gastroesophageal conditions, of abdominal wall and pancreatic surgery, as well as in innovative surgical approaches (laparoscopy, robotics, etc.).
- To conduct research about diagnostic and therapeutic aspects of neuroendocrine tumours and adrenal tumours, as well as their surgical treatment through modern techniques.
- To conduct research about innovative aspects of artificial nutrition in patients with intestinal failure, oncological patients, particularly with tumours in the digestive tract or with impact upon it.
- To define strategies for the optimization of the use of artificial nutrition, enteral and parenteral, in the treatment of disease-associated malnutrition in the hospital setting, particularly in oncological and surgical patients.

#### ACTIVITY INDICATORS 2024

- 1 competitive national public project: ISCIII
- 4 private projects led
- 6 clinical trials led
- 62 publications
- IF: 207.50
- Publications in Q1: 28 (45%)
- 3 awards
- Members of editorial boards: 1 PI

Chronic Conditions and Surgery Research

Metabolic-Endocrine Digestive Surgery and Nutrition

MAJOR MILESTONES

- 1. Dr. Julio Galindo was appointed as Coordinator in the CAM of the EURECCA (European Registration of Cancer Care) project for Oesophagogastric Cancer, which represents a highly relevant leadership in the group participation in research for this type of tumours at European level, confirming the experience of the group in this line of research.
- 2. Achievement of the CSUR 97 for resection surgery or complex oesophageal reconstruction in adults. Unit Coordinator: Dr. Julio Galindo. This represents an important support for the work of the group, not only in patient care aspects, but in an outstanding manner in the surgical research contributed in recent years about this aspect.
- 3. Dr. Marta Araujo was appointed Coordinator of the Adrenal Group of the Spanish Society of Endocrinology, Diabetes and Nutrition (SEEN), which represents an acknowledgement for her outstanding research work, with multiple international and national publications on this condition, as well as the obtention of many competitive research projects in this area. She has also obtained in 2024 the extraordinary award for the Best Doctoral Thesis of her graduation year at the UAH.
- 4. Dr. Marta Araujo and Dr. Víctor Rodríguez have organized the second edition of the Update Course on Pituitary Tumours, attended by over 200 participants. This represents a major work of dissemination of the research experience of the group in neuroendocrine pituitary tumours, another one of the priority lines for the group.
- 5. Dr. José Ignacio Botella obtained the award for the Best Communication at the SENDIMAD Congress in Madrid, within the line of research on home parenteral nutrition, particularly for oncological patients, and he was appointed Vice-president of said scientific society.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	62	207,50	3,35	47	76	4	6
	183	598,27	3,49	104	57	6	3



# Area 5

## Chronic Conditions and Surgery Research

### Multisystemic Diseases Group

21



#### GROUP COMPOSITION

##### Head

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Cristina Bianca Pomana  
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  
María Belén Pumares Álvarez  
Martín Fabregate Fuente  
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Olivia Sánchez Sánchez  
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Rosa María Fabregate Fuente  
Sergio José Diz Fariña  
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##### LOCATION

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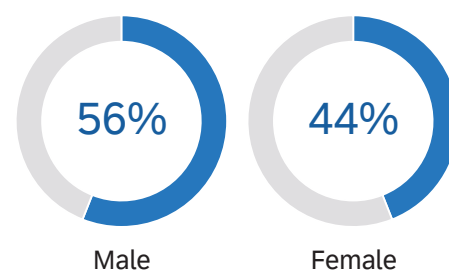


##### KEY WORDS

multisystemic diseases, heart failure, complex chronic patient, cardiovascular prevention, venous thromboembolism, systemic autoimmune conditions, minority diseases, hereditary hemorrhagic telangiectasia, congenital metabolic diseases in adult patients, elderly patient, polypathological patient



##### BREAKDOWN BY GENDER



# Area 5

## Chronic Conditions and Surgery Research

### Multisystemic Diseases Group

#### NETWORKS AND ALLIANCES

- Spanish Society of Internal Medicine (SEMI)
- Orphanet
- Euro Castleman
- Amelya Lupus Madrid
- HHT Association, Spain
- MPS-LISOSOMALES Association, Spain
- Felupus
- AIDA Network
- Castleman, Spain



#### LINES

- Heart failure in complex chronic patients.
- Physiopathological and therapeutic basis for cardiovascular prevention.
- Prophylaxis for venous thromboembolism.
- Hereditary hemorrhagic telangiectasia
- Congenital metabolic diseases in adult patients
- Systemic autoimmune conditions

#### STRATEGIC OBJECTIVES

- To advance in the knowledge of the physiopathological mechanisms involved in different multisystemic diseases.
- Identification of biomarkers and potential therapeutic targets, as well as the development of prognostic models with clinical use in complex acute or chronic conditions.
- To develop, apply and evaluate new diagnostic and therapeutic technologies or tools, as well as new strategies for prevention and treatment, in patients with complex conditions.
- To promote synergies between lines of research and collaboration with other IRYCIS groups, researchers and structures.
- Integration and active participation in cooperative networks, work groups and multicentre registries, at national and international level.
- To reinforce and expand alliances and collaborations with the business sector in clinical research.
- Generation of new lines of research, complementary with the current ones and in line with the IRYCIS strategic objectives and national and European plans.

#### ACTIVITY INDICATORS 2024

- 1 competitive public project led: ISCIII
- 7 private projects led
- 31 clinical trials led
- 40 publications
- IF: 175.60
- Publications in Q1: 19 (48%)
- Publications in D1: 19 (20%)
- 2 awards
- 2 consensus documents and 2 protocols of action implemented
- Members of evaluating committee: 1 group researcher.
- Members of editorial boards: 2 researchers
- 1 MetaDiSc 2.0 intellectual property registration sustained
- 1 visitor received during a 6-month stay:
  - o ESAME Pharmaceutical Business School (Salamanca)

Chronic Conditions and Surgery Research

Multisystemic Diseases Group

MAJOR MILESTONES

- 1. Consensus document led by the group: “Llàcer P, Romero G, Trullàs JC, de la Espriella R, Cobo M, Quiroga B, Casado J, Slon MF, Morales JL, Morgado JI, Ortiz A, Formiga F, Melendo M, de Sequera P, Recio A, Díez J, Manzano L, Núñez J. Consensus on the approach to hydrosaline overload in acute heart failure. SEMI/SEC/S.E.N. recommendations. Rev Esp Cardiol (Engl Ed). 2024;77(7): 556 - 565. DOI:10.1016/j.rec.2024.01.008.
- 2. Clinical practice guidelines led: González A, Del Arco C, Lucas D, Frías M, Guillán M, Méndez M, Ruiz M, Aguado AC, Fraile J, Latorre G, Castañeda S. Executive summary on the optimization of the multidisciplinary and integrated approach to polymyalgia rheumatica and giant cell arteritis in Madrid region. Rev Clin Esp (Barc). 2023;224(1): 48 - 56. DOI:10.1016/j.rceng.2023.12.009.
- 3. Inclusion of the outcomes from the independent multicentre CLOROTIC (NCT01647932) clinical trial led by the group, in the main international guidelines and consensus documents on heart failure: European Society of Cardiology (ESC) 2023 [PMID: 37622666], American College of Cardiology 2023 [PMID: 37137593] y 2024 [PMID: 39127954], Heart Failure Association- ESC [PMID: 37208936] and European Federation of Internal Medicine [PMID: 38453571].
- 4. High-impact publication of the outcomes from the COLICA (ICI19/00055) independent clinical trial: “Pascual D, Núñez J, Pérez MT, González JR, Taibo M, Llàcer P, Delgado J, Villar S, Mirabet S, Aimo A, Riquelme A, Anguita M, Martínez M, Noguera JA, Ibáñez B, Bayés A, COLICA I. Colchicine in acutely decompensated heart failure: the COLICA trial. Eur Heart J. 2024;45(45): 4826 - 4836. DOI:10.1093/eurheartj/ehae538.
- 5. Outstanding original article: López L, Vázquez ME, Colón C, Bravo SB, Barbosa S, Álvarez JV, Sánchez R, López M, López M, Villacorta E, Goicoechea MA, Guerrero FJ, Ortolano S, Leao E, Hermida Á, Couce ML. Characterization of the plasma proteomic profile of Fabry disease: Potential sex- and clinical phenotype-specific biomarkers. TRANSL RES. 2024;269: 47 - 63. DOI:10.1016/j.trsl.2024.02.006.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	40	175,60	4,39	26	65	8	20
	170	797,91	4,69	105	62	22	13



# Area 5

## Chronic Conditions and Surgery Research

### Liver and Digestive Diseases Group



#### GROUP COMPOSITION

##### Head

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Antonio Guerrero García  
Antonio López San Román  
Beatriz Peñas García  
Carlos Martín de Argila de Prados  
Carolina García Martín  
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Francisco Mesonero Gismero  
Javier Martínez González  
José Luis Lledó Navarro

Juan Ángel González Martín  
Leticia Muñoz Zamarrón  
Lorena Paule Peral  
Miguel Ángel Rodríguez Gandía  
Miguel García González  
Rosa María Martín Mateos  
Rubén Sánchez Aldehuelo



#### LOCATION

Gastroenterology and Hepatology Unit  
2nd Floor - Centre  
Ramón y Cajal University Hospital

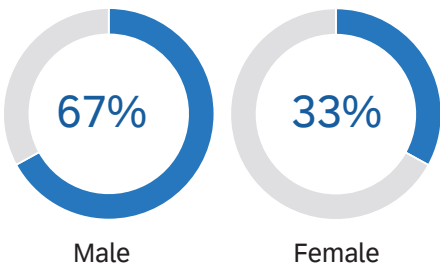


#### KEY WORDS

cirrhosis, bacterial translocation,  
inflammation, bowel, endoscopic  
ultrasound, inflammatory bowel disease,  
endoscopy



#### BREAKDOWN BY GENDER



21

# Area 5

## Chronic Conditions and Surgery Research

### Liver and Digestive Diseases Group

#### NETWORKS AND ALLIANCES

- CIBER for Liver and Digestive Diseases



#### LINES

- Physiopathology, prevention and treatment optimization for complications of cirrhosis and portal hypertension.
- Optimization of endoscopy for diagnosis and treatment of digestive diseases.
- Etiopathogenic mechanisms with immunological basis in cirrhosis. Relevance of bowel bacterial translocation.
- Etiopathogenic mechanisms with immunological basis and treatment optimization in inflammatory diseases of the digestive track.

#### STRATEGIC OBJECTIVES

- Contribution of inflammatory mechanisms to cirrhosis progression.
- Relevance of endoscopic ultrasound in the treatment of biliopancreatic conditions.
- Inflammation of the bowel mucosa as therapeutic target in cirrhosis.
- Treatment optimization in inflammatory bowel disease.

#### ACTIVITY INDICATORS 2024

- 3 European competitive projects: DECISION (H2020), MORESCREEN and EURO-VALDI-NET (HE)
- 3 national public competitive projects: ISCIII
- 4 private projects led
- 60 clinical trials led
- 1 competitive Human Resources contract
- 82 publications
- IF: 716.90
- Publications in Q1: 55 (67 %)
- Publications in D1: 38 (46 %)
- 4 acknowledgements to group members
- Evaluators for national public agencies: 1 PI
- Members of editorial boards: 2 PIs

#### MAJOR MILESTONES

- Reinforcement of the international positioning of the group: launch of two European projects: “MORESCREEN- 240046. Improving colorectal cancer screening: the complementary role of liquid biopsy (EIT-Health)” & “EURO-VALDI-NET- CA23146. European vascular liver diseases network (Cost Action)”. Coordination of the European positioning document on liver disease associated with Fontan surgery, and coordination of the endoscopy working group of the European Society of Gastrointestinal Endoscopy, with international and local impact (e.g. implementation of an environmental improvement system at the Endoscopy Unit).
- New project granted at the AES (ISCIII) for the START-TIPS (PI24/01769) study, looking to anticipate the indication for TIPS in decompensated cirrhosis: “Shaping The Anticipated Response to TIPS. Prospective, randomized, multicentre clinical trial to evaluate the efficacy of TIPS versus standard of care in high-risk patients after acute variceal bleeding”.
- Initiation of the multicentre POLYPHEM study, looking for a change in paradigm regarding anticoagulation management before and after colonoscopy.
- Consolidation of the FonLiver project, with a new high-impact publication on the use of non-invasive methods to identify patients with severe liver fibrosis after Fontan Surgery.
- Leadership and coordination of guidelines: European Guidelines on peroral endoscopic myotomy (or POEM), and Spanish Guidelines on the management of post-polypectomy haemorrhage.

#### BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	82	716,90	9,31	67	82	38	46
	328	2900,65	9,23	244	74	115	35



Area 5

Chronic Conditions and Surgery Research

Geriatrics Group



GROUP COMPOSITION

<b>Head</b> Alfonso José Cruz-Jentoft Head of the Geriatrics Unit geriatria.hrc@salud.madrid.org 91 336 81 72	Beatriz Montero Errasquín Carlota Manuela Zárate Sáez Carmen Sánchez Castellano Celia Corral Tuesta Claudia Álvarez Pinheiro Cristina Jiménez Domínguez Cristina Roldán Plaza Diana Alison Martínez Rivero Elisabet María Sánchez García Erick Arturo Rodríguez Espeso Jesús Mateos Del Nozal Lourdes Rexach Cano	Luisa Alejandra Hernández Sánchez Macarena Sánchez-Izquierdo Alonso Manuel Vicente Mejía Ramírez Arellano María Loreto Álvarez Nebreda María Nieves Vaquero Pinto María Villajos Guijarro Noelia Pérez Abascal Nuria María Pérez Panizo Paloma Bermejo Bescós Paula Collazo Castiñeira Paula Gutiérrez Viou Sagrario Martín-Aragón Álvarez
<b>Principal Investigator</b> Alfonso José Cruz-Jentoft		
<b>Collaborating Staff</b> Alejandro Javier Garza Martínez Álvaro Rodríguez Díaz-Pavón		



LOCATION

Geriatrics Unit  
10th Floor – Centre  
Ramón y Cajal University Hospital

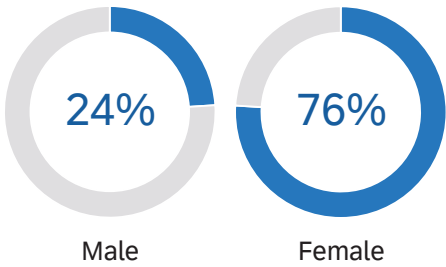


KEY WORDS

geriatric pharmacology, sarcopenia, frailty,  
geriatric nutrition, Alzheimer, geriatric  
syndromes



BREAKDOWN BY GENDER





## Chronic Conditions 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
- ESCO - European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases
- Clinical Consortium on Healthy Ageing of the WHO
- Global Leadership Initiative in Sarcopenia (GLIS)



## LINES

- Adequate prescription of medication for elderly persons.
- Systematic review of non-pharmacological therapies for geriatric syndromes.
- Prognostic value of comprehensive geriatric assessment.
- Definition of sarcopenia and frailty. Value of nutritional intervention and exercise in the prevention of physical disability.
- Indications for nutritional intervention in Geriatrics.

## STRATEGIC OBJECTIVES

- To improve the knowledge on Geriatric Medicine (diseases and disabilities in elderly persons and care systems), with an approached primarily oriented towards reduction in risks (patient safety) and prevention or delay of physical and mental disability.
- To include patients in nursing homes and other complex patients specifically in clinical research projects.

## ACTIVITY INDICATORS 2024

- 1 competitive European project: So-NUTS (JPI- HDHL)
- 1 private project led
- 4 clinical trials led
- 26 publications
- IF: 163,34
- Publications in Q1: 8 (31%)
- Publications in D1: 4 (15%)
- Evaluators for projects: 1 PI
- Members of editorial boards: 5 researchers
- 1 consensus document
- 1 visitor received and 8 months of stay:
  - o University of Salamanca

## MAJOR MILESTONES

1. Award by the Spanish Society of Geriatrics and Gerontology to the best original article published in the Spanish Journal of Geriatrics during the past year: "Spanish version of STOPP/START 3 Criteria. Advances in the detection of inadequate prescription of medication in elderly persons."
2. Leadership of the group in the publication of the first definition of sarcopenia with global consensus (GLIS): Kirk B, Cawthon PM, Arai H, Ávila JA, Barazzoni R, Bhasin S, Binder EF, Bruyere O, Cederholm T, Chen LK, Cooper C, Duque G, Fielding RA, Guralnik J, Kiel DP, Landi F, Reginster JY, Sayer AA, Visser M, von S, Woo J, Cruz AJ, Global Leadership Initiative in Sarcopenia (GLIS) G. The Conceptual Definition of Sarcopenia: Delphi Consensus from the Global Leadership Initiative in Sarcopenia (GLIS). Age Ageing. 2024;53(3): afae052. DOI:10.1093/ageing/afae052.
3. Collaboration and visit by staff from the University of Salamanca in sarcopenia research.
4. Finalisation of the SO-NUTS European project, PCI2020-120683- 2: "Preventing sarcopenia, obesity and sarcopenic obesity in retired people", through the development of a personalized digital intervention which allows the optimization of nutritional behaviour and physical activity at retirement, with several publications and some in preparation.
5. Start of the collaboration with the "Multisystemic Diseases" group in the joint project "Malnutrition and frailty in elderly patients with HF treated with ISGLT2".

## BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	26	163,34	6,81	21	81	4	15
	150	903,30	5,72	82	55	20	13

# Area 5

## Chronic Conditions and Surgery Research

### Surgical Research in Urology and Renal Transplant Group



#### GROUP COMPOSITION

<b>Head</b> Francisco Javier Burgos Revilla Head of the Urology Unit Professor of Urology University of Alcalá fjavier.burgos@salud.madrid.org 91 336 87 60	<b>Collaborating Staff</b> 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 Javier Sáenz Medina 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
<b>Principal Investigator</b> Francisco Javier Burgos Revilla		



#### LOCATION

Urology Unit  
6th Floor – Left  
Ramón y Cajal University Hospital

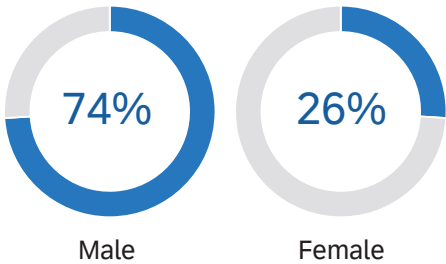


#### KEY WORDS

renal transplant, renal preservation,  
biomarkers, prostate cancer, fusion  
prostate biopsy, focal therapy,  
neuronavigation, renal tumour with  
vascular invasion, urothelial tumour



#### BREAKDOWN BY GENDER



#### 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)
- Spanish Association of Urology (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 the National Centre of Oncological Research (CNIO)
- FISEVI. Digital Manufacturing Lab: 3D-biomodel for surgical planning
- UTUC International Consortium Database (UICD) Registry
- i-RECORD Project



#### LINES

- Renal transplant and preservation in the experimental and clinical settings.
- Prostate cancer: diagnostic and therapeutic innovation.
- Diagnostic and therapeutic innovation in bladder conditions.
- Diagnostic and therapeutic innovation in renal and urothelial tumours.

#### STRATEGIC OBJECTIVES

- To advance in the physiopathological knowledge of the ischemia-reperfusion lesion in the context of renal transplantation, through research of translational nature from the experimental to the clinical setting.
- To identify biomarkers that allow to predict the viability and function of the graft after renal transplant.
- To advance in the development of pharmacological modulation models of the ischemia-reperfusion lesion during renal preservation in perfusion devices.
- To evaluate the diagnostic cost-efficacy and the therapeutic efficacy of new techniques for diagnosis and treatment in prostate cancer: fusion NMR biopsy and ultrasound through guided navigation systems, techniques for focal ablation of prostate cancer, intraoperative neurostimulation of neurovascular bundles in prostate surgery.
- To participate actively in multicentre studies for the evaluation of new molecules in prostate cancer treatment.
- To participate actively in multicentre studies and cooperative groups for the study and treatment of the functional and oncological bladder condition.
- To search for biomarkers predicting treatment response and disease relapse, as well as to characterize molecularly the neoplasia and the tumoral microenvironment, in renal and urothelial cancer.

#### ACTIVITY INDICATORS 2024

- 1 competitive European project: STBernard (HE)
- 1 competitive national private project
- 68 clinical trials led
- 48 publications
- IF: 315.40
- Publications in Q1: 25 (52%)
- Publications in D1: 9 (19%)
- Evaluators for national public agencies: 2 researchers
- Evaluators in European institutions: 1 PI
- Members of editorial boards: 2 researchers
- 2 visitors received and 20 months of stay:
  - Polytechnic University of Madrid



Chronic Conditions and Surgery Research

Surgical Research in Urology and Renal Transplant Group

MAJOR MILESTONES

1. Competitive European project included in Cluster 3 of “Civil Safety for Society”: “STBernard. SysTem for SAFE Biological chEmical Radiological and Nuclear Assessment, Rescue and Decontamination”, funded by the Horizonte Europa program to improve safety in risk or emergency scenarios, to reduce the number and security of victims, and to mitigate their environmental impact.

2. Leadership in the evaluation of immunotherapy treatment for non-muscle-invasive bladder cancer, from the European Association of Urology-Young Academic Urologists EAU-YAU. Subiela JD, Krajewski W, González DA, Laszkiewicz J, Taborda J, Aumatell J, Sanchez M, Basile G, Moschini M, Caño J, Lopez E, Del Olmo P, Gallioli A, Tukiendorf A, D’Andrea D, Yuen J, Serna A, Pilcher R, Afferi L, Del Giudice F, Gomez J, Albisinni S, Soria F, Ploussard G, Mertens LS, Rajwa P, Laukhtina E, Pradere B, Tully K, Guerrero F, Rodríguez Ó, Alvarez M, Dominguez JL, Szydelko T, Gómez Dos Santos V, Jiménez MÁ, Burgos FJ, European Association of Urology C. Unlocking the Potential of Adequate Bacillus Calmette-Guérin Immunotherapy in Very-high-risk Non- muscle-invasive Bladder Carcinoma: A Multicenter Analysis of Oncological Outcomes and Risk Dynamics. Eur Urol Oncol. 2024;7(6): 1367 - 1375. DOI:10.1016/j.euo.2024.01.017.

3. Progression in the line of research for telomeres in early diagnosis for prostate cancer. Gómez E, Martínez JI, Bianco F, Miles BJ, Burgos J, Quintas JJ, Cano R, Gómez Á, Rodríguez A, Chéchile G, Fernández L, Martín A, Hidalgo P, Parramón M. ProSTAV, a clinically useful test in prostate cancer: an extension study. World J. Urol. 2024;42(1): 395 - 395. DOI:10.1007/s00345-024-05098-8.

4. Development of a line of clinical-experimental research with translational profile for the study of the connecting link between renal lithiasis and cardiovascular disease, based in the action of oxidative stress on the renal and systemic vascular endothelium. Sáenz J, Gómez Dos Santos V, Rodríguez M, Muriel A, Durán M, Gómez Del Val A, Burgos J, Prieto D. Cardiovascular and Cerebrovascular Morbidity in Patients with Urolithiasis: An Epidemiological Approach Based on Hospitalization Burden Data from 1997 to 2021. J Clin Med. 2024;13(12). DOI:10.3390/jcm13123564.

5. Participation in pivotal multicentre clinical trials on immunotherapy treatment for metastatic renal carcinoma in different lines of treatment. Choueiri TK, Albiges L, Barthélémy P, Iacovelli R, Emambux S, Molina J, Garmezy B, Barata P, Basu A, Bourslon MT, Moon H, Ratta R, McKay RR, Chehrizi A, Hammers H, Heng DYC, Braendle E, Beckermann KE, McGregor BA, Motzer RJ. Tivozanib plus nivolumab versus tivozanib monotherapy in patients with renal cell carcinoma following an immune checkpoint inhibitor: results of the phase 3 TiNivo-2 Study. Lancet. 2024;404(10460): 1309 - 1320. DOI:10.1016/S0140-6736(24)01758-6.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	48	315,40	8,09	36	75	9	19
	181	715,78	4,37	102	56	15	8

Area 5

Chronic Conditions and Surgery Research

Renal and Vascular Physiology and Physiopathology



GROUP COMPOSITION

Head

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Ariadna Moreno Piedra  
Daniel Rodríguez García  
Francisco Javier Bueno Guillén  
Gema Olmos Centenera  
José Luis Castillo Sequera  
Juan Antonio Gómez Pulido  
María Luz Polo Luque  
Mariano de la Serna Soto

Sergio de Frutos García  
Susana García Miranda



LOCATION

School of Medicine  
University of Alcalá

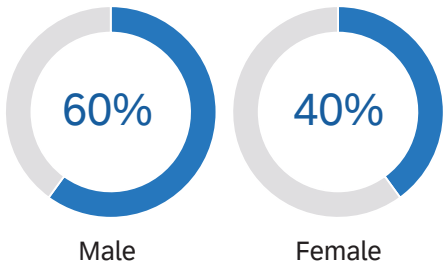


KEY WORDS

chronic renal disease, extracellular matrix,  
integrin-linked kinase, GLUT4, AQP2,  
endothelial dysfunction, phosphorus,  
cellular senescence, haemodialysis



BREAKDOWN BY GENDER



Chronic Conditions and Surgery Research

Renal and Vascular Physiology and Physiopathology

NETWORKS AND ALLIANCES

- Graphenano Medical Care, SL
- Íñigo Álvarez de Toledo Renal Foundation (FRIAT)
- RICORS 2040 (Kidney Disease)
- INNOREN-CM-CLINIREN



ACTIVITY INDICATORS 2024

- 5 competitive public projects: ISCIII
- 1 private project led
- 4 competitive Human Resources contracts
- 4 publications
- IF: 21.90
- Publications in Q1: 3 (75%)
- 1 active patent
- Evaluators for different national public agencies and entities: 5 researchers
- 1 international thesis supervised and read, with a distinction "Cum Laude".

LINES

- Integrin-linked kinase: a potential biomarker for progression of chronic renal disease (CRD) and modulator of the monocyte dysfunction causing cardiovascular damage.
- Integrin-linked kinase: its role in insulin resistance progression and in obesity development.
- The importance of phosphorus in the genesis of vascular alterations in elderly patients and patients with arteriosclerosis. New approaches for assessing the problem.
- The importance of phosphorus in the genesis of sarcopenia in elderly persons and patients with chronic renal disease. New approaches for assessing the problem.
- Massive data analysis in the prevention of complications associated with haemodialysis.

MAJOR MILESTONES

1. Participation in the most important renal research consortiums at national level (RD21/0005/0023 RICORS2040 (KIDNEY DISEASE) and from the Community of Madrid (P2022/BMD7221). New diagnostic and therapeutic strategies in chronic renal disease.
2. Sustained generation of relevant knowledge in the field of application of new materials in Biomedicine (1 publication and 1 contract with the university).
3. Launch of the project of collaboration with company (CDTI-ISCIII) focused on artificial intelligence: ALLPREVENT (PMPTA23/00033) "Prevention of severe pathological events in patients on haemodialysis through non-invasive continuous monitoring of vital signs and analysis of circular biomarkers."
4. Wide representation of the group members as evaluators of national agencies funding projects.
5. Reading of a doctoral thesis, validated by the publication of part of its outcomes in a high-impact journal.

STRATEGIC OBJECTIVES

- Four active research projects within the National Plan
- Six publications in the first quartile of their area of knowledge.
- Two clearly active collaborations with other members of IRYCIS or from the Ramón y Cajal University Hospital (backed up by projects, publications and/or joint lines of development).
- At least one scientific lecture per year for the entire Institute (with previous invitation).
- To enable the collaboration of other IRYCIS members in at least one annual teaching activity of the University of Alcalá.
- Regular collaboration with at least 1 private company.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	4	21,90	5,48	4	100	0	0
	31	239,34	7,82	29	94	9	29



# Area 5

## Chronic Conditions and Surgery Research

### Group for Diagnosis and Treatment of Allergic Conditions

21



#### GROUP COMPOSITION

##### Head

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##### Principal Investigators

M<sup>a</sup> Belén de la Hoz Caballer  
M<sup>a</sup> Pilar Berges Gimeno

##### Collaborating Staff

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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

Allergology Unit  
2nd Floor – Left  
Ramón y Cajal University Hospital

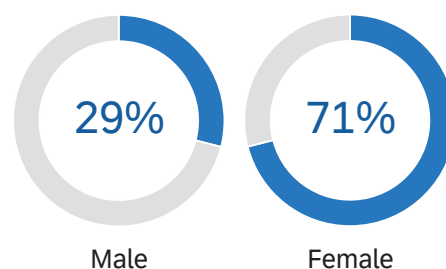


#### KEY WORDS

allergy, B-cell epitopes, food, medications, desensitization, chemotherapies, monoclonals, oral immunotherapy for food, immunotherapy for environmental allergens, mastocytosis, biomarkers, severe asthma, hives, quality of life, hymenopters, molecular diagnosis, microarrays, tryptase, anaphylaxis



#### BREAKDOWN BY GENDER



## Chronic Conditions and Surgery Research

### Group for Diagnosis and Treatment of Allergic Conditions

#### NETWORKS AND ALLIANCES

- Piel en Red
- FACME Vaccination Committee
- AEMPS
- Imperial College, London
- San Pablo CEU University
- Polytechnic University of Madrid, School of Telecommunications
- Spanish Network for Mastocytes



#### LINES

- Respiratory allergy.
- Anaphylaxis and mastocytosis.
- Diagnosis and treatment of allergy to chemotherapy and biologic drugs.
- Diagnosis and treatment of food allergies.

#### STRATEGIC OBJECTIVES

- To search for biomarkers, based on B-cell epitopes and microRNA expression, in order 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 tools for monitoring patients with food allergies on immunotherapy treatment.
- To evaluate the utility of in vitro techniques for activation of basophiles and determination of interleukins for diagnosis and follow-up of desensitization treatment with chemotherapies and biologic drugs.
- To study the quality of life and costs of drug desensitization procedures.
- To evaluate the frequency of mastocyte disease in patients with anaphylaxis.
- To evaluate risk factors in severe asthma.
- Technological and clinical validation of a respiratory exposure chamber against air allergens.

#### ACTIVITY INDICATORS 2024

- 3 competitive public national projects led: ISCIII
- 5 private projects led
- 15 clinical trials led
- 19 publications
- IF: 105.70
- Publications in Q1: 16 (84%)
- Publications in D1: 2 (11%)
- 1 award to quality in Allergology care and research
- Evaluators for medical agencies and societies: 4 researchers
- Members of editorial boards: 2 researchers
- 7 visitors received and 10.7 months of stay:
  - Polytechnic University of Madrid
  - Sant Joan de Deu Hospital
  - University Hospital of Santiago de Chile (Chile)
  - Jiménez Diaz Foundation
  - University Hospital de la Princesa
  - Hospital of Txagorritxu, Vitoria
  - Hospital of Elche

Chronic Conditions and Surgery Research

Group for Diagnosis and Treatment of Allergic Conditions

MAJOR MILESTONES

- 1. Accreditation as Centre of Excellence in Allergology by the World Allergy Organization.
- 2. Accreditation as High-Complexity Multidisciplinary Unit of Severe Asthma of Excellence by SEPAR and SEAIC.
- 3. Participation as research group in the competitive public project (ISCIII): Fortalece (FORT23/00046): Innovative therapies for a Personalized Medicine of Precision in health challenges.
- 4. Inclusion of the research project on allergy to betalactam antibiotic medications (PROA-ALERGIA) in the PROA for Infectious Diseases.
- 5. Publication of the validation for the environmental exposure chamber for the study of respiratory allergy caused by grass pollen.

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	19	105,70	5,87	18	95	2	11
	101	574,14	6,26	81	80,20	11	11





GROUP COMPOSITION

Head

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91 336 85 71

Principal Investigator

Mónica Vázquez Díaz

Collaborating Staff

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Boris Anthony Blanco Cáceres  
Carlos de la Puente Bujidos  
Carlos Antonio Guillén Astete  
Carmen Larena Grijalba  
Cristina Clara Maciá Villa  
Consuelo Díaz-Miguel Pérez  
Francisco Javier Bachiller Corral  
Iván del Bosque Granero  
Jaime Arroyo Palomo  
Javier Domínguez Barahona

Jesús Loarce Martos  
José Luis Morell Hita  
Lourdes Villalobos Sánchez  
Marcelino Revenga Martínez  
María Ángeles Blázquez Cañamero  
María Auxiliadora Martín Martínez  
María Jesús García Villanueva  
Marina Hernández Calleja  
Marta Valero Expósito  
Miren Garbiñe Roy Ariño  
Sandra Garrote Corral  
Verónica García García



LOCATION

Rheumatology Unit  
2nd Floor -Centre  
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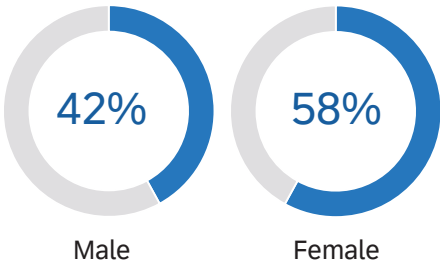


KEY WORDS

rheumatology, arthritis, autoimmune  
conditions, innovation



BREAKDOWN BY GENDER



# Area 5

## Chronic Conditions and Surgery Research

### Rheumatology Group

#### NETWORKS AND ALLIANCES

- Inflammatory Conditions
- RICORS
- EULAR
- OMERACT
- ORPHANET
- GRESSER
- GRAPPA
- PRINTO



#### LINES

- Clinical research in inflammatory arthropathies (RA, PsA, AS), and development of biomarkers to predict response to treatments.
- Improvement in processes and development of clinical research lines for autoimmune diseases (SLE, Sjögren, SS, vasculitis) and other rare diseases.
- Innovation in the management of rheumatological diseases through the development of digital devices and artificial intelligence for improved follow-up and to enable self-management by patients.
- Research in health outcomes and quality of life of patients with rheumatic conditions.

#### STRATEGIC OBJECTIVES

- To develop clinical research in rheumatic disease, delving into physiopathology, biomarkers, and mechanism of response to therapies, in order to advance in personalized treatment.
- Creation of large databases for inflammatory rheumatic disease through automatic and generalized extraction of information from electronic clinical records.
- To participate actively in national and international networks and joint projects.
- Creation of digital systems for data generation, in the patient setting, to assist in better control of rheumatic conditions.

#### ACTIVITY INDICATORS 2024

- 1 European project led: ImmunAID (H2020)
- 1 national public project: Fundación para el Conocimiento Madri+D
- 9 private projects led
- 44 clinical trials led
- 26 publications
- IF: 132.20
- Publications in Q1: 15 (58%)
- Publications in D1: 4 (15%)
- 2 awards
- Teaching participation in 1 UAH Master's Degree
- Evaluators in medical agencies and societies: 1 researcher from the group

#### MAJOR MILESTONES

1. Ongoing advance of the JULES Registry (SPANISH JUVENILE SYSTEMIC LUPUS ERYTHEMATOSUS REGISTRY), coordinated by the Rheumatology Unit of the Ramón y Cajal University Hospital (HURYC).
2. The 8th Conference on Systemic Autoimmune Diseases was held in the HURYC.
3. The first national meeting of patients with Fibrodysplasia Ossificans Progressiva, coordinated by the Rheumatology Unit, was held in the HURYC.
4. Scientific acknowledgement of the Multidisciplinary Uveitis Unit of the HURYC.
5. Publication by Dr. García Villanueva as first author of an article, with data from the Lupus Registry of the Spanish Society of Rheumatology. **Garcia MJ, Garrote S, Pego JM, Jiménez N, Uriarte E, Olivé A, Sangüesa C, Freire M, Aurrecochea E, Raya E, Tomero E, Montilla C, Galindo M, Calvo J, Menor R, Serrano B, Martinez J, Hernández JA, Ibañez M, Bonilla G, Rosas J, Salgado E, Fernández A, Rua I.** Diffuse alveolar hemorrhage in patients with systemic lupus erythematosus: data from the Spanish society of rheumatology Lupus Register (RELESSER). *Rheumatol Int.* 2024;44(11): 2445 - 2455. DOI:10.1007/s00296-024-05684-4.



GROUP COMPOSITION

Head

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Principal Investigator

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Collaborating Staff

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Irene María Pelayo Delgado  
Irene Sánchez Méndez  
Javier Miguelena Hycka  
Jorge Rodríguez-Roda Stuart  
Luis Gajate Martín  
Miren Martín García  
Rafael Muñoz Pérez



LOCATION

Experimental Surgery Unit  
3rd Floor - Right  
Ramón y Cajal University Hospital

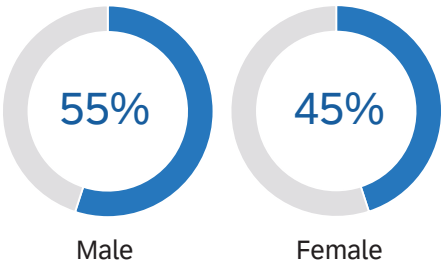


KEY WORDS

experimental surgery, endourology,  
ureteral stents, drug eluting stents,  
biodegradable stents, artificial  
implantable cardioverter-defibrillator,  
ultrasound-guided interventional  
procedure, urothelial carcinoma of the  
upper urinary tract



BREAKDOWN BY GENDER





# Area 5

## Chronic Conditions and Surgery Research

### Surgical Applications of Drug Delivery Systems Group

#### NETWORKS AND ALLIANCES

- RICORS2040- Kidney diseases
- Biomodels and Biobanks - ISCIII platform



#### LINES

- Evaluation and development of biodegradable ureteral stents.
- Evaluation and development of ureteral drug eluting stents.
- Evaluation and development of cardiac devices.
- Research in ultrasound-guided interventional techniques in Gynaecology.

#### STRATEGIC OBJECTIVES

- To develop a biodegradable polymeric matrix with the ability to release drugs at topical level in a controlled and programmed way.
- To advance in the design of innovative biodegradable ureteral stents with anti-reflux capacity.
- To develop a new questionnaire for evaluating the symptomatology associated with ureteral catheters in urologic patients.
- To identify the factors associated with biofilm formation in double-J ureteral catheters and their relation with bacteriuria and urinary infection in patients.
- To develop new systems of intracavity instillation for adjuvant treatment of urothelial tumours in the upper urinary tract. Biodegradable coated ureteral stents for release of different chemotherapy cycles..
- To evaluate new approaches through gynaecological ultrasound-guided interventional technique.
- To evaluate new intracardiac implantable devices for the treatment of advanced cardiac failure.

#### ACTIVITY INDICATORS 2024

- 1 competitive project led: ISCIII
- 5 competitive private projects
- 8 publications
- IF: 11.60
- Publications in Q1: 2 (25%)
- 1 doctoral thesis supervised and read
- 1 award
- Evaluators for projects: 1 PI
- Members of editorial boards: 1 PI
- 2 patent families
- Participation in activities with impact on society: the European Researchers' Night
- 1 visitor received and 2-month stay:
  - o Polytechnic University of Madrid

#### MAJOR MILESTONES

1. One application for priority patent: "Biodegradable intraurethral stent, self-retaining and anti-reflux" PCT/ ES2023/070325
2. One application for European priority patent: EP24382432.3, that protects the implantable "intraventricular system".
3. Defence of the doctoral thesis: "Urethral healing after different types of endoscopic ureterotomy for the treatment of urethral stenosis in porcine animal model", at the University of Murcia, with distinction Cum Laude.
4. Doctorate award granted by the Illustrious Official College of Physicians of Cáceres to the thesis supervised by the group manager.
5. Development of the project "Study and Characterization of miRNAs associated with the endothelial expression of integrin-bound kinase as new biomarkers of aortic stenosis", funded by the FIBioHRC.

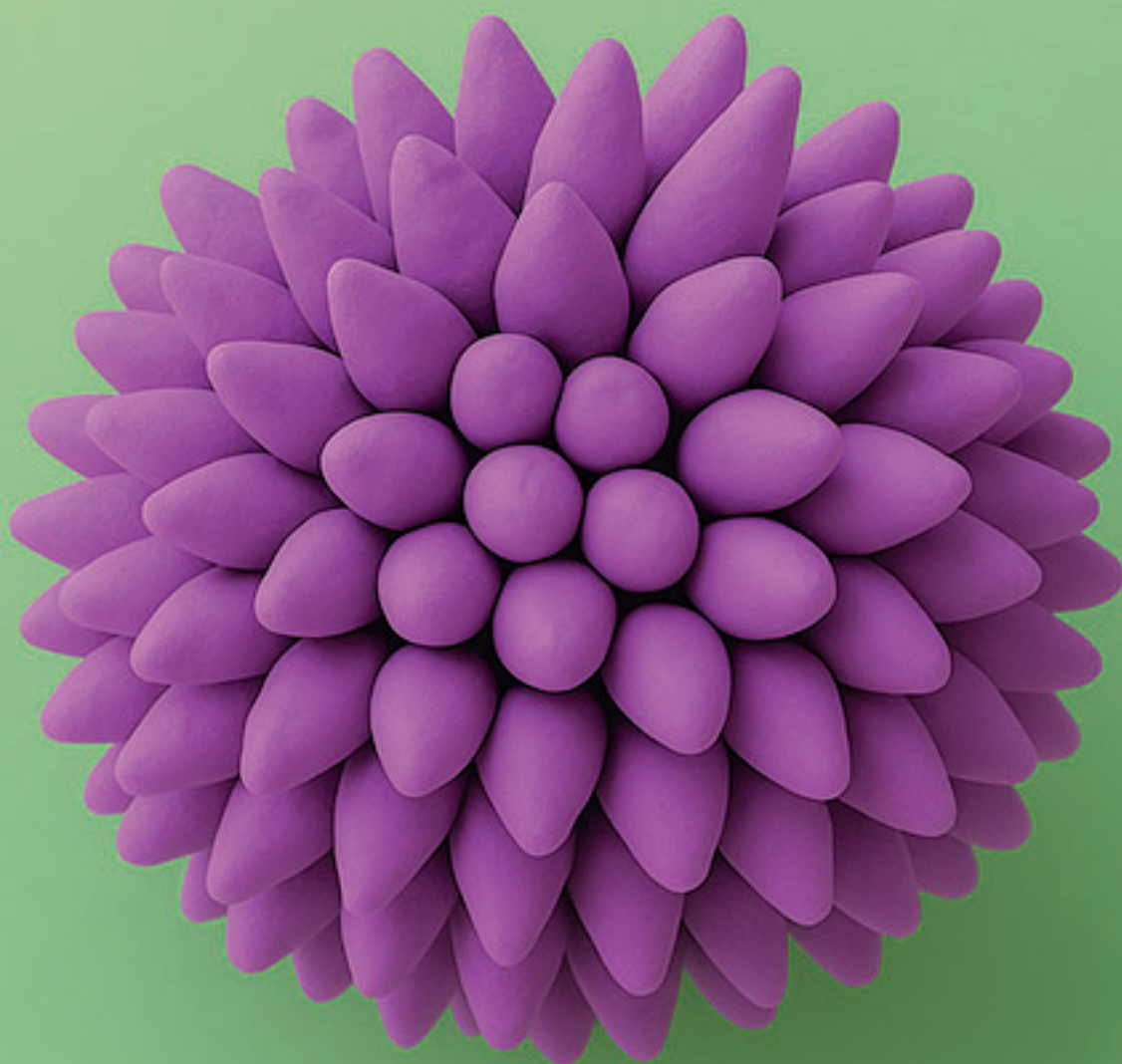
### Research Groups

Epidemiology and Clinical Biostatistics

Pharmacoepidemiology

Physiotherapy in Women's Health Processes

Drug Utilization and Health Outcomes of Pharmacotherapy



# Area 6

## Epidemiology, Public Health and Healthcare

### Funding and Scientific Production during the last five years

ACCUMULATED INCOME  
(private / public projects and clinical trials)

1,6M€ 

R&D&I PROJECTS  
AND INITIATIVES

28 

PUBLICATIONS

716 

PUBLICATIONS IN  
Q1&Q2

69%

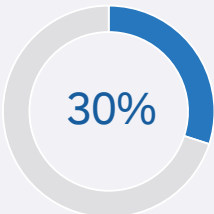
PUBLICATIONS with IRYCIS  
members as leaders

29%

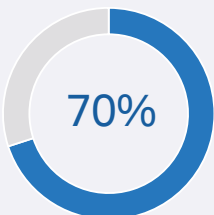
DOCTORAL THESES  
supervised and read

20

#### BREAKDOWN BY GENDER



Male



Female

### List of the five most relevant publications in the annuity

Daru J, **Zamora J**. Defining global thresholds for anaemia: a challenging mission. Lancet Haematol. 2024;11(4): 242 - 243. DOI:10.1016/S2352-3026(24)00061-9.

**López J**, Wieland LS, Yan Y, Barth J, Khami MR, Shivalli S, Lokker C, Rai HK, Macharia P, Yun S, Lang E, Bwanika A, Campos C, Ahmadian L, Witt CM. Methodological Challenges in Randomized Controlled Trials of mHealth Interventions: Cross-Sectional Survey Study and Consensus-Based Recommendations. J Med Internet Res. 2024;26: e53187. DOI:10.2196/53187.

**Rodríguez A**, Fernández B, Ortiz A, Gil M, **Rodríguez S**, Ruiz G, Fernández E, Ruilope LM, **de Abajo FJ**. Glucose-Lowering Drugs and Primary Prevention of Chronic Kidney Disease in Type 2 Diabetes Patients: A Real-World Primary Care Study. Pharmaceuticals. 2024;17(10): 1299. DOI:10.3390/ph17101299.

**Rodríguez A**, Arruabarrena C, Allendes G, Olivera M, Zarranz J, Teus MA. Hybrid deep learning models for the screening of Diabetic Macular Edema in optical coherence tomography volumes. Sci Rep. 2024;14(1): 17633 - 17633. DOI:10.1038/s41598-024-68489-2.

**Esteban B**, Serrano DR, **Pérez Menéndez C**, **Vicente N**, **Álvarez A**, **Abete JF**, **Martín P**. Stability of meropenem in portable elastomeric infusion devices: which protocol should be implemented in clinical practice?. Microbiol Spectr. 2024;12(2): e0206323. DOI:10.1128/spectrum.02063-23.



# Area 6

## Epidemiology, Public Health and Healthcare

### Epidemiology and Clinical Biostatistics Group



#### GROUP COMPOSITION

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María Nieves Plana Farras  
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Silvia Fernández García  
Víctor Abraira Santos



#### LOCATION

Biostatistics Unit  
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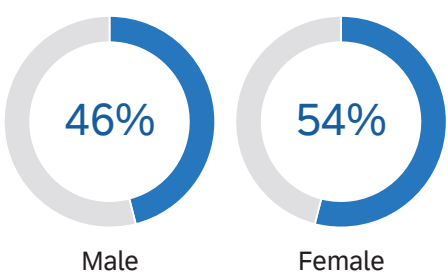


#### KEY WORDS

biostatistics, meta-analysis, systematic reviews, regression models, evidence-based medicine, adaptation



#### BREAKDOWN BY GENDER



Male Female

NETWORKS AND ALLIANCES

- CIBER for Epidemiology and Public Health
- Cochrane Collaborating Centre of the Community of Madrid
- Queen Mary University London (United Kingdom)
- Monsash University (Australia)
- WHO Collaborating Center for Women’s Health. University of Birmingham (United Kingdom)
- University of Liverpool (United Kingdom)



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

- To promote the synthesis of the best scientific knowledge available in order to support informed decision-making in health matters.
- To evaluate clinical practice in order to obtain relevant and useful information for the improvement of diagnostic and therapeutic adaptation.
- Evaluation, development and validation of statistical methods for research on prognosis, with primary data from patients or secondary data from systematic reviews.
- To promote the use of the optimal research methodology and the most advanced biostatistical techniques for the development of clinical-epidemiological research.

ACTIVITY INDICATORS 2024

- 1 competitive European grant led: JRC Tender
- 2 competitive national public projects led: ISCIII
- 3 private projects led
- 2 competitive Human Resources contracts
- 52 publications
- IF: 280.90
- Publications in Q1: 36 (69%)
- Publications in D1: 16 (31%)
- 1 doctoral thesis supervised and read
- Evaluators in different national institutions: 3 researchers
- 1 application for European patent 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 ISBNs (978-84-09-04309 and 978-84-09- 04308) on MAPAC algorithms.
- 2 intellectual property registries: Metadisc 2.0 Application No.: 2110269633104 and APP MAPAC-DX Application No.: 2211082593771
- Celebration of 30 years since the creation of the Biostatistics Unit of IRYCIS and its Ramón y Cajal University Hospital.

MAJOR MILESTONES

1. The Cochrane Center of the Community of Madrid is a member of the Cochrane Iberoamerican Consortium, which has been selected as one of the 5 Units for Evidence Synthesis acknowledged by Cochrane at global level in order to opt for competitive funding for Evidence Synthesis for International Organizations (WHO, PAHO, NICE, Wellcome Trust).
2. A coordinated project granted (AES2024): “Development and external validation of a comprehensive model for PREdiction of VulnErability in Small Newborns. Converging methods for primary research and synthesis. PREVENEP Study”. (PI24/01406).
3. A Río Hortega AES 2024 contract granted (CM24/00152).
4. European funding by the “Joint Research Centre (JRC)” for an update in recommendations for screening and prevention of colorectal, breast and cervical cancer in the European Clinical Practice Guidelines . (943473-IPR-2022).
5. Publication of 2 systematic Cochrane reviews on diagnostic tests, within an international collaboration with the University of Birmingham (PMID: 39400904 and PMID: 39679851).

BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

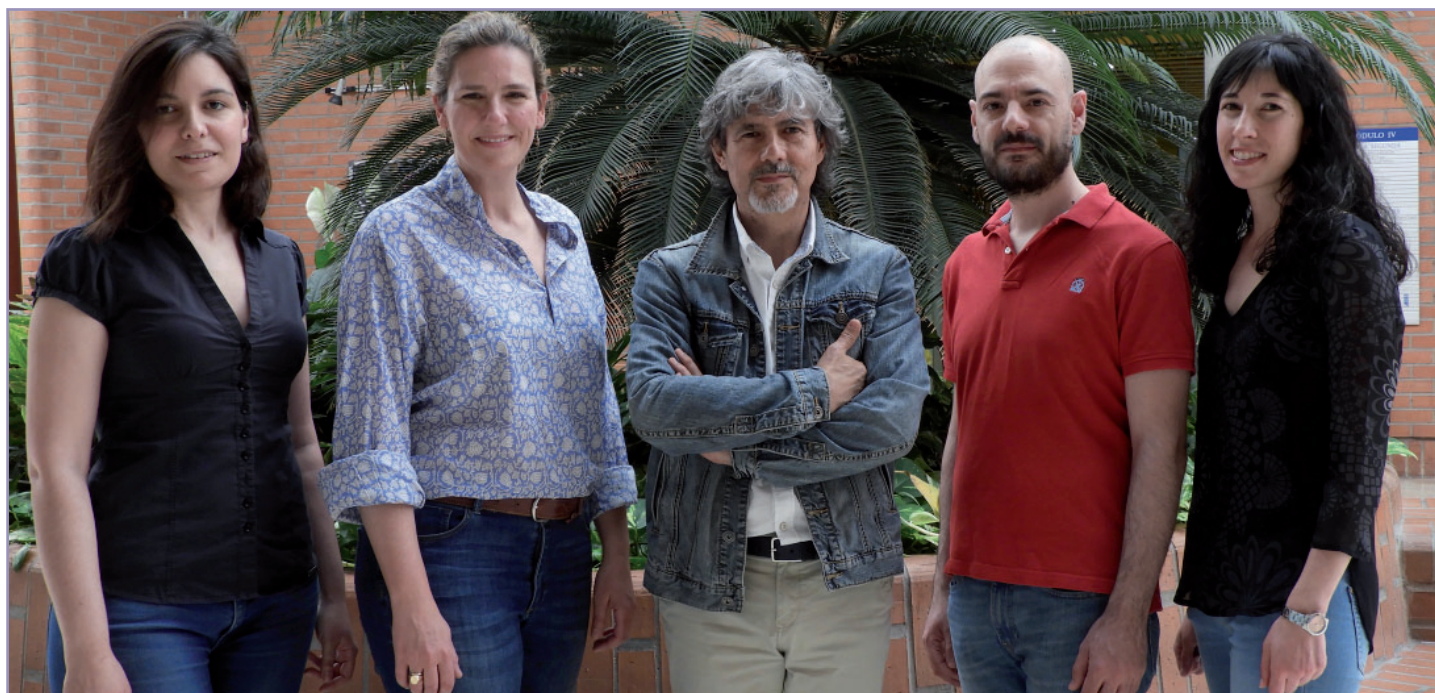
	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
2020	58	279,19	4,81	38	66	20	34
2021	64	394,78	6,17	47	73	17	27
2022	51	629,49	14,31	40	78	20	39
2023	49	360,71	9,02	33	67	9	18
2024	52	280,90	6,25	45	87	16	31
	274	1945,07	8,58	203	74	82	30

# Area 6

## Epidemiology, Public Health and Healthcare

### Pharmacoepidemiology Group

21



#### GROUP COMPOSITION

##### Head

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##### Principal Investigators

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Sara Rodríguez Martín

##### Collaborating Staff

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Diana Barreira Hernández  
Encarnación Fernández Antón  
Gabriela Alonso Martínez  
Victoria Lerma Hambleton



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Pharmacology Unit - Clinic- Hospital  
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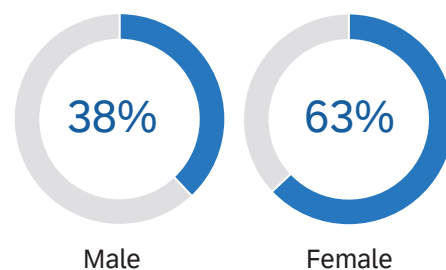


#### KEY WORDS

medications, adverse reactions,  
pharmacoepidemiology,  
pharmacovigilance, safety, medication  
risks, efficacy, observational studies



#### BREAKDOWN BY GENDER





# Area 6

## Epidemiology, Public Health and Healthcare

### Pharmacoepidemiology Group

#### NETWORKS AND ALLIANCES

- REGISCAR: Registry for severe skin reactions caused by medications – International Consortium
- International Osteoarthritis Foundation
- Teófilo Hernando Foundation



#### LINES

- Atherothrombotic events, use of medications and environmental factors.
- Severe skin reactions caused by medications (Type IV hypersensitivity medications). Clinical-epidemiological study and search for sensitivity markers.
- Pharmacoepidemiologic evaluation of chemoprotectors in gastrointestinal cancer.

#### STRATEGIC OBJECTIVES

- To achieve the consolidation of the research group, when young members opt for more stable positions at the university and/or hospital, placing our group as a reference in pharmacoepidemiologic research, and encouraging collaboration with groups in our clinical-epidemiological environment and other settings.
- To consolidate PIELenRed in the Community of Madrid as an interdisciplinary research platform, and to extend collaboration to other hospitals in the national territory, sustaining its integration into the International RegiSCAR Consortium.
- To expand access to other information sources in addition to BIFAP.

#### ACTIVITY INDICATORS 2024

- 1 competitive public project led: ISCIII
- 2 private projects led
- 1 competitive Human Resources contract with public agency led: AEMPS
- 4 publications
- IF: 15.60
- Publications in Q1: 4 (100%)
- 2 book chapters
- 1 technical document on CNS stroke.
- Evaluators in national institutions: 1 PI
- Member of editorial board: 1 PI

#### MAJOR MILESTONES

1. Publication on the role of new antidiabetics in primary prevention for chronic renal disease.. Rodríguez A, Fernández B, Ortiz A, Gil M, Rodríguez S, Ruiz G, Fernández E, Ruilope LM, de Abajo FJ. Glucose-Lowering Drugs and Primary Prevention of Chronic Kidney Disease in Type 2 Diabetes Patients: A Real-World Primary Care Study. Pharmaceuticals. 2024;17(10): 1299. DOI:10.3390/ ph17101299.
2. Participation of Dr. FJ de Abajo in the Stroke Strategy of the National Health System.
3. Award to the best research article from the Spanish Society of Clinical Pharmacology: “Antiplatelet Drugs as chemopreventive agents for Digestive Cancer (AD-DC): A Cohort Study”.
4. Formalization of a new contract with the Spanish Agency of Medications and Healthcare Devices for funding the PIELenRed Consortium.
5. Collaboration with the Digestive Tract Unit of the University Hospital de La Princesa and the Teófilo Hernando Foundation for conducting a project on the efficacy of H. pylori treatment in Primary Care.

#### BIBLIOMETRICS 2020-2024

(only original articles, editorials, guidelines and reviews)

	Articles	Accumulated IF	Mean IF	Q1 or Q2 articles	% in Q1 or Q2	D1 articles	% in D1
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
2024	4	15,60	3,90	4	100	0	0
	34	219,91	6,12	29	90	6	22

# Area 6

Epidemiology, Public Health and Healthcare

Physiotherapy in Women's Health Processes Group



### GROUP COMPOSITION

**Head**  
María Torres Lacomba  
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**Principal Investigator**  
María Torres Lacomba

**Collaborating Staff**  
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Beatriz Sánchez Sánchez  
Carmen María Hernández Iglesias  
Cristina del Valle Rubido  
Fernando Vergara Pérez  
Jesús Lázaro-Carrasco De La Fuente

Laura Lorenzo Gallego  
María José Yuste Sánchez



### LOCATION

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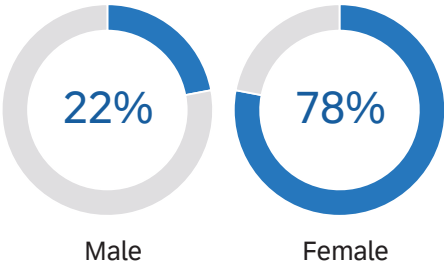


### KEY WORDS

physiotherapy, women's health, pelvic floor dysfunctions, breast cancer, gynaecological cancer, genitourinary syndrome of menopause, pelvic pain, therapeutic exercise, clinimetry



### BREAKDOWN BY GENDER



<p><b>LINES</b></p> <ul style="list-style-type: none"><li>• Evaluation of conservative and invasive therapies in genitourinary syndrome of menopause.</li><li>• Preparation of educational programs for the prevention and/or management of sequelae derived of oncology treatment in female oncologic processes.</li><li>• Validation of PRO questionnaires.</li></ul> <hr/> <p><b>STRATEGIC OBJECTIVES</b></p> <ul style="list-style-type: none"><li>• To identify and develop diagnostic and therapeutic strategies against pelvic floor dysfunctions secondary to female oncologic processes, particularly in women treated for breast cancer or gynaecological cancer.</li><li>• Design and evaluation of therapeutic interventions for prevention and treatment of genitourinary syndrome of menopause.</li><li>• Design and evaluation of therapeutic interventions for prevention and treatment of chronic pelvic pain.</li><li>• Development of educational programs for prevention and/or treatment of pelvic floor dysfunctions and other sequelae that might be associated with female oncologic processes.</li><li>• Validation of self-completion questionnaires for knowledge and objectification of signs, symptoms and quality of life in Spanish women with pelvic floor dysfunctions.</li></ul>	<p><b>ACTIVITY INDICATORS 2024</b></p> <ul style="list-style-type: none"><li>• 1 competitive public project led: ISCIII</li><li>• 4 clinical trials led</li><li>• 7 publications</li><li>• IF: 11.60</li><li>• Evaluators for national public agencies: 1 PI</li><li>• 1-month stay in national centres:<ul style="list-style-type: none"><li>◦ University of San Sebastián</li></ul></li><li>• 2 visitors received and 14-day stay:<ul style="list-style-type: none"><li>◦ Ribeirão Preto School of Medicine of the University of São Paulo, Brazil</li><li>◦ Universidade Federal de São Carlos, Brazil</li></ul></li></ul> <hr/> <p><b>MAJOR MILESTONES</b></p> <ol style="list-style-type: none"><li>1. Finalization of the concept test and processing of the patent for project DTS22/00141. The concept test has been completed, advancing in technological development and allowing to manage the patent processing after providing the review requested. This has also allowed to apply for a DTS 2025 to continue the model validation.</li><li>2. Consolidation of the collaboration structure between the Gynaecology and Obstetrics Unit and the Unit for Physiotherapy in Women’s Health of the UAH, allowing the development of pelvic health projects.</li><li>3. Completion of the pilot test for the randomized clinical trial (RCT), which represents a key advance in the validation for the methodological design of the study, that has been requested in the AES LEIS 2025 call.</li><li>4. Obtention of an FPI competitive contract of the Ministry, ensuring support for training and development of research within the group.</li><li>5. Visits by researchers with international prestige from Brazil, to explore alliances in female health and pelvic health. Contacts were established for collaborations in future joint research projects.</li></ol>
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# Area 6

## Epidemiology, Public Health and Healthcare

### Drug Utilization and Health Outcomes of Pharmacotherapy Group



#### GROUP COMPOSITION

##### Head

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##### Principal Investigators

Ana Maria Álvarez Díaz  
Manuel Vélez Díaz-Pallarés

##### Collaborating Staff

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Carmen Cortés Palomar Fernández  
Celia Acosta Cano  
Covadonga Pérez Menéndez-Conde  
Eva Delgado Silveira  
Hilario Martínez Barros  
Javier Saez de la Fuente  
Lucía Quesada Muñoz

María Teresa Gramage Caro  
María de los Ángeles Parro Martín  
María Dolores Molina Mendoza  
María Muñoz García  
Marina Sánchez Cuervo  
Miguel Ángel Rodríguez Sagrado  
Miriam Martín Rufo  
Noelia Espadas Hervas  
Noelia Vicente Oliveros



#### LOCATION

Pharmacy Unit  
3rd Floor – Right  
Ramón y Cajal University Hospital

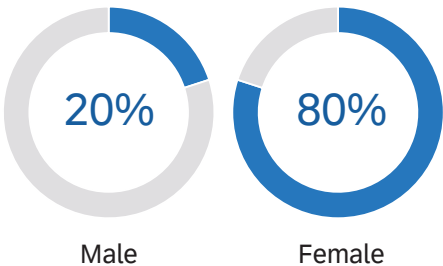


#### KEY WORDS

use of medications, safe use of medications, pharmaceutical care, innovation in the use of medications, innovation in management by processes, humanization, health outcomes of pharmacotherapy



#### BREAKDOWN BY GENDER



## NETWORKS AND ALLIANCES

- Spanish Society of Hospital Pharmacy (SEFH)
- EAHP Sustainability Working Group
- RED MAPAC
- University of Alcalá
- Polytechnic University of Madrid
- Francisco de Vitoria University



## LINES

- Safety, efficiency, quality and health outcomes in the utilization of medications:
  - Safety and new technologies in the process of use of medications.
  - Pharmaceutical care with health outcomes
  - Efficacy and safety in the use of medications
  - Personalized therapies
- Innovation in management by processes
- Humanization

## STRATEGIC OBJECTIVES

- Impulsar una investigación de excelencia dirigida a mejorar la atención, la salud y la calidad de vida de pacientes, con transferencia de los resultados a la práctica clínica.
- Atención farmacéutica, continuidad asistencial y uso apropiado de medicamentos en pacientes mayores y crónicos.
- Cronicidad en pacientes con VIH.
- Uso de antibióticos: integración en equipos PROA.
- Humanización: plan funcional, plan de comunicación, bienestar.
- Integración en el equipo de Asma, investigación de resultados en salud y de calidad de vida.
- Sistema de inteligencia artificial para predecir adherencia a antineoplásicos orales "ADHAN".

## ACTIVITY INDICATORS 2024

- 8 private projects led
- 7 clinical / observational studies led
- 1 competitive Human Resources contract
- 15 publications
- IF: 31.80
- Publications in Q1: 4 (27%)
- 7 awards
- Evaluators of projects: 4 researchers
- Members of editorial boards: 2 researchers
- Translation: 2 clinical guidelines, 2 training itineraries, and 1 document of recommendations.
- Participation in activities with impact on society: workshop, conferences and interviews.
- 8 visitors received and 25-month stay:
  - Polytechnic University of Madrid

## MAJOR MILESTONES

1. In 2024, the publication of "Spanish version of the STOPP/START Criteria 3. Advances in the detection of inappropriate prescription of medications in elderly persons" received the Beltrán Baguena Award to the best publication in the Geriatrics and Gerontology Journal in 2023. This article presents the translation of the latest version of the STOPP-START Criteria into Spanish, and reviews the utility and use of the previous versions translated.
2. Fernández J, Delgado E, González E, Álvarez AM, Vélez M. Potentially inappropriate prescriptions and potential prescription omissions in older people living with HIV. HIV Med. 2024;25(5): 587 - 599. DOI:10.1111/hiv.13616. This publication is a multicentre study in 10 hospitals within the Community of Madrid, analysing the inappropriate prescription and omission of appropriate medications in the elderly population with HIV. Results show there is a high prevalence of inappropriate prescription in this patient cohort, and the need to develop strategies in order to reduce it.
3. Esteban B, Serrano DR, Pérez Menéndez C, Vicente N, Álvarez A, Abete JF, Martín P. Stability of meropenem in portable elastomeric infusion devices: which protocol should be implemented in clinical practice?. Microbiol Spectr. 2024;12(2): e0206323. DOI:10.1128/spectrum.02063-23. This publication summarizes the stability of meropenem in elastomeric infusion devices, for patients to take outside hospital, thus improving their quality of life, but without compromising efficacy and safety. Analysis by HPLC have been conducted, and differences were found according to the concentration of meropenem; therefore, it is necessary to include in the protocol the use of this drug in elastomeric infusion devices.
4. The group participates for the first time in the obtention of a Río Hortega contract, AES 2024 call (ISCIII). This incorporation allows to retain the talent of Hilario Martínez and to advance in the development of the project: "e-REALITI: Evaluation and follow-up of real-life outcomes in order to optimize access to therapeutic innovation."
5. Nine (9) theses are being supervised by pharmacists from the group; 7 of them are about pharmacy care and improvement in health outcomes, reduction in adverse effects and lack of efficacy, and improvement of adherence to treatment in patients seen at hospital: chronic elderly, oncohematologic, with severe asthma, HIV and heart failure. Specifically, one of these theses is associated with the application of new technologies to improve traceability in the preparation of chemotherapy treatments, and another one with the stability of antibiotics in elastomeric infusion devices.

# Incorporation of new groups

In 2024, the incorporation and integration of four new research groups was approved in our Institute. One of them is led by a teaching researcher from the Autonomous University of Madrid (UAM), and the rest are clinical groups conducting their activity at the Ramón y Cajal University Hospital (HURYC). All groups meet the criteria of excellence and professionalism required and contribute new lines of research to our institution, which will promote the rise of new synergies of interest.

In compliance of the 2021-2025 Plan for Integration of IRYCIS, the Scientific Management and the Research Committee have evaluated favourably their adscription to IRYCIS. Subsequently, the relevant area coordinators have assigned them the most adequate adscription unit for their scientific development and their current or potential collaborations with existing groups.

Starting on the 2025 Scientific Report, said groups will have their relevant section with the summary of their annual scientific production, like the rest of IRYCIS groups.

## Area 3: Cancer

### Translational Research in Lung Cancer (established group)



Managed by **Dr. Pilar Garrido López**, Head of the Medical Oncology Unit of the HURYC, it includes a multidisciplinary team formed by oncologists, surgeons, pathologists, radiologists and pulmonologists. They are currently leading a significant number of projects and clinical trials, as well as having strategic alliances at national and international level. The objective of the group, when incorporating to IRYCIS, is to promote translational and clinical research into lung cancer under a multidisciplinary outlook, encouraging the development of internal and external alliances that promote excellence. All this is oriented towards an improvement in patient opportunities, with the goal to provide significant advances in the fight against lung cancer

## Area 3: Cancer

### Translational Research in Cancer (established group)



Managed by **Dr. Gema Moreno Bueno**, Professor of Biochemistry at the Autonomous University of Madrid, Associate Professor at the University of Texas & MD Anderson Cancer Center (USA), and Head of the Group of Research in Breast and Gynecologic Cancer of CIBERONC. The group, coming from the Autonomous University- Sols-Morreale Institute of Biomedical Research (CSIC-UAM), provides new lines of research for the identification, characterization and validation, through multidisciplinary approaches, of prognostic/predictive markers and potential therapeutic targets for tumours, particularly breast, gynaecological and sarcomas. There are two other principal investigators in the group and, with the rest of the team, they develop several research projects funded competitively by public and private entities, as well as multiple national and international strategic alliances.



## Area 4: Tools for Advanced Medicine

Diagnostic Tools and Precision Medicine in Thyroid Conditions (Established Group)



Managed by **Dr. Pablo Valderrábano Herrero**, Specialist Physician in the Endocrinology and Nutrition Unit of the HURYC, this group is formed by a multidisciplinary team including specialists in Endocrinology, Surgery, Anatomopathology, Radiology, and Nuclear Medicine, as well as biomedical engineers. The group has active research projects, contracts for research staff obtained in competitive competition, and an outstanding innovative trajectory. Research is focused on the development of technologies to improve diagnostic precision and reproducibility of ultrasound imaging in clinical practice, as well as on the development of strategies allowing to implement precision medicine for diagnosis and treatment of patients with thyroid neoplasias.

## Area 5: Chronic Conditions and Surgery Research

Simulation and Computer-Assisted Personalized Surgery (Access Group)



Managed by **Dr. Julio Acero Sanz**, Head of the Maxillofacial Surgery Unit of the HURYC. The group has different ongoing clinical trials and research projects. Cutting-edge and innovative methods are used for its research (virtual reality, artificial intelligence, personalized reconstructive surgery, virtual designs, and 3D printing, among others), and it intends to achieve a change in paradigm for craniomaxillofacial and oncologic reconstructive surgery, replacing classic approaches, and a change in clinical guidelines of action. The group has outstanding alliances with companies for the co-development of healthcare products, collaboration with the Biomedical Data Science and Engineering group (IRYCIS Area 4), with whom they have launched a MISIÓN IRYCIS 2030 Initiative, and with associations of patients with head and neck cancer, in order to ensure the social impact of their research



The IRYCIS Associated Clinical Research Staff (ACRS) includes the staff of the Ramón y Cajal University Hospital with research activity at the Institute, either developing clinical trials, both in the role of Principal Investigators or collaborating staff, or competitive research and/or innovation research projects, public or private, national or international, as well as signing indexed scientific publications. ACRS are grouped according to the department or unit from which each of them comes.

### ACTIVITY INDICATORS 2024

- ACRS: 327, from 50 different units / departments
- 14 active competitive public projects led
- 149 active clinical trials led
- 27 active agreements and other private contracts
- 236 publications
- Publications in D1: 51 (22%)
- Publications in Q1: 124 (53%)
- Publications led: 142 (60%)
- 1 doctoral thesis supervised and read
- 10 new innovative ideas

### CURRENT INDUSTRIAL AND INTELLECTUAL PROPERTY IN 2024

<b>DR. BUELGA SUÁREZ</b> <b>METHOD AND SYSTEM FOR OBTAINING ECG DATA AND TO-DETECT AND FILTER LEFT VENTRICULAR ASSIST DEVICEINTER-FERENCES</b> APPLICATION FOR PRIORITY EUROPEAN PATENT EP24383157.5	<b>DR. MIGUELENA HYCKA</b> <b>IMPLANTABLE INTRAVENTRICULAR SYSTEM</b> APPLICATION FOR PRIORITY EUROPEAN PATENT EP24382432.3	<b>DRA. PECHARROMÁN DE LAS HERAS</b> <b>MAPAC 2. APP-SISTEMA AYUDA PETICIÓN TC-RX SIMPLE EN URGENCIAS</b> SOFTWARE REGISTRATION 2211082593771
<b>DRA. HERNÁNDEZ DE ARRIBAS</b> <b>SIGMA: : Integrated System for Management and Monitoring of Students</b> SOFTWARE REGISTRATION 2203100678416	<b>DR. FERNÁNDEZ VELASCO</b> <b>Renal Transplant Recipients Database</b> SOFTWARE REGISTRATION 1804196616064	<b>DR. MENA MATEOS</b> <b>Handbook of Surgical Emergencies - 5th edition</b> CREATIVE COMMONS 1609029084269
<b>ANA B. ROMOJARO RODRÍGUEZ DESIRÉE DE MIGUEL MORALES TERESA GÓMEZ GONZÁLEZ</b> <b>Harness for moving patients with reduced mobility</b> PATENT P201530553	<b>DRA. PRESA ABÓS DR. CHIVA DE AGUSTÍN DRA. VICENTE ZAPATA</b> <b>PREVEMAMA</b> BRAND M4126360	<b>DR. DE LA CALLE REVIRIEGO</b> <b>Chronic pain: Electrical Quantitative Sensory Assessment System for Failed Back Surgery Syndrome</b> EUROPEAN PATENT EP21383224.9

## List of Associated Clinical Research Staff in 2024

Associated Clinical Research Staff	Unit Name
RAÚL PERONA MADRIGAL	Associated Research Staff
LUCÍA BASELGA SEGIMÓN	ACRS-Alergia
LAURA VICTORIA CARPIO ESCALONA	ACRS-Alergia
ALMUDENA CARRASCO MORENO	ACRS-Alergia
PATRICIA GUTIÉRREZ CANALES	ACRS-Alergia
NATALIA RODRÍGUEZ OTERO	ACRS-Alergia
SERGIO FONCUEVA CASADO	ACRS-Anatomía Patológica
MARÍA CARMEN ARIÑO PALAO	ACRS-Anatomía Patológica
MARÍA ALEJANDRA CAMINO-A-LIZARRALDE AIZA	ACRS-Anatomía Patológica
ANTONIA NAVARRO CANTERO	ACRS-Anatomía Patológica
ESTEFANÍA ROMIO DE LAS HERAS	ACRS-Anatomía Patológica
ANA SAIZ GONZÁLEZ	ACRS-Anatomía Patológica
ILARIA CORBELLÀ	ACRS-Anestesiología
ISMAEL ALEJANDRO ACEVEDO BAMBAREN	ACRS-Anestesiología
JOSÉ LUIS DE LA CALLE REVIRIEGO	ACRS-Anestesiología
RAQUEL CASAS DAPENA	ACRS-Anestesiología
CRISTINA CERRO ZABALLOS	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
MARÍA LUISA HERNÁNDEZ BULE	ACRS-Bioelectromagnetismo
ELENA TOLEDANO MACÍAS	ACRS-Bioelectromagnetismo
MARÍA ANTONIA MARTÍNEZ PASCUAL	ACRS-Bioelectromagnetismo
ALEJANDRO ÚBEDA MAESO	ACRS-Bioelectromagnetismo
IGNACIO ARRIBAS GÓMEZ	ACRS-Bioquímica Clínica
LAURA CAJA GUAYERBAS	ACRS-Bioquímica Clínica
ANA MARÍA GARCÍA CANO	ACRS-Bioquímica Clínica
ANA GÓMEZ LOZANO	ACRS-Bioquímica Clínica



Associated Clinical Research Staff	Unit Name
MIRIAM MENACHO ROMÁN	ACRS-Bioquímica Clínica
JOSÉ MANUEL DEL REY SÁNCHEZ	ACRS-Bioquímica Clínica
SONIA RODRÍGUEZ FIÑAGA	ACRS-Bioquímica Clínica
MARTA ROSILLO CORONADO	ACRS-Bioquímica Clínica
MARÍA DEL CARMEN SANTIUSTE PUENTE	ACRS-Bioquímica Clínica
MARÍA PAZ GONZÁLEZ PORTILLA	ACRS-Cardiología
EDUARDO CASAS ROJO	ACRS-Cardiología
MARÍA JESÚS ESTEBAN SASTRE	ACRS-Cardiología
GABRIELA HAYDEE TIRADO CONTE	ACRS-Cardiología
JOSÉ LUIS VÁZQUEZ MARTÍNEZ	ACRS-Cardiología Pediátrica
JORGE GÓMEZ-ARNAU RAMÍREZ	ACRS-Centro Salud Externos
PAULO GARCÍA CHUMBIRAY	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
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
MARÍA OLGA GONZÁLEZ ALBARRÁN	ACRS-Endocrinología y Nutrición
MIGUEL ANTÓN ÁMEZ SEGOVIA	ACRS-Enfermedades Infecciosas
LAURA LUNA GARCÍA	ACRS-Enfermedades Infecciosas
CARMEN MARÍA CANO DE LUQUE	ACRS-Enfermedades Infecciosas
MARTA ROSAS CANCIO-SUÁREZ	ACRS-Enfermedades Infecciosas
ARANZAZU ALDAMIZ-ECHEVARRÍA DEL PALACIO	ACRS-Enfermería
MARÍA SONIA AMORES UMBERT	ACRS-Enfermería
ELENA ARCE SEGURA	ACRS-Enfermería
RAQUEL CANALEJAS DÍAZ	ACRS-Enfermería
ANA CARRALERO MONTERO	ACRS-Enfermería
ANA MARÍA CASTILLO AYALA	ACRS-Enfermería
SARA FERNÁNDEZ GUIJARRO	ACRS-Enfermería
ANA MARÍA FUENTES GIL	ACRS-Enfermería
VERÓNICA MARTÍN GUERRERO	ACRS-Enfermería
AINOA MORO BLÁZQUEZ	ACRS-Enfermería

Associated Clinical Research Staff	Unit Name
ELENA NIETO FERNÁNDEZ	ACRS-Enfermería
MARTA PENCHE ESCORIAL	ACRS-Enfermería
ESTHER PÉREZ TRIS	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
INÉS GÓMEZ BLÁZQUEZ	ACRS-Farmacia
TAMARA LINARES POLO	ACRS-Farmacia
ÁLVARO MOLINA RUANO	ACRS-Farmacia
SOFÍA SÁNCHEZ-IZQUIERDO YARNOZ	ACRS-Farmacia
MARÍA SANTOS SAN SEGUNDO	ACRS-Farmacia
JORGE FERNÁNDEZ FRADEJAS	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
ALBA GARCÍA ALONSO	ACRS-Hematología
JOSÉ LUIS LLAGUNO MARTÍN	ACRS-Hematología
VIKTORYIA VAITSEKHOVICH	ACRS-Hematología
ENRIQUE ARRONTES CABALLERO	ACRS-Hematología
BEATRIZ ASTIBIA MAHILLO	ACRS-Hematología
CRISTINA BLÁZQUEZ TALABÁN	ACRS-Hematología
VIOLETA HERNÁNDEZ DE ARRIBAS	ACRS-Hematología
ANA JIMÉNEZ MARTÍN	ACRS-Hematología
ANA VALLÉS CARBONERAS	ACRS-Hematología
MARÍA JOSÉ MARTÍN HURTADO	ACRS-Hospitalización
SONIA ORTEGA SÁNCHEZ	ACRS-Inmunología
IVÁN GARCÍA DE LA TORRE	ACRS-Inmunología
CARLOTA GARCÍA-HOZ JIMÉNEZ	ACRS-Inmunología
VIVIAN LIZETH STEWART DEL CID	ACRS-Inmunología
AARON ROLANDO BLANDINO ORTIZ	ACRS-Medicina Intensiva
SUSANA GARCÍA PLAZA	ACRS-Medicina Intensiva
JOSEFA AURORA LIÉTOR VILLAJOS	ACRS-Medicina Intensiva

Associated Clinical Research Staff	Unit Name
RAÚL DE PABLO SÁNCHEZ	ACRS-Medicina Intensiva
SUSANA SÁNCHEZ ALONSO	ACRS-Medicina Intensiva
MARÍA CRUZ SORIANO CUESTA	ACRS-Medicina Intensiva
JUAN CARLOS MURCIANO FERNÁNDEZ	ACRS-Medicina Interna
ALBERTO CÓZAR LLISTÓ	ACRS-Medicina Interna
MARÍA DE LA CONCEPCIÓN SÁNCHEZ GALLEGO	ACRS-Medicina Interna
ODILE AJURIA ILLARRAMENDI	ACRS-Medicina Nuclear
MARÍA DEL PRADO ORDUÑA DÍEZ	ACRS-Medicina Nuclear
MARGARITA CABELLO VALLEJO	ACRS-Microbiología
ESMERALDA CASTILLO RODRÍGUEZ	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
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VANESSA LOPES MARTÍN	ACRS-Nefrología
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CÉSAR AGUILERA VEGA	ACRS-Neurología
SUSANA VALENCIANO ROZALÉN	ACRS-Neurología
ARACELI ALONSO CÁNOVAS	ACRS-Neurología
RODRIGO ÁLVAREZ VELASCO	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
PALOMA PARRA DÍAZ	ACRS-Neurología
ANA ISABEL PÉREZ MACÍAS	ACRS-Neurología



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CRISTINA LÓPEZ CABALLERO	ACRS-Oftalmología
JOSÉ MARÍA RODRÍGUEZ DEL VALLE	ACRS-Oftalmología
JAIME TEJEDOR FRAILE	ACRS-Oftalmología
MARÍA GIÓN CORTÉS	ACRS-Oncología Médica
ELENA CORRAL DE LA FUENTE	ACRS-Oncología Médica
CARMEN GUILLÉN PONCE	ACRS-Oncología Médica
ÍÑIGO MARTÍNEZ DELFRADÉ	ACRS-Oncología Médica
BLANCA ISABEL MORÓN GARCÍA	ACRS-Oncología Médica
CRISTINA SAAVEDRA SERRANO	ACRS-Oncología Médica
DANIEL MELERO GARCÍA	ACRS-Oncología Radioterápica
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
JOSÉ ALFREDO POLO RUBIO	ACRS-Oncología Radioterápica
SONSOLES SANCHO GARCÍA	ACRS-Oncología Radioterápica
LOURDES MONTES-JOVELLAR GONZÁLEZ	ACRS-Otorrinolaringología
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 LAPUERTA	ACRS-Psiquiatría
CARLOS RIAZA BERMUDO-SORIANO	ACRS-Psiquiatría

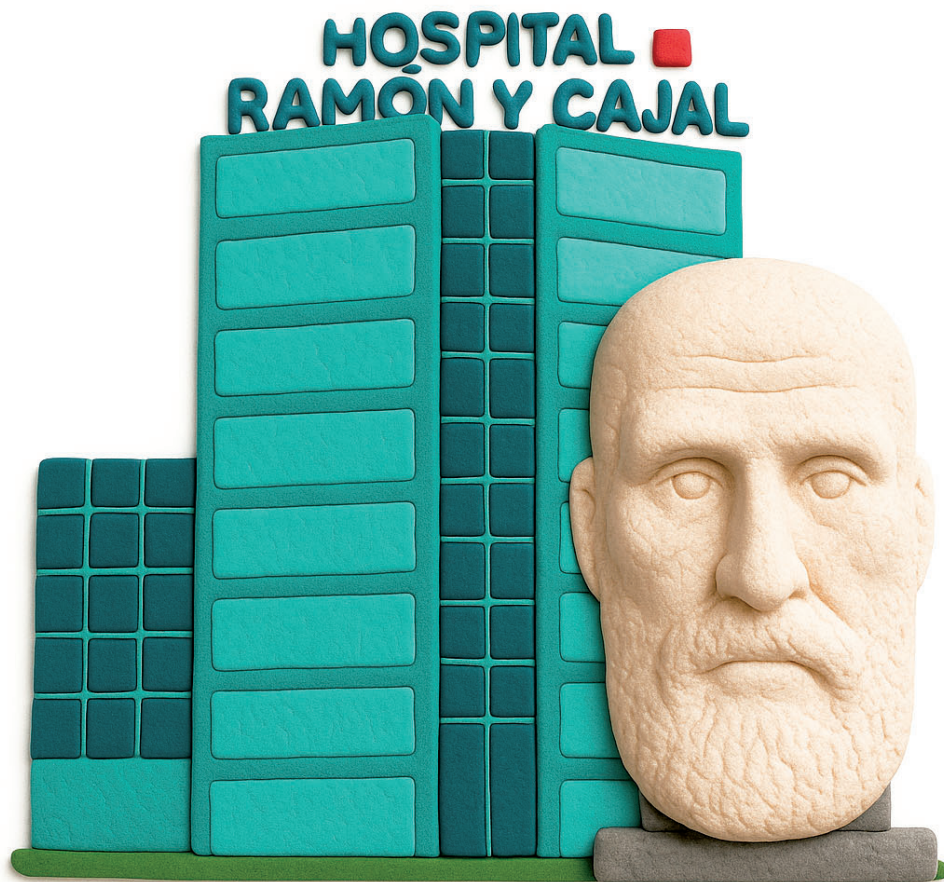
Associated Clinical Research Staff	Unit Name
MIGUEL VEGA PIÑERO	ACRS-Psiquiatría
LAURA GALLEGO MARTÍN	ACRS-Radiología
JAIME MOUJIR LÓPEZ	ACRS-Radiología
CATALINA NIETO GÓNGORA	ACRS-Radiología
MARÍA VANESA DE SANTOS SERRANO	ACRS-Radiología
JAVIER BLÁZQUEZ SÁNCHEZ	ACRS-Radiología
ELENA CANALES LACHÉN	ACRS-Radiología
EDUARDO FANDIÑO BENITO	ACRS-Radiología
ANA GARCÍA DE VICENTE	ACRS-Radiología
RAQUEL GARCÍA LATORRE	ACRS-Radiología
MIGUEL ÁNGEL GÓMEZ BERMEJO	ACRS-Radiología
JESÚS JAVIER MARTÍN PINACHO	ACRS-Radiología
JOSÉ CARLOS MÉNDEZ CENDÓN	ACRS-Radiología
MARÍA JESÚS MUÑOZ BELTRÁN	ACRS-Radiología
MIGUEL NAVARRO FERNÁNDEZ-HIDALGO	ACRS-Radiología
INÉS PECHARROMÁN DE LAS HERAS	ACRS-Radiología
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