

A close-up photograph of a microscope with blue nitrile gloves on the hands. The microscope is focused on a slide, with a bright light illuminating the specimen. The background is blurred, showing more of the microscope and the gloves.

2022

Annual report

Biomedical Research
Institute of Lleida



Presentation

It is a pleasure to present the annual report of the activity of the Institute of Biomedical Research of Lleida during 2022. This report represents a comprehensive description of the institutional and scientific activity of the Institute and the achievements presented are the result of the hard work of the 37 research groups of the institute and the support structure provided by the core scientific facilities and the administration personnel. I would also like to take this opportunity to acknowledge the important contributions made by the different committees that give support to the executive directorate in steering the activity of the institute, especially the internal and the external Scientific Committees.

The quality of the research carried out by the groups of the institute continues to be excellent even when compared to biomedical research institutes significantly larger than IRBLleida. It is important to highlight that 56% of the publications of the institute are in scientific journals in the first quartile, and our groups have a leadership role in over 50% of them. Moreover, the average impact factor of the publications during 2022 is at its highest (7,22), showing a robust increase of almost 50% in the last five years (from 4.84 to 7.22). Compared to the previous year, there has been a significant increase in the competitive funds obtained for research projects (85%) and human resources (38%). In addition, the institute was able to further promote the research and innovation activity of the groups by funding internal competitive calls for collaborative research projects, human resources and international mobility, through an Intramural REsearch Program (IREP) accounting for almost 720,000€. During 2022 we also set the new roadmap for the knowledge and technology transfer in the institute, with a new innovation strategic plan that will be fully deployed over the next three years.

It is also worth mentioning that during 2022 we had been able to maintain the recognition as one of the 41 centers of excellence in Catalonia and the "Human Resources Excellence in Research" (HRS4R) award of the European Union. In this year, we have also redefined the criteria defining a research group and incorporated the new category of Associated Clinical Group, which altogether constitutes an important milestone that will allow the institute to provide the necessary support to the research groups depending on their level of maturity. I would also like to sincerely thank the coordinators of the five research programs for their efforts and important contributions aimed at enhancing the quality of the research carried out in the center. IRBLleida has maintained its outreaching activity through the Unit of Scientific Culture and Innovation, engaging the general public of the Lleida region, an activity that has been externally recognized in 2022 by an award of the National Institute of Health (ISCIII) on Responsible Research and Innovation (RRI) and a competitive project funded by the Spanish Foundation for Science and Technology (FECYT). In exchange, the local society has increased their support to the activity of our institute through the generous contributions made by small and medium companies as well as individual donors.

Importantly, the activity of our institute is centered on improving the health of our society, and the research groups of IRBLleida continue to be at the forefront of the important advances on routine clinical practice, as demonstrated by the 12 clinical guidelines in which our groups have participated during 2022.



Main achievements



Main figures are for 2022, figures in brackets are for 2021.



Índex

Healthcare framework	5
Organization	7
Core facilities	23
Economic indicators	38
Communication	42
Research activity	48
Knowledge transfer and innovation	75
Research activity by areas and groups	78
Fundraising	150
Main funders	155



Healthcare framework



Healthcare and teaching framework

IRBLleida acts as a cluster of all biomedical research carried out in Lleida and incorporates two key stakeholders that conduct health research and implement innovation policies:

- The University of Lleida (UdL) includes researchers from the Faculties of Medicine and Nursing and Physiotherapy.
- The Department of Health, which includes research professionals from its health care providers:
 - Catalan Health Institute (ICS): Arnau de Vilanova University Hospital (HUAV), the Lleida Primary Health Care and Community and the Alt Pirineu-Aran Primary Health Care.
 - Gestió de Serveis Sanitaris (GSS): Santa Maria University Hospital (HUSM), Pallars Regional Hospital and Mental Health, and others.

It also interacts with the Lleida AgriFood Science and Technology Park and Agrotecnio, the research centre for agriculture, animal production and food technology at the ETSEA campus of the University of Lleida.

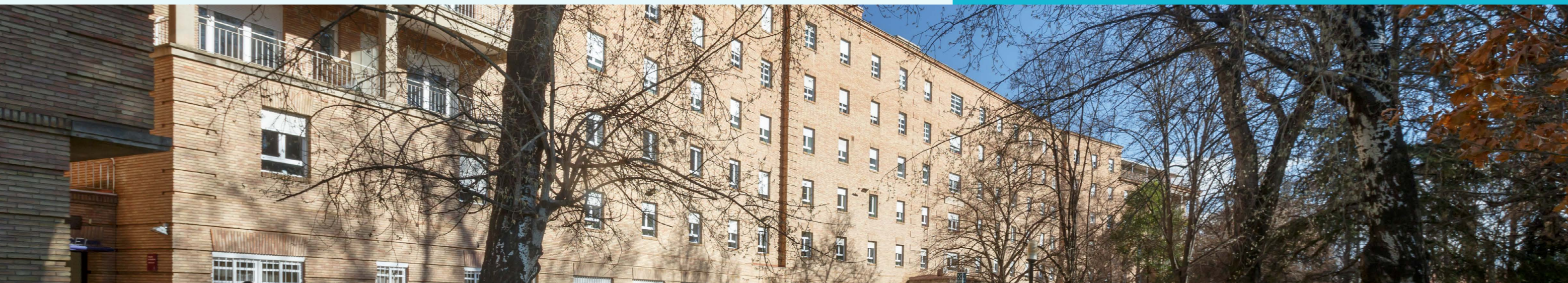
The Lleida Health Region includes the counties of Les Garrigues, La Noguera, Pla d'Urgell, La Segarra, El Segrià and L'Urgell. The provision of health, educational, cultural, commercial and professional services to people living in other municipalities in the district of Lleida, and in part of the 'La Franja', the Pyrenees and even the Terres de l'Ebre, make Lleida a centre of attraction that goes beyond the district itself (with 370,000 inhabitants) to cover the needs of its inhabitants. In terms of teaching, IRBLleida receives support from the Health Sciences area of the University of Lleida with the degrees of Medicine, Nursing and Physiotherapy, and Human Nutrition and Dietetics. UdL lecturers and IRBLleida researchers also participate in the teaching of the Biotechnology degree. Since September 2009, the bachelor's degree in Biomedicine has been taught in coordination with the University of Marburg, a pioneer in this degree in the world. IRBLleida has a large animal facility located in Torrelameu, equipped with state-of-the-art experimental operating theatres, with the main objective of training surgeons, and facilities to carry out research activity using porcine models.

Healthcare activity in data

The Arnau de Vilanova University Hospital (HUAV) had 395,350 outpatient consultations in 2022 (299,855 face-to-face visit and 95,495 telemedicine). There were 37,617 day hospital sessions, received 99,769 emergency visits and registered a total of 25,745 discharges. It is a hospital with 501 beds, including 355 conventional beds, 23 pediatrics beds, 4 ictus unit, 30 adult critical care beds and 10 neonatal ICU beds.

In addition, the Santa Maria University Hospital (HUSM) had 153,313 outpatient consultations, including 126,815 face-to-face visit and 26,498 telemedicine. It has had an annual activity of 7,277 hospital discharges and there were 8,669 day hospital sessions and 181,303 rehabilitation sessions during 2022. There were also 1,269 discharges in the mental health area and 956 discharges in the socio-health area. The Santa Maria University Hospital has 106 beds available for specialised care, including 98 beds for conventional hospitalisation and 8 critical beds as well as 31 beds for socio-health care and 67 beds for mental health care.

The Teaching Unit for the training of residents (MIR, PIR, IIR, EIR, etc.) of the HUAV and the HUSM has been accredited since 1984.





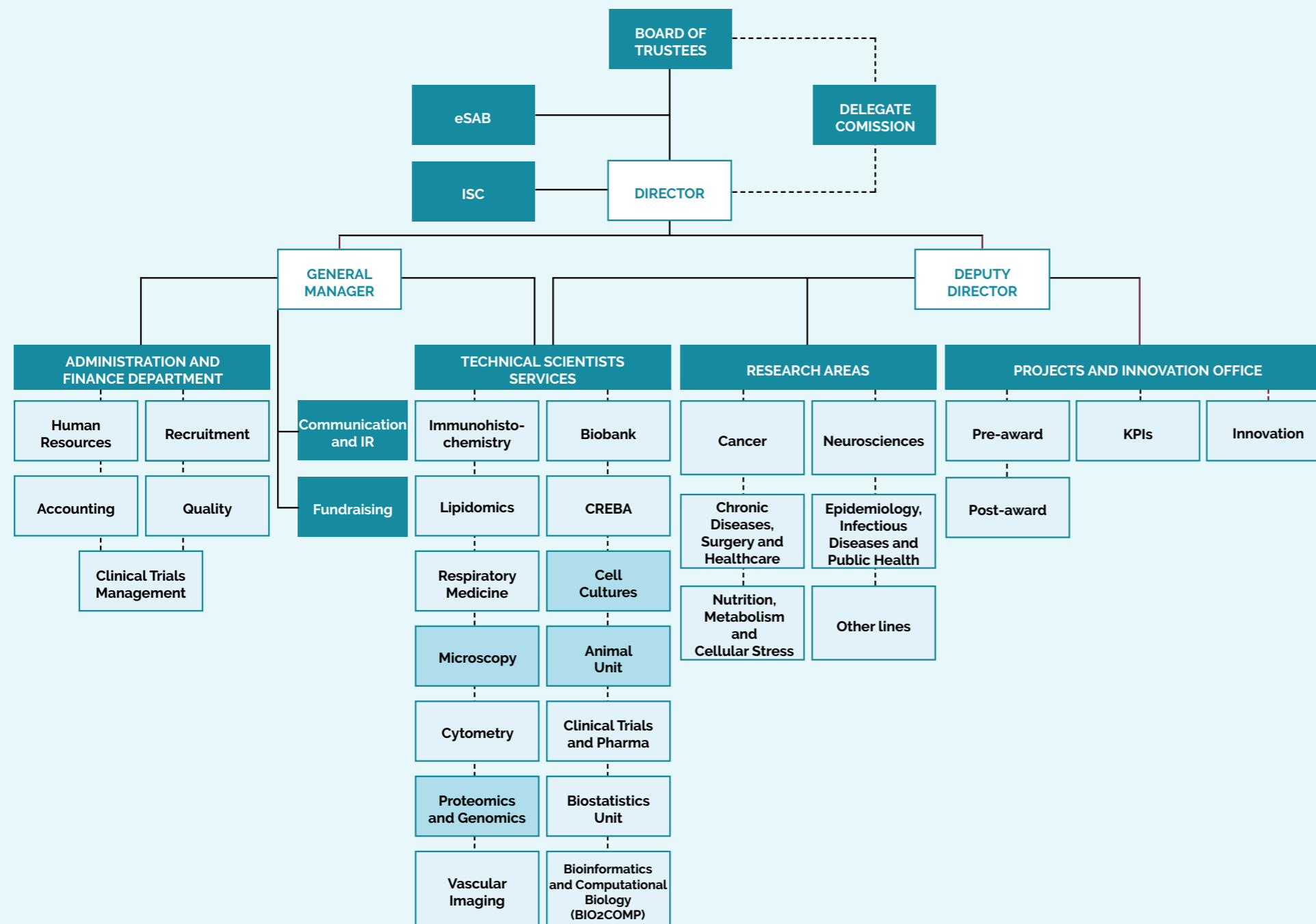
Organization

1. Board of trustees
2. Delegate commission
3. Internal scientific committee
4. External Scientific Advisory Board (eSAB)
5. Clinical investigation ethics committee
6. Animal experimentation ethics committees
7. Internal commissions



IRBLleida, in accordance with its statutes, is structured into the following bodies:

- Governing: board of trustees and its delegate commission.
- Advisory: the internal scientific committee (ISC) and the External Scientific Advisory Board (eSAB).
- Direction and management.



Managed by the IRBLleida

Managed by the UdL

SCIENTIFIC DIRECTION

Director

Dr. Diego Arango

Deputy Director

Dr. Joan Sayós

IRBLLEIDA MANAGEMENT OFFICE

Management

Ms. Eva López
Mr. Joan Vives

Secretariat

Ms. Naiara Vilaginés

Human resources, financial and clinical trials

Ms. Sílvia Aresté
Ms. Olívia Buisan
Ms. Anna Fernández
Ms. Elena Moscatel
Ms. Noelia Pérez
Dr. Alicia Sánchez de la Torre
Ms. Marta Sanvicens
Ms. Georgina Tortras

Reception and concierge

Mr. Fernando Tortras
Ms. Georgina Tortras

Projects and Innovación Department (project promotion and management, scientific production, valorisation and transfer)

Ms. Mònica Arango
Dr. Núria Bahi
Dr. Serafi Cambray
Ms. Anna Castelló
Ms. Judith Muñoz
Ms. Irene Rosell

Fundraising

Mr. Josep M. Bosch

Communication and public engagement

Ms. Meritxell Soria

Core facilities coordination

Dr. Maria Ruiz



1. Board of trustees

The governance, representation and senior management of IRBLleida will correspond to the board of trustees, which has all the necessary powers to achieve its foundational aims. Its composition in 2022 was as follows:

President

Hon. Dr. Josep Maria Argimon i Pallàs / Dr. Manel Balcells i Díaz

Counselor of the Department of Health of the Generalitat of Catalonia

First Vice-President

Dr. Gemma Geis i Carreras / Dr. Joaquim Nadal i Farreras

Counselor of the Department of Research and Universities of the Generalitat of Catalonia

Second Vice-President

Dr. Jaume Puy Llorens

Chancellor of the University of Lleida

Members

Sr. Xavier Aldaguer Manté

Secretary of Universities and Research in the Research and Universities Department of the Generalitat of Catalonia

Dr. Ferran Barbé Illa

Professor of medicine at the University of Lleida/Chief of the pneumology department at Hospital Universitari Arnau de Vilanova

Ms. Iolanda Font de Rubinat

General deputy director of research of the Research and Universities Department of the Generalitat of Catalonia

Dr. Joan Gómez Pallarès

General director of research of the Department of Business and Knowledge of the Generalitat of Catalonia

Ms. Montserrat Llavayol Giralt

General deputy director of health research of the Health Department of the Generalitat of Catalonia

Dr. Olga Martín Belloso

Vice-chancellor of research at the University of Lleida

Dr. Josep Pifarré Paredero

General manager of the Lleida Health Region

Ms. Ana Maria Plaza Tesías

General director for health planning of the Generalitat of Catalonia

Dr. Joaquim Ros Salvador

Professor of Biochemistry and Molecular Biology, University of Lleida

Dr. Lluís Rovira Pato

Director CERCA

Mr. Ramon Saladrígues Solé

General manager of the University of Lleida

Dr. Ramon Sentís Berges / Dr. Alfons Segarrara Medrano

Territorial general manager of the Catalan Institute of Health in Lleida

Mr. Joan Talarn i Gilabert

President of the Diputació de Lleida

Dr. Pilar Vaqué Castilla

Director of primary health care of the Catalan Health Institute in Lleida

Last meeting: 15/12/2022



2. Delegate commission

The board of trustees appoints, from among its members, a delegate commission. Its functions are to carry out the agreements adopted by the board of trustees, the periodic monitoring of the management tasks and of the agreements and conventions subscribed by the foundation, and to propose to the board of trustees the adoption of the agreements that correspond to this body, among others.

Dr. Joan Gómez Pallarès

General director of research of the Department of Business and Knowledge of the Generalitat of Catalonia

Dr. Olga Martín Belloso

Vice-chancellor of research at the University of Lleida

Ms. Ana Maria Plaza Tesías

General director for health planning of the Generalitat of Catalonia

Dr. Lluís Rovira Pato

Director CERCA

Mr. Ramon Saladrígues Solé

General manager of the University of Lleida

Dr. Ramon Sentís Berges / Dr. Alfons Segarra Medrano

Territorial general manager of the Catalan Institute of Health in Lleida

Last meeting: 05/12/2022



3. Internal scientific committee

The internal scientific committee is the IRBLleida's advisory body for its strategic and operational lines, which serves to promote and coordinate its scientific activity. The members of internal scientific committee in 2022 were:

President

Dr. Diego Arango del Corro

Scientific director

Members

Dr. Marcelino Bermúdez López

Principal investigator, Vascular and renal translational research group

Dr. Serafi Cambray Carner

Projects and Innovation manager at IRBLleida

Dr. Eloi Garí Marsol

Coordinator of the Cancer research area

Dr. Mariona Jové Font

Principal investigator, Metabolic Physiopathology group

Ms. Eva López Truco

Quality manager

Dra. Anna Macià Armengol

Principal investigator, Oncological Pathology group

Dra. Rosa Maria Martí Laborda

Principal investigator, Oncological Pathology group

Dr. Manel Portero Otín

Principal investigator, Physiopathology group

Dr. Francesc Purroy García

President of the training commission

Dr. Joaquim Ros Salvador

Coordinator of the Nutrition, metabolism and cellular stress research area

Dra. Esther Rubinat Arnaldo

Principal investigator, Health care research group (GReCS)

Dra. Antonieta Salud Salvia

Principal investigator, Cancer biomarker research group (GReBIC)

Dr. Juan Antonio Schoenenberger Arnaiz

Principal investigator, Pharmacoepidemiology and Pharmacodynamics group

Dra. Rosa Maria Soler Tatche

Coordinator of the Neurosciences research area

Dra. Anabel Sorolla Bardají

Principal Investigator, Biomarkers in cancer research group (GReBiC)

Dr. Albert Sorribas Tello

Principal Investigator, Systems Biology and Statistical Methods for Research Group

Dr. José Manuel Valdivielso Revilla

President of the training commission and coordinator of the research area Chronic diseases, surgery and cures in health and training

Dr. Oriol Yuguero Torres

Coordinator of the Epidemiology, Infectious Diseases and Public Health research area

Last meeting: 12/12/2022



4. External Scientific Advisory Board (eSAB)

The External Scientific Advisory Board (eSAB) is made up of several members of recognized scientific expertise and acts as an advisory body to the board of trustees in the tasks entrusted to it in order to ensure the scientific quality of IRBLleida, and to advise the Scientific Director in the development of its functions.

The members of the External Scientific Committee in 2022 were:

President

Dr. Mariano Rodríguez Portillo

Nephrologist, Professor of Nephrology, Queen Sofia Hospital (Córdoba), Coordinator of Teaching and Research, Group Leader, IP Maimonides Córdoba Biomedical Research Institute

Members

Dr. Ángeles Almeida Parra

Doctor of Pharmacy, Scientific assistant director of the Biomedical Research Institute of Salamanca (IBSAL), Head of the Molecular Neurobiology Group in the IBSAL and the Institute of Biology and Functional Genomics (IBFG), Associate Professor of the University of Salamanca

Dr. Antoni Andreu Periz

Scientific director EATRIS-ERIC

Dr. Ernest Arenas

Doctor in Neuroscience, Karolinska Institutet (KI), Department of Medical Biochemistry and Biophysics (MBB), Area of research on stem cells in the fight against Parkinson's Disease

Dr. Anna Lluch Hernández

Professor of Medicine at the Faculty of Medicine of the University of Valencia and Head of Hematology and Medical Oncology at the University Hospital of Valencia

Dr. John Mariadason

Professor of the School of Cancer Medicine, La Trobe University (Honorary); professor of the University of Melbourne Department of Medicine, Austin Health (Honorary); head of the Division of Cancer Biology and Therapy, Olivia Newton-John Cancer Research Institute; head of the Oncogenic Transcription Laboratory, Olivia Newton-John Cancer Research Institute; director of Graduate Research, School of Cancer Medicine (ONJCRI), La Trobe University

Dr. Teresa Moreno Casbas

Director, Nursing and Healthcare Research Unit (Investén-ISCIII)

Dr. Josep Rodés-Cabau

Director of the Catheterization and Interventional Laboratories of the Quebec Heart & Lung Institute, Quebec City, Canada; Associate Professor of Medicine at Laval University, Quebec City, Canada; Director of Research and Innovation at the Clinic University Hospital of Barcelona, Barcelona, Spain.

Dr. Carlos Rodríguez-Galindo

Member, St. Jude Faculty; Executive Vice President; Chair, Department of Global Pediatric Medicine; Director, St. Jude Global; Co-Associate Director, Outreach, Comprehensive Cancer Center, Memphis, Tennessee, USA.

Last meeting: 02/12/2022



5. Clinical investigation ethics committee

The Drug Research Ethical Committee (CEIm) evaluates clinical drug trials in accordance with the provisions of RD1090/2015. The mission of this committee is to contribute to the improvement of the quality and relevance of the research projects, clinical trials and observational studies that are carried out in our institution, taking as a reference the main international bioethical codes.

The members of the CEIm in 2022 were:

President

Dr. Eduard Solé Mir

Paediatrician

Vice-president

Dr. Xavier Gómez Arbonés

Physician

Secretariat

Ms. Cristina Casas Pi

Biologist

Members

Ms. Núria Badia Sanmartín

Biologist

Ms. Concepció Canut Farré

Patients representative

Ms. Juana Inés García Soler

Primary health care pharmacist

Ms. Maria Teresa Grau Armengol

Nurse

Mr. Josep Maria Gutiérrez Vilaplana

Nurse

Mr. Raül Llevot Pérez

Lawyer

Dr. Robert Montal Roure

Physician

Dr. Marta Ortega Bravo

Primary health care physician

Dr. Gerard Piñol Ripoll

Physician

Dr. Manel Portero Otín

Physician

Dr. Francesc Purroy García

Neurologist

Dr. Alexis Rodríguez Gallego

Clinical pharmacist

Dr. Ana Scott Tennent de Rivas

Physician

Dr. Francisco Ignacio Torres Bondia

Hospital pharmacist

Dr. Oriol Yuguero Torres

Representative of the healthcare ethics committee

Last meeting: 15/12/2022



6. Animal experimentation ethics committees

The animal experimentation ethics committee (CEEA) of the UdL was created to support researchers and teachers in their scientific and teaching activity involving laboratory animal experimentation. Its function is to provide information on the performance of the procedures, prior assessment of the suitability of the procedure in relation to the objectives of the study, the possibility of obtaining valid conclusions with as few animals as possible and consideration of alternative methods.

The members of the UdL CEEA in 2022 were:

President

Dr. Olga Martín Belloso

Vice-rector for Research and Transfer

Secretariat

Dr. Carme Piñol Felis

SCT animal welfare advisor - rodent/reptile animal facility - Departament of Medicine, UdL

Members

Dr. Daniel Babot Gaspà

Researcher at ETSEA, Department of Animal Science of the UdL

Dr. Frederic Casals Martí

Researcher at ETSEA, Department of Animal Science of the UdL

Dr. Xavier Gómez Arbonés

Researcher in Medicine at the Department of Medicine of the UdL

Dr. José A. Moreno Martínez

Animal welfare advisor ETSEA center - Department of Animal Science of the UdL

Last meeting: 13/12/2022

The CEEA of the Center for Applied Biomedical Experimental Research (CREBA) is the body in charge of overseeing the welfare of animals used in teaching and scientific tasks that involve experimentation in a porcine model.

The members of the CREBA CEEA in the year 2022 were:

President

Dr. Dolores C. García Olmo

Veterinarian in charge of animal welfare and health at CREBA

Vice-president

Dr. Serafi Cambray Carner

Projects and Innovation manager at IRBLLeida and associate professor at the University of Lleida

Members

Dr. Carlos Alberto Rombola

Thoracic surgery section chief at the Arnau de Vilanova Hospital of Lleida and associate professor at the University of Lleida

Dr. Marcelino Bermúdez López

Principal investigator at the IRBLLeida and associate professor at the University of Lleida

Dra. Ester Desfilis Barceló

Group leader at the IRBLLeida and professor at the University of Lleida

Dr. Carme Mias Carballal

General surgeon at the Hospital Universitari Arnau de Vilanova and associate professor at the University of Lleida

Dr. Sara Puy López

Veterinarian in charge of animal health at CREBA

Dr. José Manuel Valdivielso Revilla

Group leader at IRBLLeida and associate professor at the University of Lleida

Last online evaluation: September 2021



7. Internal commissions

IRBLLeida is structured into different committees and commissions to organize its activity.

7.1. Internal commission of scientific evaluation

The IRBLLeida Internal Scientific Evaluation Commission (hereinafter CIAC), is the permanent evaluation commission and its function is to supervise the processes of evaluation and prioritization of proposals that are submitted to different calls, both coordinated by the IRBLLeida and by other funding sources.

Functions

- To establish the appropriate evaluation criteria for applications to calls that require prioritisation and/or selection of internal candidates.
- To evaluate and prioritise the proposals received in accordance with the established criteria.
- To establish the terms and conditions for internal calls, which will subsequently be reviewed and, if necessary approved by the Internal Scientific Committee.
- To communicate the results of the assessment to the IRBLLeida management.
- To respond to possible complaints and/or allegations related to calls evaluated or prioritised by the CIAC.
- To review and approve proposals submitted to the National Health Institute (ISCIII) calls.
- To monitor periodically the internal grants that may be required.
- To produce reports on the evaluations carried out (feedback).

MEMBERS

President

Dr. Manel Portero Otín

Secretariat

Dr. Núria Bahi Pla

Members

Dr. Joan Blanco Blanco
 Dr. Milica Bozic
 Dr. Núria Eritja Sánchez
 Dr. Helena Fernández Lago
 Dr. Xavier Gallart Palau
 Dr. David de Gonzalo Calvo
 Dr. Robert Montal Roura
 Dr. José Manuel Valdivielso Revilla
 Dr. Ester Vilapinyó Terre



7.2. Biosafety commission

The concept of biosafety encompasses a diverse set of regulations related to the protection of living beings and the environment from biological agents and risks. These include regulations on plant health, animal health, food safety, human health and safety, environmental safety and biodiversity protection.

IRBLleida's Biosafety Commission is responsible for assessing the biosafety risk of projects initiated at the institution, providing support in training activities for users of tissue culture facilities with biosafety level 2 or higher, proposing improvements to processes or protocols and advising the centre's management on biosafety issues.

Functions

- To participate, while verifying the degree of compliance with current legal and internal regulations, in the assessment, identification, review and approval of facilities and research and teaching activities related to the export or import, the release into the environment, contained use, production, transport, commercialisation, packaging, destruction and/or elimination of biological agents, whether genetically modified or not, and the derivatives, products or samples that contain them.
- To carry out a prior assessment of the installations and activities that require authorisation, before notifying the competent authority, as well as to establish a registry and custody of the legally required documentation.
- To control and guarantee that the IRBLleida's activities and installations comply with current legal and internal regulations.
- To establish the biosafety procedures to be applied by the IRBLleida Biosafety Commission.
- To issue the certificates that are required in accordance with its competences.
- Proposing, when necessary, the improvement of facilities and equipment in terms of biosafety.
- To register the reception and packaging of biological agents, GMOs and/or their derivatives classified in risk group two or higher.
- To review information on biological incidents or accidents and notify the competent authorities of any incident, contamination or serious accident involving biohazardous material.
- To disallow the initiation and suspend any activity that is not in accordance with current regulations.
- To assess and inform IRBLleida management of any complaints submitted by any member of the research community regarding possible irregularities in areas within the Commission's remit.
- To advise and train research teams working in laboratories on aspects related to biosafety.
- To ensure that the confidentiality of the data and information provided to the Commission is guaranteed.
- To guarantee the necessary coordination with the scientific and technical services of the IRBLleida, the Ethics and Animal Experimentation Committees (CEEAA) and the Drug Research Ethical Committee (CEIm).
- Any other function attributed to it by law or by the governing bodies of the IRBLleida.

The biosafety aspects of 13 projects and 22 application forms to work in the BSL2+ (3.16) containment room have been evaluated during 2022.

Last meeting: 12/12/2022

MEMBERS

President

Dr. Maria Ruiz Miró

Secretariat

Dr. Marta Rafel Borrell

Members

Dr. Núria Bahi Pla
 Dr. Marcellí Bermúdez López
 Dr. Eloi Garí Marsol
 Ms. Eva López Truco
 Dr. Carme Piñol Felis
 Dr. Judith Ribas Fortuny



Contact

comitebioseguret@irbllleida.cat



7.3. Equality commission

The aim of IRBLleida's Equality commission is to facilitate compliance with existing legislation on equalities and diversity management. The members of the commission have a confidentiality agreement, as this body is a facilitator in the management of issues related to equality of gender, race, religious beliefs or geographical origin.

Functions

- To guarantee an egalitarian selection process and guarantee equal opportunities in the access, selection and permanence of staff.
- To guarantee wage equality.
- To promote staff participation in the area of equal opportunities.
- To eliminate unconscious biases and stereotypes.
- To raise awareness and train staff on issues of equality.
- To encourage a non-sexist or discriminatory use of language and images.
- To guarantee the conciliation of work, personal and family life.
- To implement measures for prevention, detection and intervention in cases of sexual harassment and harassment on the grounds of sex.
- To promote the incorporation of sex and gender perspective in research content.
- To incorporate the gender perspective in the mission, vision and values of the organization.

MEMBERS

President

Dr. Águeda Martínez Barriocanal

Secretariat

Ms. Elena Moscatel Mendelsohn

Members

Dr. Marcellí Bermúdez López

Dr. Serafi Cambray Carner

Mr. Iván Hidalgo Muñoz

Ms. Irene Rosell Mena

Ms. Meritxell Soria Yenez

 **Contact**

igualtat@irbllleida.cat



7.4. Quality commission

The Quality commission is the central body for IRBLleida's quality policy and assumes responsibility for the design, implementation and enforcement of the Quality Plan. It is also the assessment body and consults government bodies on quality policy issues.

Functions

- In relation to the Quality Plan:
 - a) To write the Quality Plan.
 - b) Review and verify compliance with the Quality Plan annually.
 - c) To write an annual report on the Quality Plan.
- Others functions related to the quality management system:
 - a) To analyse non-conformities and formulate the corresponding corrective and/or preventive actions.
 - b) To propose initiatives for the improvement (objectives) of quality.
 - c) To propose quality assessment methods and instruments.
 - d) To carry out an evaluation of the actions.
 - e) To inform the IRBLleida's governing bodies of the processes and results of quality assessment.
 - f) To assess quality issues.

Last meeting: 16/09/2022

MEMBERS

President

Ms. Eva López Truco

Secretariat

Ms. Elena Moscatel Mendelsohn

Members

Ms. Laura Batalla Peinado
 Mr. Xavier Cabré Ollé
 Dr. Anna Casanovas Llorens
 Dr. Maria Ruiz Miró
 Mr. Eduard Solé Mir

Working group

President

Ms. Eva López Truco

Secretary

Ms. Elena Moscatel Mendelsohn

Members

Ms. Silvia Aresté Grau
 Dr. Maria Ruiz Miró
 Ms. Meritxell Soria Yenez

Contact

qualitat@irbllleida.cat



7.5. Teaching committee

IRBLleida teaching committee facilitates the compliance of the Institute's Training Plan and gives answers to the directorate's questions on training-related aspects.

Functions

- Drawing up the annual Training Plan for IRBLleida staff linked to the general objectives of the Institute, adapting it to the different job profiles.
- To monitor training activities (attendance register), control their quality (surveys) and the system of access to training activities.
- Controlling the expenditure arising from training activities.
- To receive and prioritise training proposals in accordance with IRBLleida and staff objectives.
- To advise and inform the Internal Scientific Committee of training needs and any incidents that may arise.
- To prepare an annual report on compliance with the Training Plan.

MEMBERS

Presidents

Dr. Francesc Purroy Garcia
Dr. José Manuel Valdivielso Revilla

Secretariat

Ms. Meritxell Soria Yenez

Members

Dr. Glòria Arqué Fusté
Dr. Marcelino Bermúdez López
Dr. Silvia Bielsa Martín
Dr. Fabien Delaspre
Dr. Ester Desfilis Barceló
Dr. David de Gonzalo Calvo
Dr. Alberto Marín Sanguino
Ms. Meritxell Martín Garí
Ms. Elena Moscatel Mendelsohn
Dr. Èlia Obis Monné
Dr. Eva Parisi Capdevila
Ms. Arabela Sanz Alcázar
Dr. Joan Sayós Ortega
Dr. Anabel Sorolla Bardaji
Dr. Oriol Yuguero Torres



7.6. Works council

IRBLleida Works council is the representative body of the employees of the Institute. The members of the council are elected democratically for 4-year mandates and the number of representatives to be appointed is related to the number of employees contracted by the Institute.

Functions

- Advice and defense of workers' rights.
- Regular meetings with management of the Institute.
- Negotiation of the collective agreement or other agreements with the management of IRBLleida.
- Inspection of the decisions, actions and omissions of the management in labor matters.

MEMBERS

President

Ms. Meritxell Martín Garí

Members

Ms. Rosana Abadia Ribeiro

Ms. Judith Muñoz Vega

Dr. Eva Parisí Capdevila

Ms. Sara Puy López

Dr. Marta Rafel Borrell

Ms. Laura Rumi Carrera

Ms. Meritxell Soria Yenez

Dr. M. Alba Sorolla Bardaji



7.7. Joint commission

The joint commission is integrated by the general manager and the executive director of IRBLleida as well as the head of the departments of Basic Medical Sciences, Medicine and Surgery, and Experimental Medicine of the University of Lleida (UdL).

Functions

- Advise the management of the IRBLleida in all those departmental matters and that may generate conflicts of competences.
- Manage the allocation and distribution of spaces in the biomedicine buildings.
- Advise on everything that refers to the maintenance and improvement of the facilities of the biomedicine buildings.
- Advise on everything that refers to the organization and operation of the biomedicine buildings.
- Manage the repair, maintenance or new acquisition, if necessary, of common equipment of the biomedicine buildings.
- Any other function that by mutual agreement derives from the previous ones.

MEMBERS

President

Dr. Diego Arango del Corro

Secretariat

Ms. Eva López Truco

Members

Dr. Jacint Boix Torras
 Dr. Elisa Cabiscol Catalan
 Dr. Carme Piñol Felis
 Dr. Olga Tarabal Mostazo



7.8. Committees and commissions composition by sex

Total Number

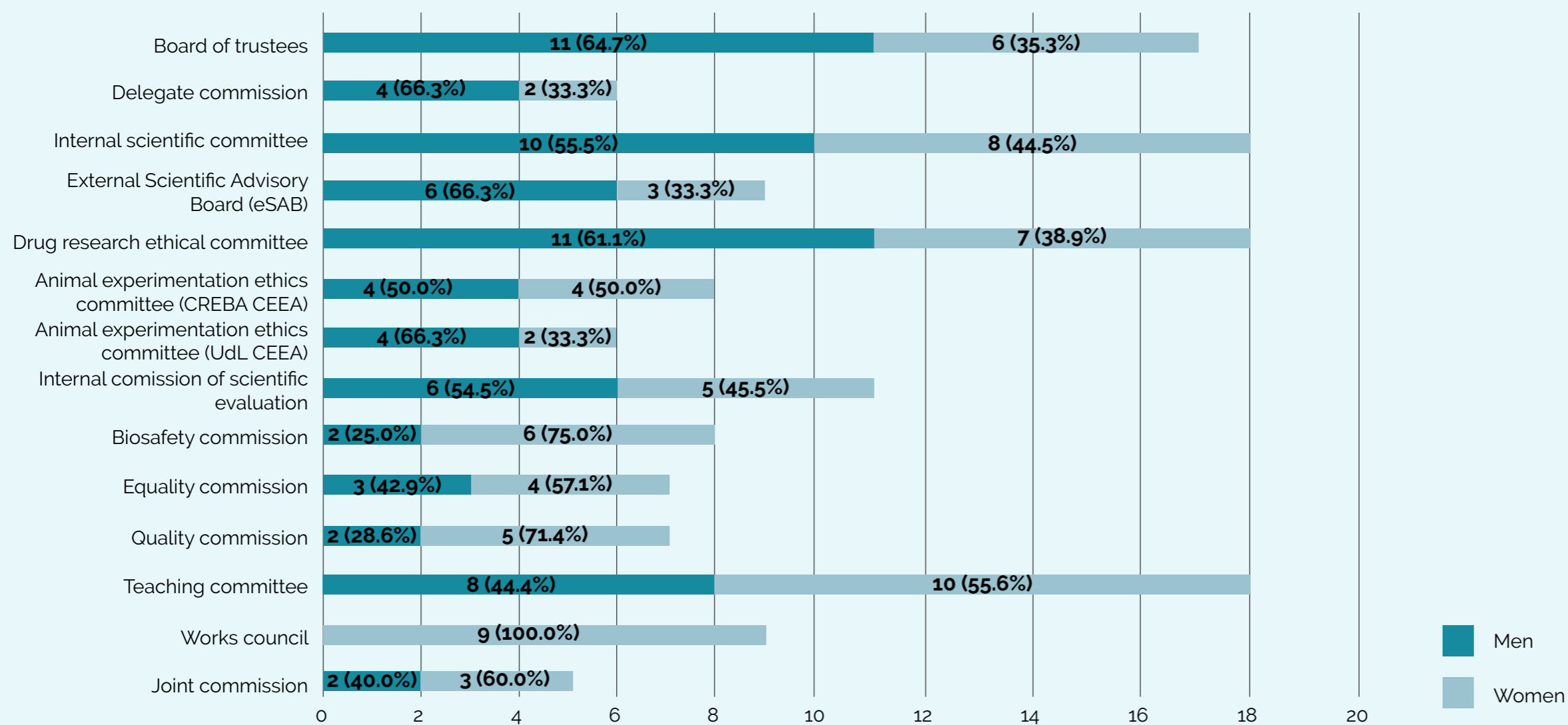


Figure 1. Total number of men and women in committees and commissions.



Core facilities

1. Biobank
2. Microscopy and Cytometry core
3. Biostatistics core
4. Cell culture core
5. Animal housing facility
6. Clinical trial support core - SCT Pharma
7. Immunohistochemistry core
8. Lipidomics
9. Respiratory medicine and chronic pathologies core
10. Proteomics and genomics core
11. Vascular image core - UDETMA
12. Centre for Applied Biomedical Experimental Research (CREBA)
13. Bioinformatics and Computational Biology (BIO2COMP)



1. Biobank

The IRBLleida Biobank is the unit responsible for the management of samples and associated data destined for research. This management includes all the processes of reception, processing, conservation and transfer of biological samples to the scientific community, guaranteeing quality and traceability at all times, in compliance with current legislation. This scientific-technical service arises from the need to support biomedical research both in the health system of the Lleida region and at the University of Lleida. The biological samples kept at the Biobank come mainly from the *Arnau de Vilanova University Hospital and the University Hospital of Santa Maria de Lleida*.

In 2013, the biobank was authorized by the Department of Health and is registered in the National Register of Biobanks of the Carlos III Health Institute under reference B.0000682. Since 2012, the Biobank has been certified by the ISO 9001 standard and the scope of application of the Biobank's quality management system covers all the following activities: reception, processing, storage and dispatch of biological samples from donors for biomedical research. It is also part of the Catalan Network of Tumor Banks (*Xarxa Catalana de Bancs de Tumors - XBTC*) and the ISCIII Biobanks and Biomodels Platform (*Plataforma ISCIII Biobancos y Biomodelos*). This national platform is organized into four specific hubs: Biobanks, Animal Models, 3D Printing and Organoids; and aims to make the maximum number of biological samples and their associated data available to the scientific community.

A catalogue of services has been created within the Animal Models Hub. Any customer can find out, by registering in advance, the map of animal model services available. Recently, the platform has become an observer member of one of the most relevant platforms at European level, the European Biobank Infrastructure. (BBMRI-ERIC).

The Biobank currently has more than 335,000 stored samples from some 23,000 patients. These are tissue samples frozen in OCT or liquid nitrogen, paraffin, blood samples, serum, plasma, urine, CSF, pleural fluid, among others.

Collections

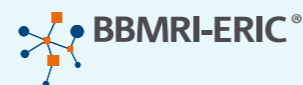
- Oncological diseases (breast cancer, colon, rectum, endometrium, ovary, kidney, liver, pancreas, thyroid, lung, etc.).
- Neoplastic diseases of the pleura
- Neurological diseases (stroke, Alzheimer's disease)
- Respiratory diseases (obstructive sleep apnoea, SARS-CoV2)
- Metabolic diseases (diabetes and morbid obesity)
- Inflammatory bowel disease (celiac disease)
- Cardiovascular diseases ('Bus de la Salut').

It should be noted that the Biobank is also collaborating in a prospective, multicentre international project aimed at understanding the molecular and genetic bases of cancer.

The Biobank makes available to the scientific community a large number of samples. Year after year there has been an increase in the number of samples provided to both internal IRBLleida researchers and national and international researchers.

It is also attached to the *Hospital Universitari Arnau de Vilanova* Clinical Research Ethics Committee.

Collaborators



Scientific coordinator

Dr. Xavier Matias-Guiu

Core facility coordinator

Dr. Maria Ruiz Miró

Staff

Ms. Catherine Fleitas
Ms. Irene Pociño
Ms. Ingrid Prats
Ms. Sara Serrano
Ms. Anna Serrate

KPI

- Users: **30**
- Services: **35**
- Processed samples: **3,381**
- Publications Acknowledgement: **25**
- Training activities: **2**



2. Microscopy and Cytometry core

The Microscopy and Cytometry Service is divided into two locations, one for the Flow Cytometry Unit and the other for the Confocal Microscopy Unit. The Flow Cytometry Unit is located in Lab. 4.14 in the 4th Floor of Biomedicine 2 Building, whereas The Confocal Microscopy Unit is in the B-1.1 Lab located in the basement.

The **Flow Cytometry Unit** currently has a digital analyzer cytometer FACS Canto-II (from Becton Dickinson) with three lasers 4-2-2 configuration capable of analyzing up to eight different colours. The cytometer is equipped with a computer to control the operation and comes installed with FacsDiva v. 6.1.3 analysis software. Also available is a magnetic cell separator device, Automac Pro (Miltenyi Biotec) in a cabin class II biosafety.

In addition, the service also offers additional software for different applications such as ModFit LT for the analysis of cell cycle FCAP Array experiments CBA (BD) and two analysis software file licenses for FlowLogic cytometry (Denovo Software). Other facilities available in the Cytometry Service are: a 4°C refrigerator, a vortex, a set of micropipettes, a printer, and an independent computer for data analysis.

Now we are offering: cell cycle studies, oxidative stress (various fluorescent probes) studies for immunophenotyping, apoptosis (annexin V, caspase 6, phosphorylated histone H3, etc ...), cytokine concentration analysis by cytometric bead array (CBA BD), among others.

The **Confocal Microscopy Unit**, managed by the University of Lleida, currently, has the following microscopes and other equipment:

- Olympus FV1000 spectral confocal microscope with 5 laser lines: 405nm, 488 nm, 543 nm, 559 nm and 635 nm. It has 4x, 10x, 20x, 40x (oil), 60x (oil) and 100x (oil) lenses. It can also be used with phase contrast and DIC. This microscope also allows experiments to be performed in vivo and over time, as it has a cabin with CO2 and temperature control.
- Olympus FV10i confocal desktop microscope (10x and 60x objectives (oil))
- Olympus BX51 epifluorescence microscope (10x, 20x, 40x, 60x objectives)
- Zeiss Axio Observer Z1 epifluorescence microscope: also with phase contrast and DIC. It allows in vivo time-lapse studies and has different excitation filters covering a wide range of wavelengths.
- Zeiss Axioskop 2 clear field microscope with color camera, but also equipped with an LED source and monochrome camera to display fluorescence. It is equipped with 2.5x, 10x, 20x, 40x, 60x lenses
- Leica CM1950 cryostat with automatic cutting
- Leica CM3000 cryostat
- Leica RM2235 microtome
- Vibratome Leica VT 1000S
- Leica Ultramicrotome EM UC6



Flow Cytometry unit scientific coordinator

Dr. Conchi Mora

Confocal Microscopy unit manager

Dr. Jordi Calderó

Core facility coordinator

Dr. Anaïs Panosa

FLOW CYTOMETRY UNIT - KPI

- Users: **36**
- Training activities: -

CONFOCAL MICROSCOPY UNIT - KPI

- Users: **59**
- Training and outreaching activities: **3** different science divulgation activities to High School students and the Researcher's Night



3. Biostatistics core

Statistical methods are essential for designing studies, analyzing data and interpreting results. The Biostatistics Core has the ultimate goal of contributing to the generation of knowledge that can improve health by working with researchers to turn their data into useful information. To achieve this goal, the Biostatistics Unit provides advice and methodological support for the design and data analysis of studies by the research groups at IRBLLeida and external organizations. It participates in improving the processes of data collection, validation and integration for the research groups at IRBLLeida, and actively participates in Biostatistics networks in Spain and abroad. It also organizes and participates in training courses of statistics and research methodology at IRBLLeida and other institutions.

Mission

Our mission is to provide every biomedical researcher with outstanding statistical designs and methods, including the proper and efficient use and outcome interpretation of standard and cutting-edge methods.

Vision

Our vision is to expand to more biomedical researchers and maximize the quality and satisfaction with our service as part of our commitment to continuous improvement.

Values

Our values are ethics, excellence, professional responsibility, transparency, innovation, rigour, integrity, sharing of knowledge, social commitment and environmental responsibility.



Core facility coordinator

Dr. Montserrat Martínez

KPI

- Users: **31**
- Services: **44**
- Training activities: **3**
- New users: **19**



4. Cell culture core

The cell culture service (SCT-CC) is a research support infrastructure, ensuring the proper functioning of the different spaces and equipment intended to work with cell and tissue cultures, as well as training its users in good practices, preservation of asepsis and biosecurity, advising them, if necessary, both in technical matters and experimental design.

The service also supports the accreditation of the ministry of activities with type II GMOs, and is in charge of the supervision, maintenance and training of the facilities of biosafety level (BSL) 2 with negative pressure for humans samples manipulation, and lentiviral production.

The services provided include:

- Maintenance, expansion and freezing of stable or primary cell cultures
- Mycoplasma test
- Transfection/infection of cell cultures with foreign or suppressive genes
- Lentivirus production
- Cell culture preparation for subsequent studies of fluorescence, cytometry, immunoprecipitation, etc
- Cell culture on demand experiments



Scientific coordinator

Dr. Judit Ribas
Dr. Daniel Sanchis

Core facility coordinator

Dr. Marta Rafel

Staff

Ms Laia Beà
Ms. Rosa Vaquera

- Internal users: **130**
- External users: **1**
- Groups: **30**



5. Animal housing facility

Animal models are essential for the advancement of biomedical research. The purpose of this facility is to produce and maintain the animals (rodents) required for the different research projects carried out by scientists in our center. The animal facilities occupy an area of 1,200 m² distributed in two floors, and has the capacity to house approximately 40,000 rodents. The facility includes 3 experimental areas that allow animal housing and research in different biosafety and microbiological conditions: 1) a barrier area operating under Specific Pathogen Free (SPF) conditions; 2) a conventional area operating under clean conditions; and 3) a quarantine for animals with improper or undefined microbiological profile. These experimental areas contain 12 animal housing and husbandry rooms (5 in the SPF barrier, 6 in the conventional area and 1 in the quarantine area) and 9 fully-equipped laboratories/surgery rooms (4 in the SPF barrier and 5 in the conventional area). The facility also has 2 technical areas (sterilization/management of materials and a warehouse). Importantly, all the research projects carried out in this animal facility are supervised, evaluated and approved by the Ethics Committee for Animal Research and Welfare.

Some of the services provided by the Animal Housing Facility are:

- Breeding of different species and strains of rodents (mouse and rat) for teaching and research.
- Advice on the import of special models from authorized external suppliers and other research centres.
- Installations for the maintenance of rodents in the course of the experimental procedure.
- Advice for compliance with the legislation regulating the use of animals for teaching and research: facilities, operation, records, staff, ethics committees, project processing and procedures with experimental animals.
- Advice on the handling, care and handling of animal animals and anesthesia procedures.
- Advice to researchers on issues related to animal welfare regarding their acquisition, housing, care and use.
- Advice to researchers on the application of the requirement for replacement, reduction and refinement, and information on technical and scientific advances in the application of this requirement.
- Advisory functions in relation to the state of health and treatment of animals.
- Training of animal user staff with the functions of experimenter and design of projects and procedures.



Scientific coordinator

Dr. Carme Piñol

Appointed veterinarian

Dr. José Antonio Moreno

Staff

Mr. Albert Ardèvol

Mr. Marc Collado

Ms. Leticia Fabre

Ms. Núria Moix

Ms. Jéssica Pairada



6. Clinical trial support core - SCT Pharma

The SCT Pharma is located on the ground floor of the IRBLleida Biomedicine II building.

The SCT Pharma constitutes a research **support** infrastructure whose purpose is to provide researchers with the necessary **resources**, both material and human, for the execution of clinical trials and other research projects from their initial stage and start-up to their completion, guaranteeing all the time the **quality** of the service and the compliance with the principles of Good Clinical Practice guidelines.

For this purpose, it has a team of multidisciplinary professionals with experience in the comprehensive management of clinical studies and an infrastructure equipped with clinical research support facilities:

- Fully equipped medical offices
- Reception and waiting room for participants and relatives
- Laboratory equipped for biological samples processing
- Clinical Trials Pharmacy
- Medication storage room
- Refrigeration equipment room with controlled temperature and probes with calibration certificates
- Consumables and materials warehouse
- Meeting, monitoring visits and/or external audit visits areas
- Active clinical studies archive and external archive for documentation custody

Services

The main objectives of the SCT Pharma is to support the clinical research groups of IRBLleida, Arnau de Vilanova University Hospital and Santa María University Hospital, in the promotion and development of quality clinical research, providing comprehensive or partial technical-methodological support for the project.

To achieve this objective, the unit has a portfolio of services adapted to each study based on the needs of the researchers.

Methodological support

- Design and drafting of all the necessary/essential documentation for the study (Protocol, Case Report Form (CRF), Informed Consent Form, etc.)
- Design and management of electronic CRF (REDCap)

Monitoring

- Preparation of monitoring plan adapted to risk evaluation
- Monitoring in all centers participating in multicentric studies
- Preparation, development and elaboration of site visit reports
- Database revision and source documents verification
- Preparation and management of site files: investigator, promoter, pharmacy

Data management

- Data record in source documents and CRF
- Queries management
- Record and actualization of study information at different platforms



Scientific coordinator

Dr. Joan A. Schoenenberger Arnaiz

Core facility coordinator

Dra. Alicia Sánchez de la Torre

Staff

Clinical trials pharmacist

Laura Rumi Carrera

Lab technician

Aida Moroba Estor

Clinical trial assistant and Clinical trial monitor

Alba García Ribas

Study nurse

Mònica Baldrich Mora

Judit Herrera Duran

Study coordinator

Sara Vidal Puig

Petya Vladeva Valcheva

KPI

- Clinical areas: **14**
- Clinical studies: **47**

Training activities:

- Good Clinical Practice Certificate
- Certificate IATA for Infectious Substances Transport



Administrative management / Regulation

- Management of participating sites contracts
- Management of requests, clarifications, amendments and notifications to CEIm and regulatory agencies
- Civil liability insurance policy request

Coordination and Nursery

- Participate in site and researchers team selection
- Participate in study feasibility evaluation
- Analysis of the circuits and technical needs, space and personnel of each clinical trial
- Conducting meetings with investigators
- Facilitate the communication between the medical services and the external parties involved in the study
- Maintenance of necessary site files: researcher, promoter, pharmacy
- Facilitate the process of recruitment and obtaining the informed consent
- Control and management of nursing procedures and complementary tests
- Coordination of visits and follow-up controls
- Comprehensive patient care support
- Pharmacovigilance: management of adverse events
- Management of possible audits
- Custody of clinical trial documentation
- Contact with monitors and preparation of documentation for external monitoring

Laboratory technician

- Processing of biological samples and management of their shipment to the central laboratory

Pharmacy

- Management and preparation of study medication



7. Immunohistochemistry core

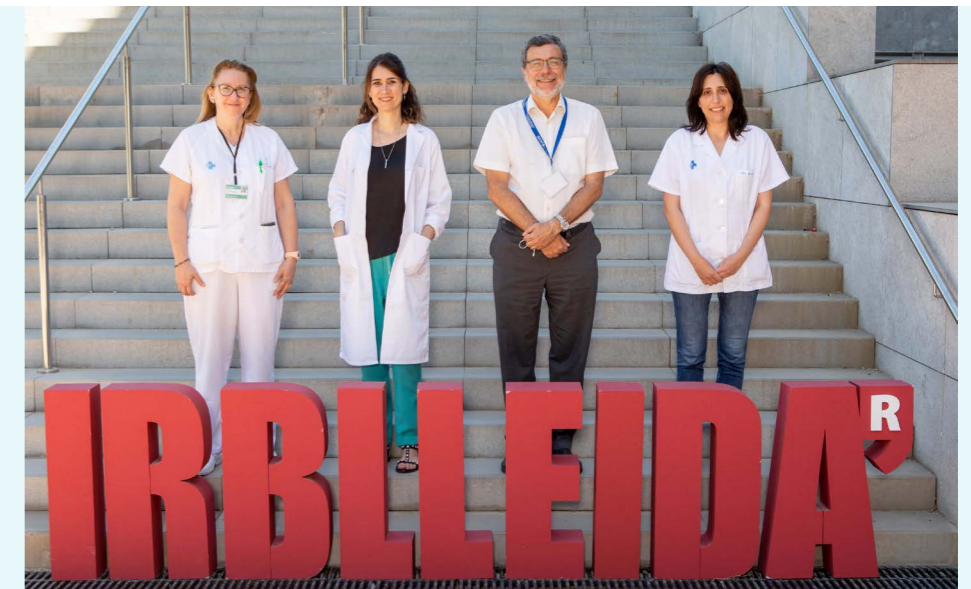
This core facility offers the research groups high quality technical support in histological and immunohistochemical labeling of cells or tissue sections of human or animal origin.

The service offers support in the processing of:

- Tissues (human, animal) paraffin embedded
- Frozen tissues
- Cytologies
- In vitro cell cultures

Services

- Preparation of paraffin and frozen blocks.
- Microtomy.
- Histological staining (Hematoxylin-Eosin).
- Special stains (Histochemistry).
- Immunohistochemical protocol for the detection of proteins in human, pig, dog, cat and mouse tissues using concentrated or pre-diluted antibodies.
- Construction of Tissue Micro Arrays (TMA Grand Master, 3D HISTECH).
- Immunohistochemical protocol of double staining. Detection of two proteins simultaneously in the same tissue section.
- Immunofluorescence technique.
- Digital scanning of tissue sections (Pannoramic® 250 Flash III, 3D HISTECH) and analysis of immunohistochemical images using the specific software Quant modul (3D HISTECH).
- In situ hybridization using FISH (Fluorescent In Situ Hybridization) or CISH (Chromogenic In Situ Hybridization).
- Optical microscopy.
- Quality controls.



Scientific coordinator

Dr. Xavier Matias-Guiu

Core facility coordinator

Dr. Maria Santacana

Staff

Ms. Maria Carrelé

Collaborating medical staff

Dr. Sònia Gatus

Dr. Judit Pallarés

KPI

Collaboration in research projects:

- Number of blocks performed: **1.206**
- Number of IHQ Stainings performed: **2.642**
- Number of tissue sections performed (microtomy): **7.236**
- Number of TMAs performed: **2**

Number of used blocks for research (human samples):

- Internal: **884**
- External: **287**



8. Lipidomics

The IRBLleida Lipidomics Service was born in 2010 with the aim of promoting lipidomics studies. Due to the growing demand and the advance in technologies based on mass spectrometry, a large investment has been made by different partners and institutions in the territory to acquire new equipment and be able to expand and improve the service. The service has thus consolidated, during the last three years, as a Lipidomics Platform in Catalonia (PLICAT), a reference center for the analysis of lipids in biological samples.

The platform has ten complete systems for detecting compounds for metabolomics and lipidomics applications.

- **1** mass spectrometer with orbital ion trap Orbitrap Exploris 240® with UPLC Vanquish from Thermo Fisher Scientific coupled to TriVersa NanoMate® ion source platform from Advion;
- **2** mass spectrometers QTOF (models 6545 and 6420) from Agilent Technologies;
- **4** mass spectrometers QQQ (models 6420, 6465 Ultivo, and 6495); associated with UPLC model 1290 from Agilent Technologies;
- **2** mass spectrometers single Q (5977B and 5973A models) coupled to gas chromatographs (Intuvo 9000 and HP6890 models);
- **1** gas chromatography system (model 7890A) with FID detector.

It also has the necessary software for the bioinformatic analysis of the metabolic data as well as a high-volume database storage server.

- MassHunter Data Acquisition, Qualitative Analysis, Quantitative Analysis, Mass Profiler, LipidAnotator and Profinder from Agilent Technologies.
- Compound discoverer and Lipid Search from Thermo Fisher Scientific.
- QNAP NAS Server 16 bays.

It has databases with its own metabolite libraries and 500 commercial metabolite standards, as well as all types of accessory equipment for sample storage and processing: freezers, homogenizers, syndicators, incubators, agitators, centrifuges, vacuum dryers, and nitrogen evaporators.

Services

- Experimental design and advice for sampling
- Sample processing with standardized protocols and quality controls at every step
- Lipid profile analysis with GC-FID and GC-MS; Non-targeted and targeted lipidomic and metabolomic analysis with LC-MS type QTOF and QQQ; shotgun lipidomics by Nanomate-Orbitrap®
- Data processing, bioinformatics, and statistical analysis
- Access to databases and interpretation of results

Collaborators

IRBLleida has the support and co-financing of the European Regional Development Fund (FEDER) of the European Union, and Departament de Recerca i Universitats de la Generalitat de Catalunya, to develop and consolidate the Lipidomic Platform of Catalonia (PLICAT) - IU16-015805.

Service members are part of the Metabolomics Society, Sociedad Española de Metabolómica, and the COST Action EpiLipidNET, CA19105 – Pan – European Network in Lipidomics and EpiLipidomics, funded by the Horizon 2020 Framework Programme of the European Union.



Scientific coordinators

Dr. Mariona Jové
Dr. Reinald Pamplona

Core facility coordinator

Dr. Èlia Obis

Staff

Ms. Meritxell Martín
Dr. Natàlia Mota

KPI

- Users: **15**
- Services: **41**
- Processed samples: **4.711**
- Publications Acknowledgement: **16**
- Training activities: **6**
- Consultations: -





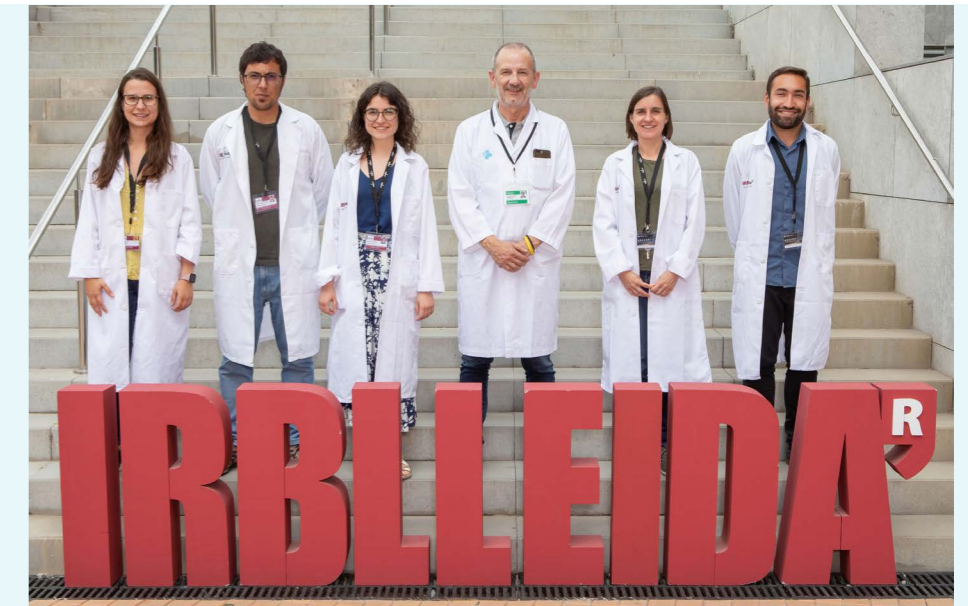
9. Respiratory medicine and chronic pathologies core

The Scientific and Technical Service of Respiratory Medicine and Chronic Pathologies core provides specialized support for the performance of respiratory functional tests and specialized monitoring and follow-up activities in the field of respiratory medicine and chronic pathologies.

The service has access to specific technical equipment such as respiratory polygraphs, actigraphy, devices for ambulatory blood pressure monitoring (ABPM) and spirometry, among others, for the provision of the services offered.

Collaborators

- Sleep Unit of the *Hospital Santa Maria de Lleida*
- Pneumology service of the *Hospital Arnau de Vilanova de Lleida*
- Translational research in respiratory medicine group (TRRM) -IRBLleida
- Precision Medicine in Chronic Diseases Group (PMCD)



Scientific coordinator

Dr. Ferran Barbé Illa

Core facility coordinator

Dr. David de Gonzalo

Staff

Ms. Clara Gort
Ms. Esther Gràcia
Ms. Lola Martínez
Ms. Anna Moncusí
Dr. Adriano Targa

KPI

- Users: **6**
- Services: **8**
- Analyzed samples: **237**



10. Proteomics and genomics core

This service offers technology for the study of genes and gene expression or proteome. The equipment of the unit integrates technological platforms to perform genotypic analysis, gene expression analysis and proteomic analysis of complex samples, techniques that are an essential tool for current basic and clinical research in the field of cellular and molecular biology. This core facility is managed by the UdL.

The services provided include:

Genomic studies

- Gene and miRNA expression
- Genotyping on basis of different molecular markers
- Gene copy number variation
- DNA methylations
- NGS applications
- Genotyping of SNPs by MALDI-TOF mass spectrometry
- Detection and quantification of microorganisms and GMOs
- Determination of viral load

Proteomic studies

- Quantification of proteins by Western Blot
- Protein expression studies using antibody microchips
- Differential or expression proteomics based on two-dimensional gels
- Determination of the molecular mass of proteins / peptides by MALDI-TOF/TOF mass spectrometry
- Identification of proteins on a large scale, in samples of medium complexity (eg subproteomes and protein complexes) by means of LC-MALDI-MS / MS



Scientific coordinators

Dr. Eloi Garí

Dr. Joaquim Ros

Core facility coordinator

Ms. Isabel Sánchez



11. Vascular imaging core - UDETMA

This core provides support for the diagnosis of subclinical or asymptomatic atheromatosis, by means of techniques specific and validated instruments, non-invasive, in population with cardiovascular risk factors.

Objectives

1. Diagnosis of subclinical or asymptomatic atheromatosis using specific techniques and validated non-invasive instruments in a population with cardiovascular risk factors.
2. Moving towards personalized medicine: seeing individually the health of the arteries and the impact of risk on them.
3. Calculate the vascular age and whether there is a dissociation with the chronological age due to the action of risk factors (accelerated arterial aging).
4. Change the paradigm in the assessment and treatment of cardiovascular risk taking into account the existence of asymptomatic target organ injury (presence of arterial atheroma plaque).
5. Research into the development and implementation of new technologies for the evaluation of atheromatosis, its prevention and evolution: composition of the plaque, atheromatous burden (total plaque area, number of affected territories).
6. Training on diagnostic techniques for atheromatous disease for health professionals (technicians, nurses, doctors...).
7. Provide expert advice in the field of atherothrombotic disease to IRBLleida researchers and external researchers.
8. Support research, innovation and transfer of knowledge.
9. Build clinical, analytical, image and biobank databases of all the populations studied, and make them available to different research groups (internal and external).

During the year 2022 the core has been involved in a clinical trial investigating the vascular benefits of black garlic: "Supplementation with nutraceuticals derived from black garlic for blood pressure control: a double-blind, randomized, placebo-controlled study. (Endogarlic)" (sponsor: Pharmactive, S.L.).



Scientific coordinator

Dr. Jose Manuel Valdivielso

Core facility coordinator

Ms. Eva Castro Boqué

Staff

Ms. Eva Castro Boqué

Ms. Alicia Garcia



12. Centre for Applied Biomedical Experimental Research (CREBA)

CREBA (Centre for Applied and Experimental Biomedical Research) is a leading research and training centre focused on biomedicine. Promoted by the Diputació de Lleida and the IRBLleida, the CREBA project arose from the need for high-level facilities for translational research and continuous training for health professionals.

Within its facilities, our centre offers conference and simulation rooms, experimental operating theatres with high-level technological equipment, specifically designed to maximise the learning experience of open and laparoscopic surgical techniques and other interventional skills, as well as the performance of high quality scientific-technical research, with the highest ethical standards. CREBA has a swine animal facility and a staff specialised in this species to provide support to teachers and researchers.

Facilities

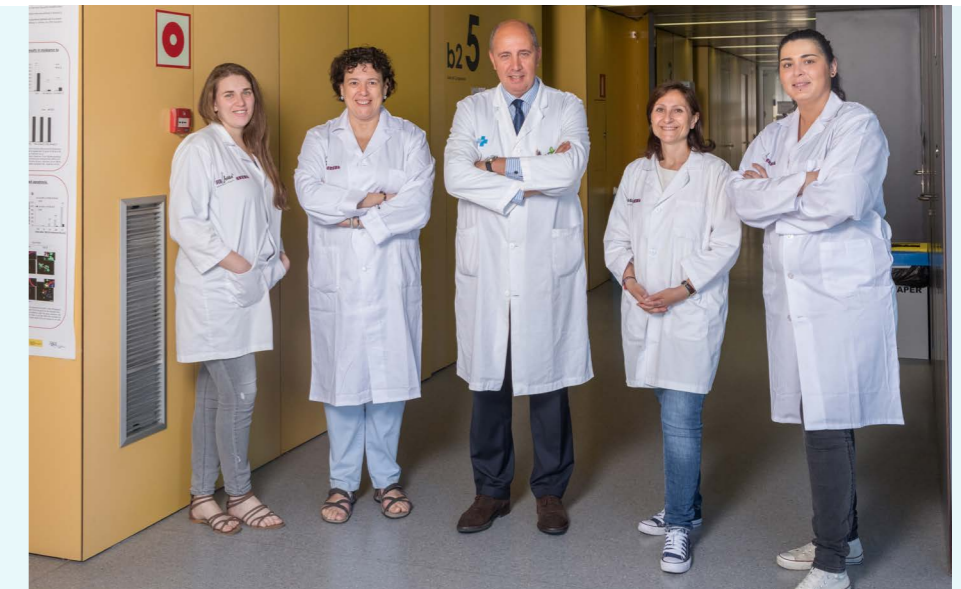
- Three operating rooms equipped with 3D laparoscopic technology, indocyanine green detection, and other surgical techniques
- Surgical training room with five fully equipped tables
- Complete equipment for conventional surgery, endoscopic surgery and interventional radiology
- Simulation room with devices for learning laparoscopic surgery
- Laboratory for the conservation and handling of biological samples
- Facilities for porcine animals
- Teaching room connected to a videoconferencing system (capacity for 30 people)
- Meeting room (capacity for 10 people)

www.creballeida.org

Twitter: @creballeida

Facebook: creballeida

LinkedIn: Company/creba



Scientific coordinator

Dr. Jorge J. Olsina

Core facility coordinator

Dr. Dolores C. García Olmo

Staff

Ms. Sara Castañé

Ms. Marta Farré

Ms. Silvia López Bellón

Ms. Sara Puy

- Training activities: **20**
- Trainees: **359**
- Activities with schools and social groups: **14**



13. Bioinformatics and Computational Biology (BIO2COMP)

This core offers training, consultancy and analysis in bioinformatics and computational biology.

Services

1. IN BIOINFORMATICS

Training and consultancy

- Consultancy services to researchers for the approach of bioinformatics activities in the application for project funding and in the planning of their experiments with a view to an adequate subsequent bioinformatics treatment.
- Personalised and group training in bioinformatics and mathematical modelling.
- Advice and support to users of bioinformatics tools and methods.

Standard analysis

- De novo assembly and annotation of prokaryotic genomes.
- Reference genome variant analysis in prokaryotes and eukaryotes.
- Gene expression analysis (Microarray & RNAseq) for identification of differentially expressed genes.
- Analysis and optimisation of expression of biological sequences (use of most frequent codons).
- Modelling and prediction of protein structures.
- Data visualisation in maps of biological networks.

Specialised analysis

- Qualitative and quantitative analysis of results of omics experiments.
- Data analysis.
- Other non-standard projects.

2. IN COMPUTATIONAL BIOLOGY

Training and consultancy

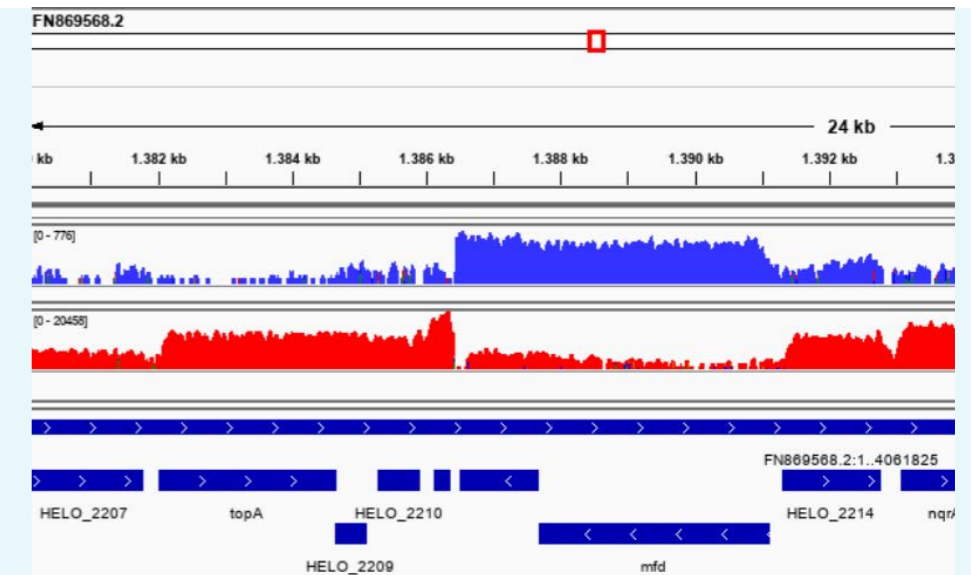
- Consultancy services to researchers for the approach of computational biology activities in the application for project funding and in the planning of their experiments with a view to an adequate subsequent bioinformatics treatment.
- Personalised and group training in computational biology methods.
- Advice and support to users in the use of mathematical modelling software in biology, biomedicine and biotechnology.

Specialised analyses

- Creation of "digital twins" of biological processes for analysis and optimisation.
- Compartmental modelling.
- Sensitivity analysis and evaluation of 'what if...' scenarios. (in silico experiments).

Equipment

- 2 Servers, each with 2 Intel Xeon processors (24 compute nodes) at 2.0 GHz, 124 GB RAM, for intensive calculations.
- 4 HP Z series workstations, with Intel Xeon processors and 8 computation nodes.
- 3 HP high-performance PCs.



Scientific coordinator

Rui Carlos Vaqueiro de Castro Alves

Staff

Jorge Sebastian Comas Pereyra

Alberto Marin Sanguino

Albert Sorribas Tello

Ester Vilaprinçó Terre



Economic indicators



Revenues and Expenses

	2021	2022
Revenues	6.496.570	7.373.774
Expenses	-6.578.827	-7.415.044
Total	-82.258	-41.270

Table 1. The following table shows summary information about the expenses and income of the foundation, as reported in its income statement.

Detailed revenues

	Trustees Transfers	Clinical Trials and other Invoices	Grants	Donations	Total
2022	1.006.322	3.059.990	2.999.034	308.427	7.373.774
2021	840.387	3.012.258	2.395.704	248.221	6.496.570

Table 2. The following table shows the information on the income obtained by the foundation, with the sources of income grouped according to whether it is obtained through trustees transfers, clinical trials and other invoices, grants and donations.

Revenues from Indirect Costs

	Trustees Transfers	Clinical Trials and other Invoices	Grants	Donations	Total
2022	0	500.775	254.944	32.177	787.896
2021	0	495.800	269.992	29.031	794.823

Table 3. The following table shows the information on the income obtained by the foundation from indirect costs, with the sources of income grouped according to whether it is obtained through trustees transfers, clinical trials and other invoices, grants, and donations.



Balance Sheet

	2021	2022
A) NON-CURRENT ASSETS	799.526	1.814.060
I. Intangible assets	74.183	41.588
Tangible fixed assets	725.343	1.772.472
B) CURRENT ASSETS	17.726.291	20.558.073
II. Stocks	11.183	14.534
III. Users, sponsors and debtors of the activities and other accounts receivable	8.276.136	7.068.929
IV. Short-term financial investments	1.900.000	1.900.000
VI. Cash and other equivalent liquid assets	7.538.972	11.574.610
TOTAL ASSETS	18.525.817	22.372.133
A) NET EQUITY	3.072.226	10.366.886
A-1) OWN FUNDS	1.322.138	1.280.868
I. Endowment funds or social funds	18.030	18.030
III. Surpluses from previous years	1.386.366	1.304.108
V. Surplus for the year (positive or negative)	-82.258	-41.270
A-2) GRANTS, DONATIONS AND LEGACY RECEIVED	1.750.088	9.086.018
B) NON-CURRENT LIABILITIES	2.202.595	1.174.461
II. Long term debts	2.202.595	1.174.461
C) CURRENT LIABILITIES	13.250.995	10.830.786
I. Short-term provisions	5.840.468	0
II. Short term debts	6.901.767	10.501.974
IV. Creditors for activities and other accounts payable	508.760	328.812
TOTAL NET EQUITY AND LIABILITIES	18.525.817	22.372.133

Table 4. The following table shows the information about the assets and liabilities of the foundation, which are included in its balance sheet.

2022

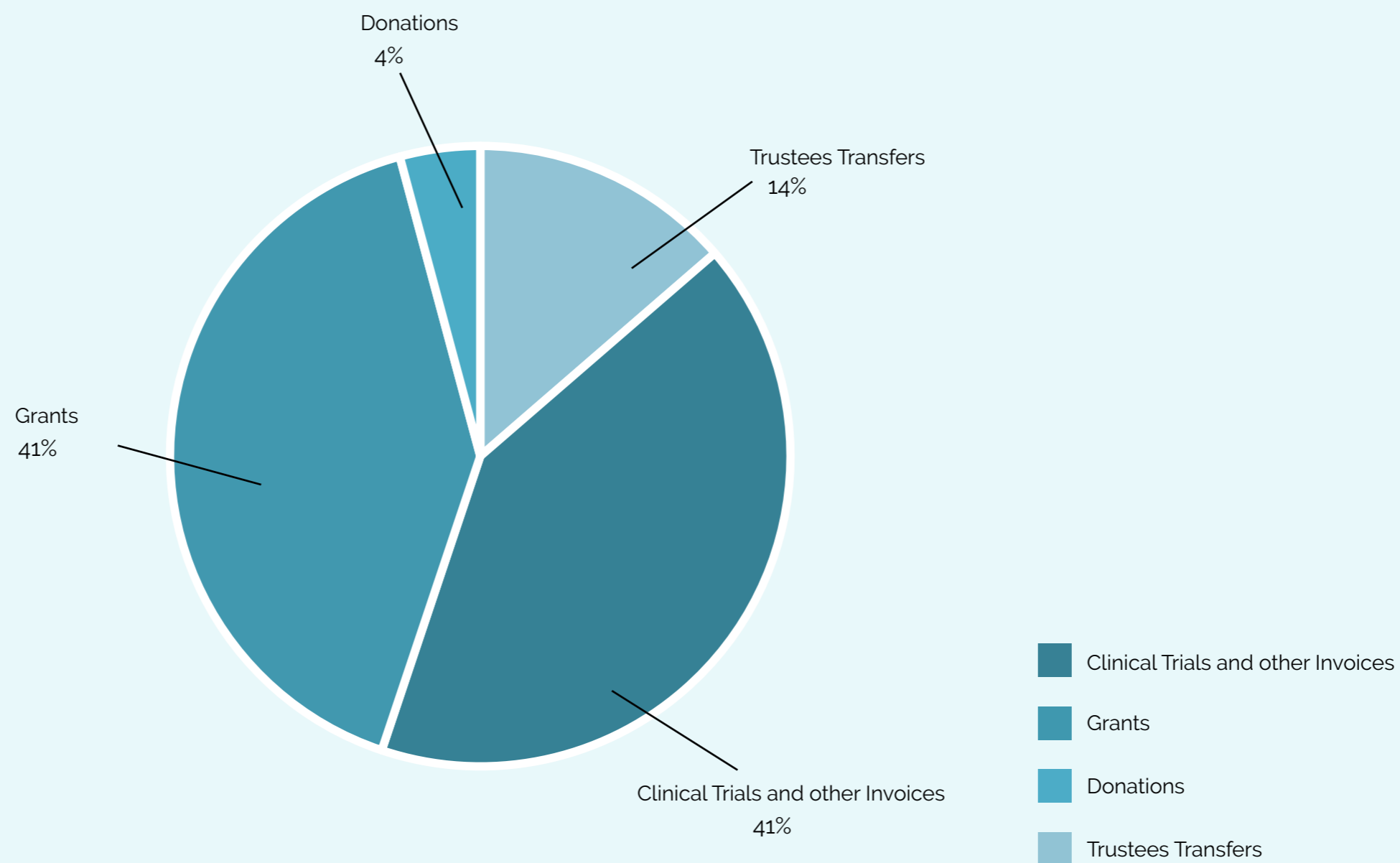


Figure 2. Information on the income obtained by the foundation, with the sources of income grouped according to whether it is obtained through trustees transfers, clinical trials and other invoices, grants and donations.



Communication

1. Promotional material
2. Outreach
3. Internal communication
4. External communication

1. Promotional material

1. IRBLLeida general leaflet

Som IRBLLeida Somos IRBLLeida

2022 Institut de Recerca Biomèdica de Lleida Fundació Dr. Pifarré IRBLLeida

ACCIONS DESTACADES

DADES RELEVANTS 2021 DATOS RELEVANTES 2021

429	487	368	1.193
5,26	59%	34	66
143	6,5 M	9.000 m ²	157

5 àrees de recerca
37 grups de recerca
5 àrees de investigació
37 grups de investigació

2. IRBLLeida's corporate social responsibility report 2022 and bookmark

MEMÒRIA DE LA RESPONSABILITAT SOCIAL CORPORATIVA DEL 2021 DE L'IRBLLeida Institut de Recerca Biomèdica

2021 IRBLLeida CORPORATE SOCIAL RESPONSIBILITY REPORT

1. Second edition of the "Fundació Jesus Serra" Research Grant writing program for IRBLLeida Young Scientists.
2. Initiation of the "HR Excellence in Research" award renewal process.
3. "International Day of Women and Girls in Science" exhibition.
4. Covid vaccination Organisation.
5. Blood Donation Marathon organisation.
6. Affiliation to the European Mobility Week.
7. Researchers' Night participation.
8. Contribution to Sant Miquel Fair.
9. "LleidaConCiencia Podcasts.
10. Organisation of Educational workshops.
11. Programming of visits to IRBLLeida.
12. Third Conference #SomRecerca.
13. Edition of the book "The Divers Universe".
14. IRBLLeida photography contest.
15. IRBLLeida guided visits for new employees.
16. Participation on the social networks campaigns for the world day of different diseases (cancer, AIDS, etc).
17. Organisation of school visits to CREBA (Centre for Applied Biomedical Experimental Research).
18. Organisation of SECAL (Spanish society for laboratory animals in Science) meeting.
19. Organisation of the second Edition of the course "Train yourself to disseminate".

For more information, see the complete report on our website www.irblleida.cat



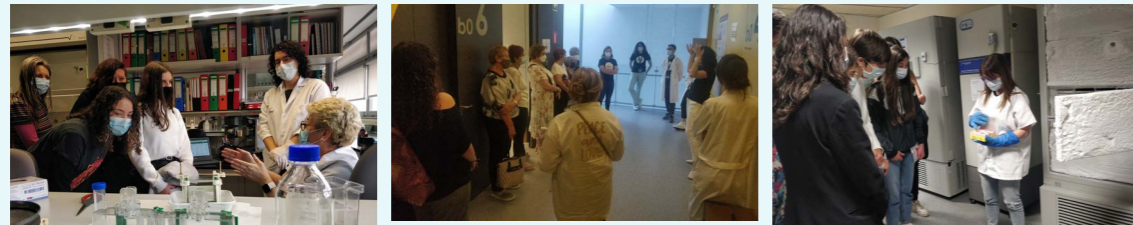
2. Outreach

The communication area is responsible for organising different types of events such as external visits and conferences, internal events, collaborating in the organisation of informative activities (seminars, conferences, workshops, etc.), among others.

Summary of activities 2022

VISITS

The IRBLleida has organised 16 visits for different group profiles (educational centres, medical, nursing and physiotherapy residents) during 2022. 308 people have enjoyed these visits that have counted with the collaboration of research groups and core facilities.



EDUCATIONAL WORKSHOPS

The Institute for Biomedical Research of Lleida (IRBLleida), with the collaboration of the La Caixa Foundation and the Department of Education, has launched the organisation of workshops aimed at secondary school students to promote the biomedical research that will be carried out in Lleida's counties and to encourage scientific vocations that will be carried out in Lleida's counties and to encourage scientific vocations.

- 25/02/2022: Institut La Mitjana i FEDAC, Lleida
- 11/03/2022: Col·legi Mare de Déu de Montserrat, les Borges Blanques
- 18/03/2022: Col·legi la Mitjana, Lleida
- 25/03/2022: Col·legi Mare de Déu de Montserrat, les Borges Blanques
- 01/04/2022: Institut Mater Salvatoris, Lleida
- 08/04/2022: Institut Maria Rúbies, Lleida
- 22/04/2022: Institut Joan Solà, Torrefarrera
- 20/05/2022: Institut Joan Solà, Torrefarrera
- 27/05/2022: Institut Escola Torre Queralt i Col·legi Sant Jaumes, les Heures, Lleida



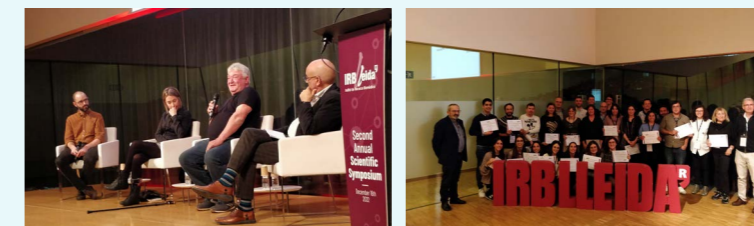
CONFERENCE/WORKSHOPS

- 23/09/2022: Nit de la Recerca.
 - Talks: 5
 - Guided tours IRBLleida: 4
 - Workshops: 20
 - Total number of people attending: 1.000



SYMPOSIUMS

- 16/12/2022: Second IRBLleida Annual Scientific Symposium. "Second Annual Scientific Symposium" was held at the Llotja de Lleida. The aim of this symposium is to improve the visibility of the research carried out by the different IRBLleida research groups.



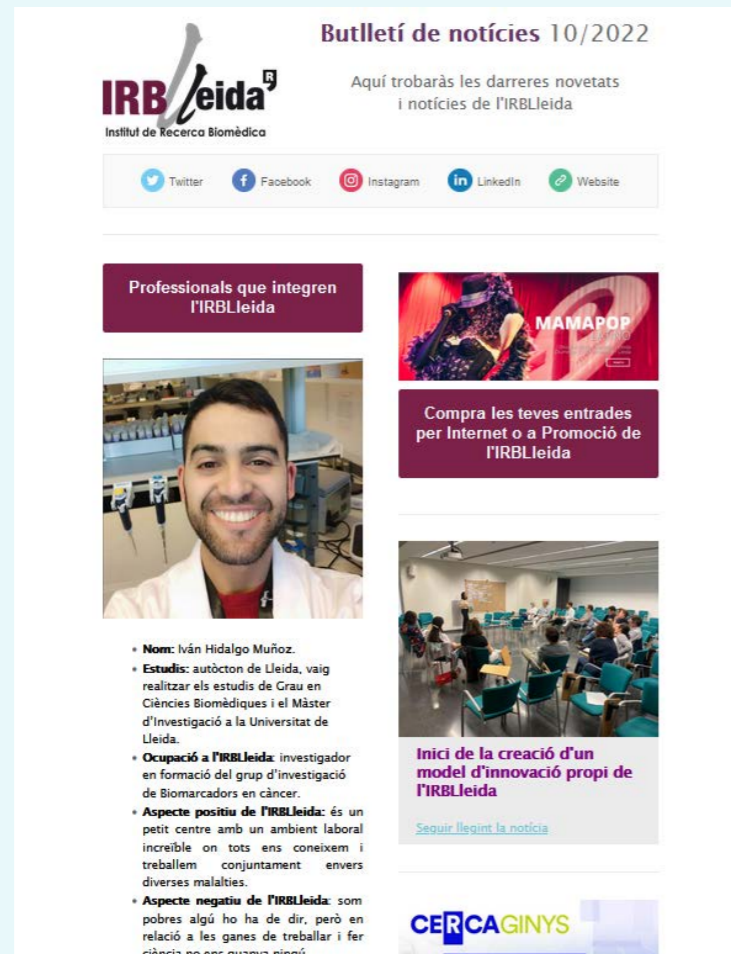
OTHER ACTIVITIES

- LleidaConCiencia Podcasts
- Inspiracy Lleida
- Become a Lleida Scientist
- CiènciArt Ponent: Science and Art for Future Researchers



3. Internal communication

Monthly electronic bulletin with the news of the month, as well as an interview with a person from the centre and a collaborating organizations and companies.



Social activities



Adhesion to the European Mobility Week



Alumni IRBLeida



IRBLeida with the family



Own campaigns on social networks



4. External communication

During the year 2022 the IRBLleida has released 63 press notes, mainly through web and newspapers. These press notes has have resulted in a total of 1,071 media hits. In addition, there has been a significant increase in the number of followers on social networks compared to previous years.

Press

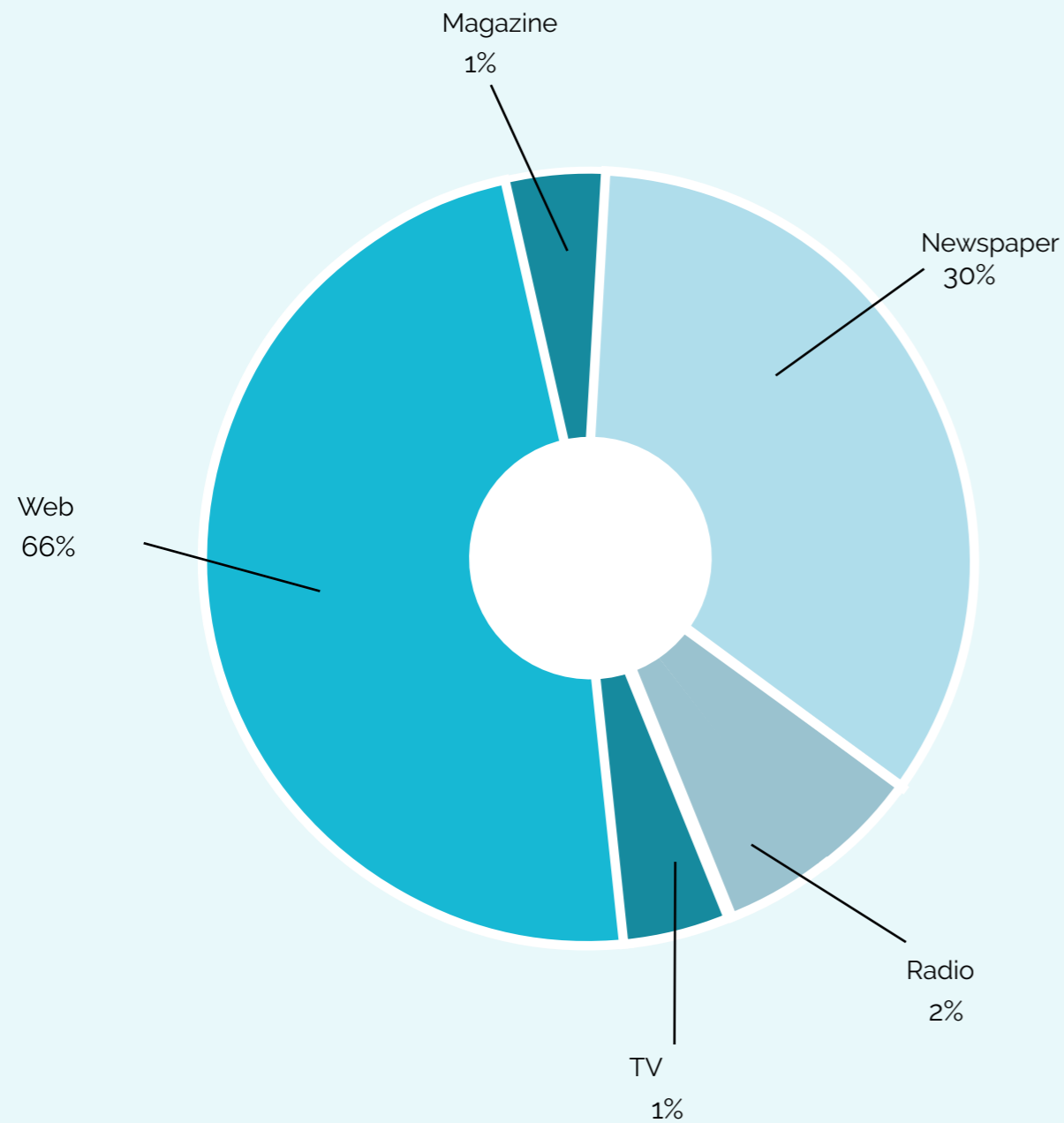


Figure 3. Press releases during 2022.

Social networks

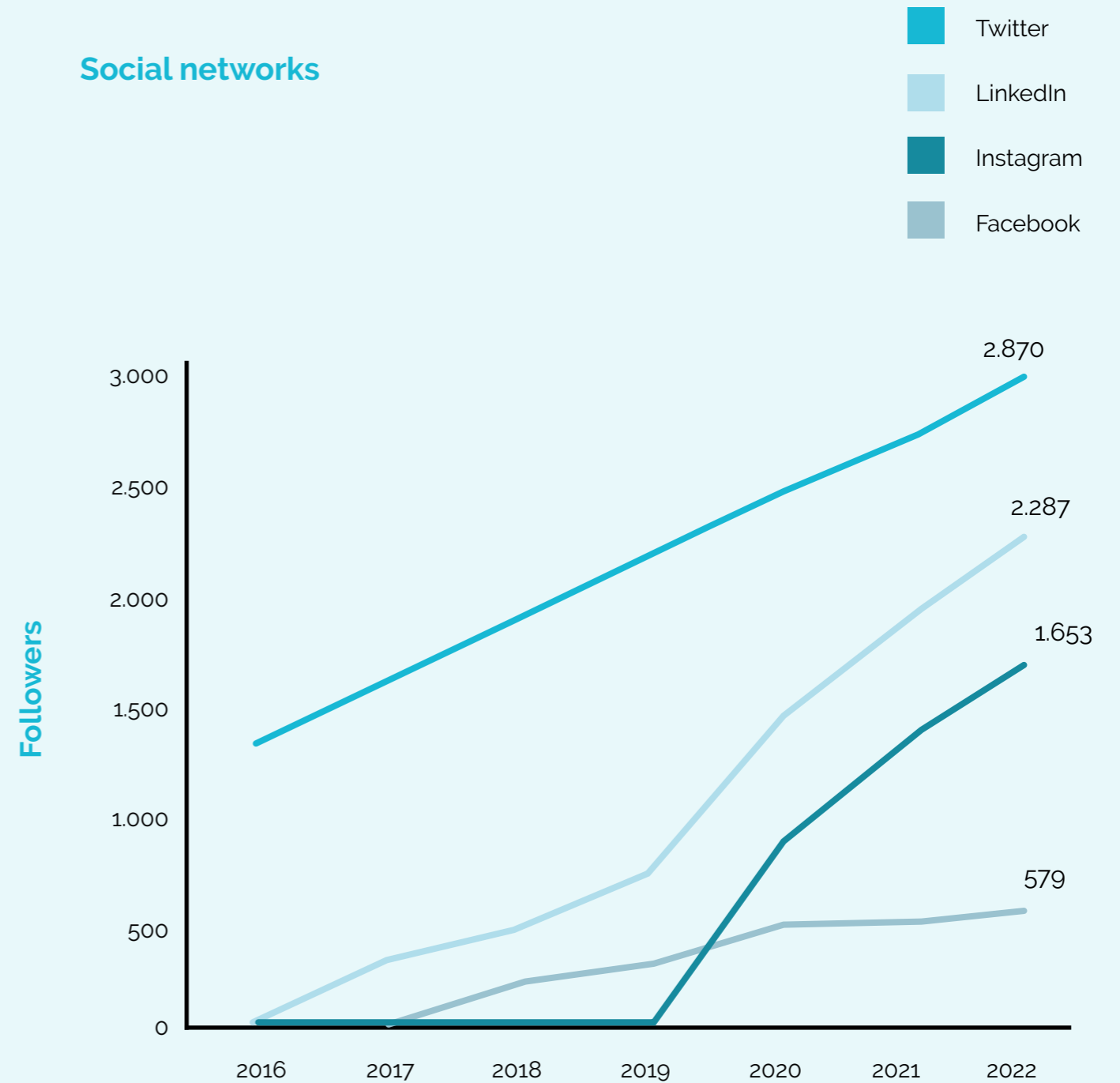


Figure 4. Historical data on social networks followers .

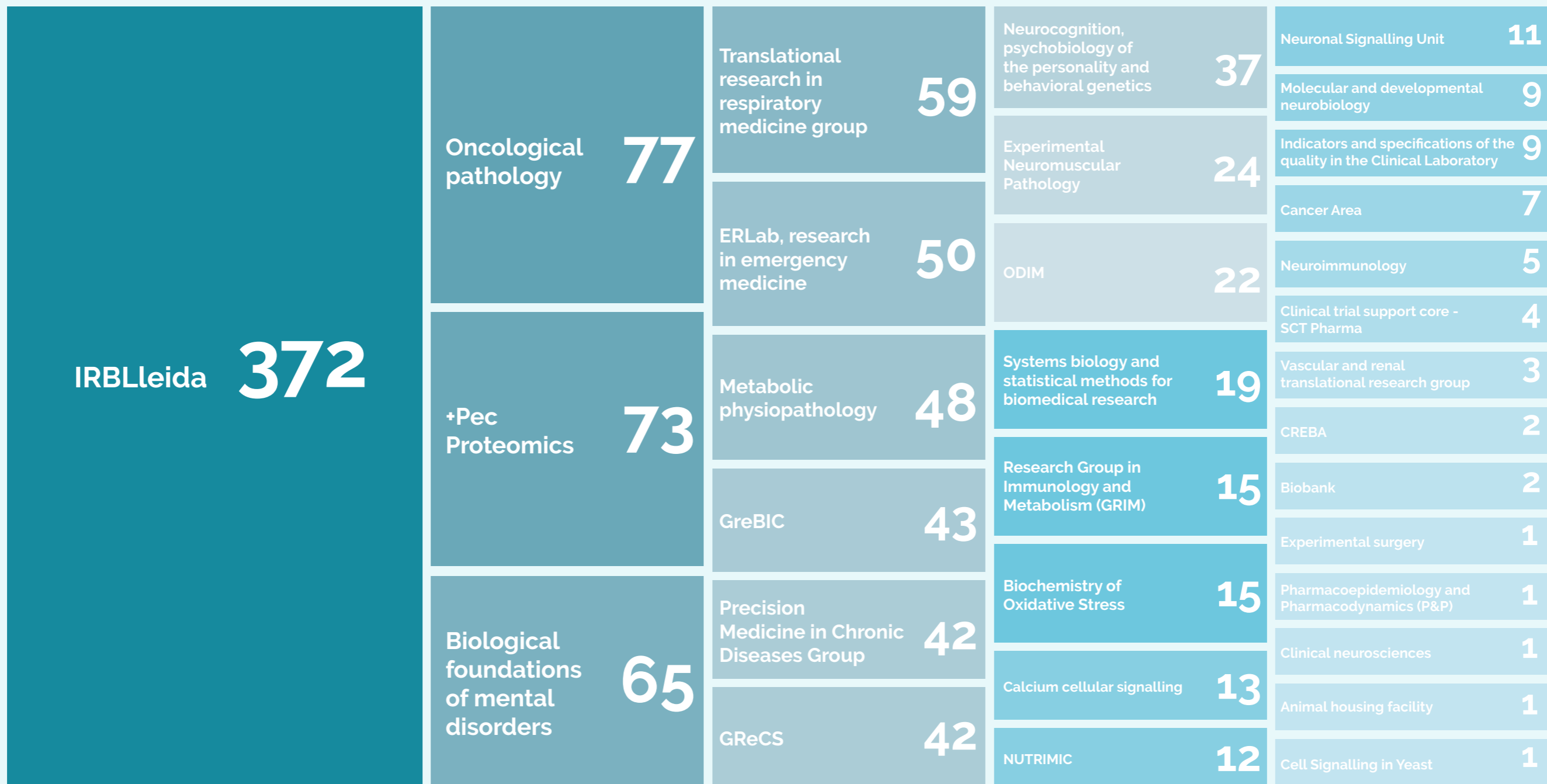


Figure 5. Media impacts (TV, radio, press and others) of the different scientific-technical groups and services in 2023.



Research activity

IRBLleida staff

IRBLleida comprises 495 professionals, of which 423 are personnel devoted to research. The research staff are distributed in the following profiles: First Stage Researcher (R1), Recognised Researcher (R2), Established Researcher (R3) and Leading Researcher (R4). The support staff are distributed in: Support office, Research technician and core facilities support (SCT).

Distribution by researcher categories

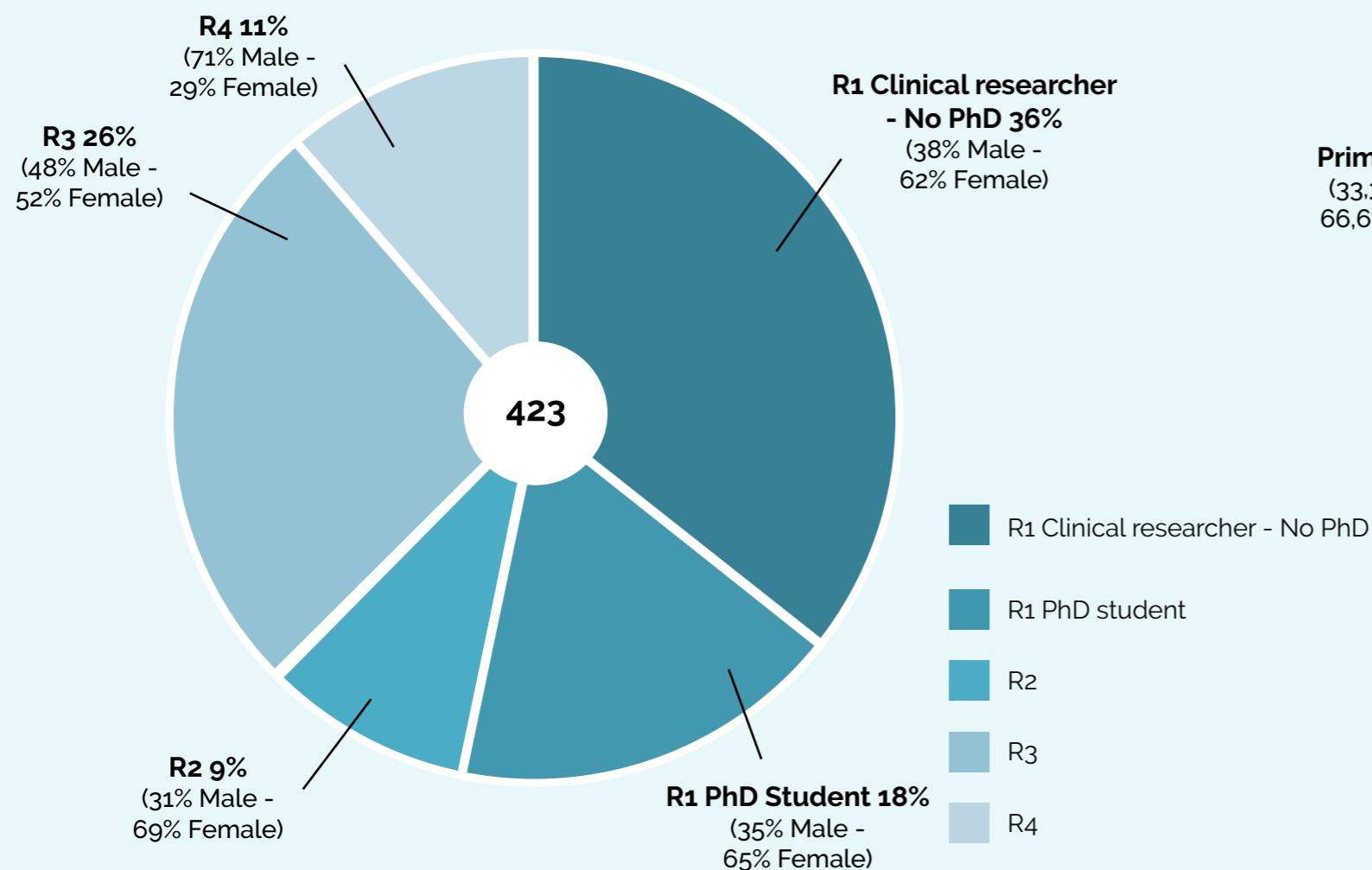


Figure 6. Classification of researchers by categories.

	Male	Female	Total
Support office	3	19	22
Research technician	5	17	22
SCT	2	26	28

Table 5. Classification of support staff by categories.

Distribution by affiliation

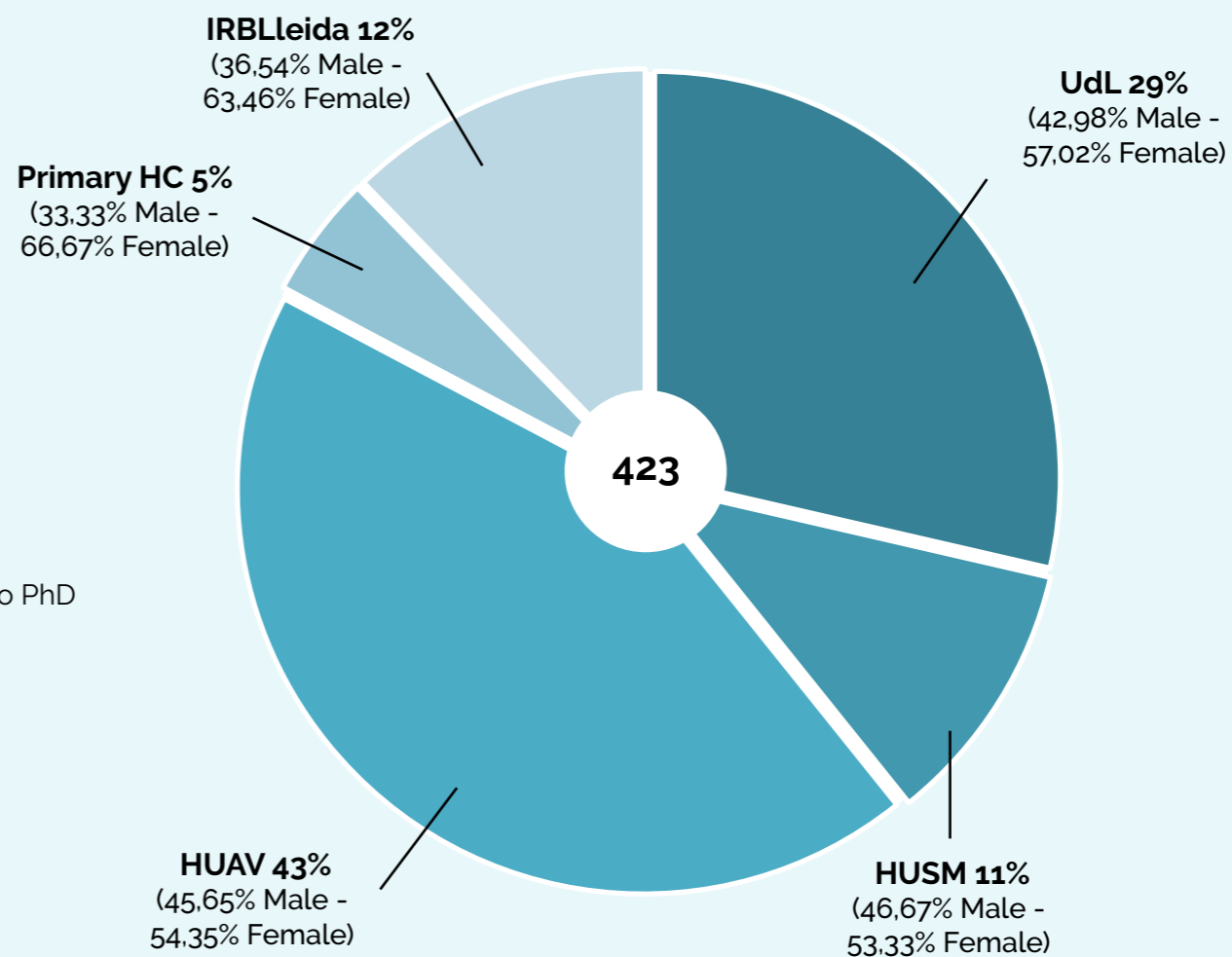


Figure 7. Classification of researchers by employers.

- Universitat de Lleida (UdL)
- Hospital Universitari de Santa Maria (HUSM)
- Hospital Universitari Arnau de Vilanova de Lleida (HUAV)
- Primary HealthCare (Primary HC)
- IRBLleida



Global data on scientific production

In 2022, IRBLLeida researchers produced a total of 317 scientific publications, of which 301 are original publications, 8 review articles and 8 letters.

	Publications	Average IF	IF Cumulative
Articles	301	7.23	2175,6
Reviews	8	6.43	51.4
Letters	8	14.01	112.1
Total	317	7.37	2339,1

Publication by quartile

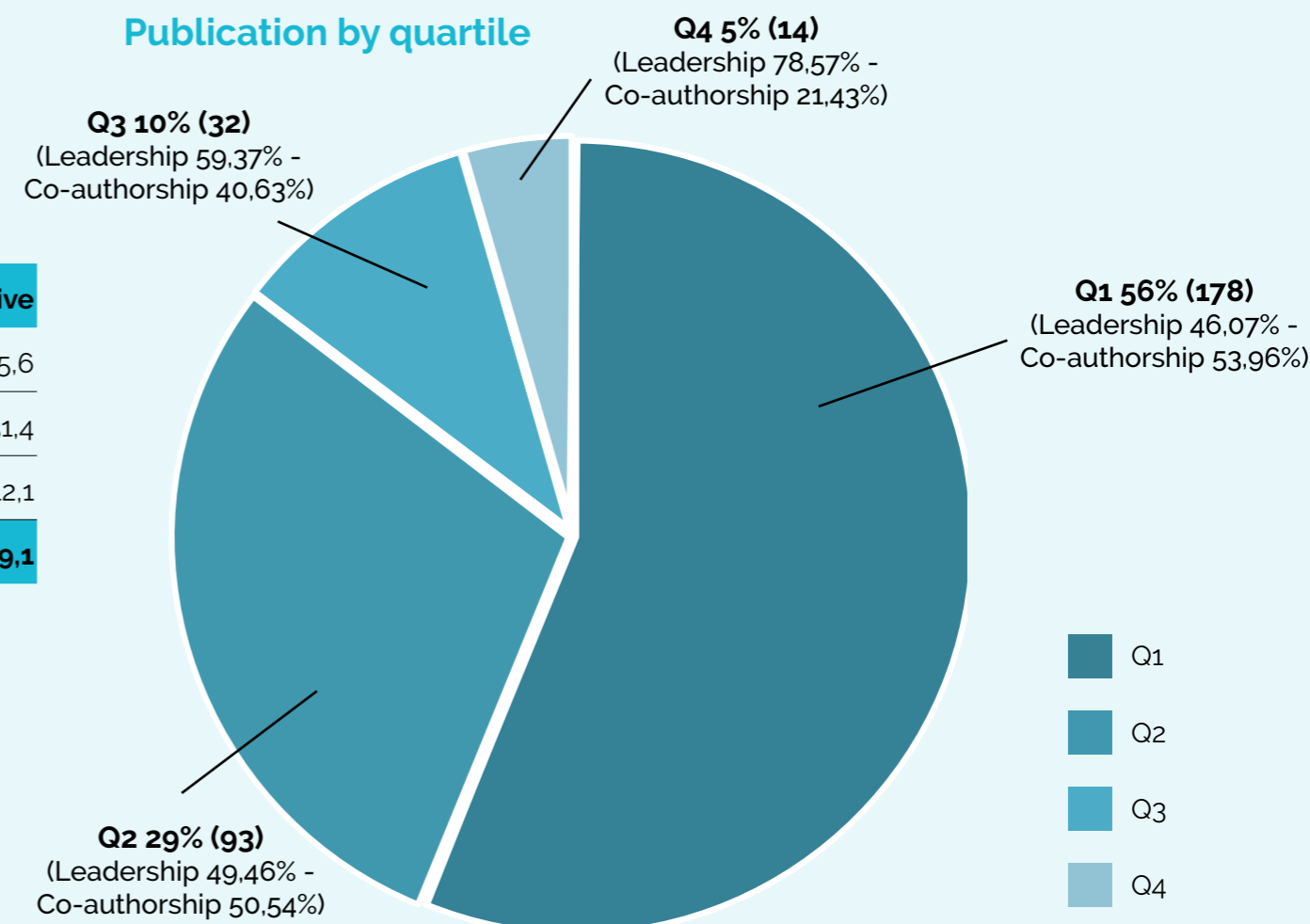


Table 6. Scientific production 2022. Number of publications and accumulated impact factor (IF), according to the 2021 Journal Citation Report.

Figure 8. Scientific production for 2022 by specialty quartiles. Percentage of publications per quartile (Q), total number of publications are in brackets. For each quartil leadership and co-authorship is indicated in percentatge.



Historical data on quartile publications

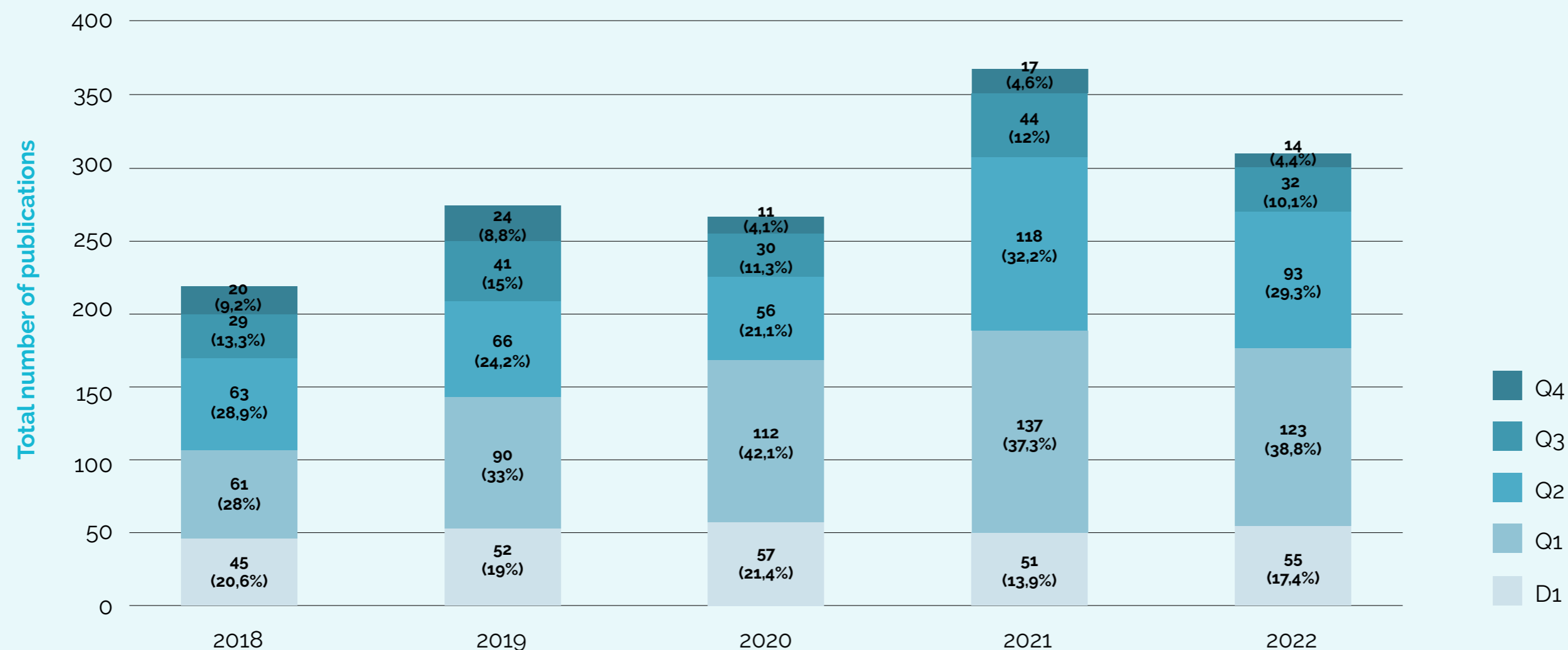


Figure 9. Total number of publications as well as the number and percentage of publications by decile/quartile. The Q1 category shown in the graph represents only the non-D1 Q1 publications. Therefore, the total number of publications in the first quartile would correspond to the sum of the categories Q1+D1 that appear in the graph.



The accumulated impact factor and the number of publications have slightly decreased in 2022 compare to 2021, but the average impact factor is the highest of all the historical series. Figures 10 and 11 show the evolution of scientific production in the last 5 years, in number of publications and average and cumulative impact factor (JCR).

Publications and citations historical series

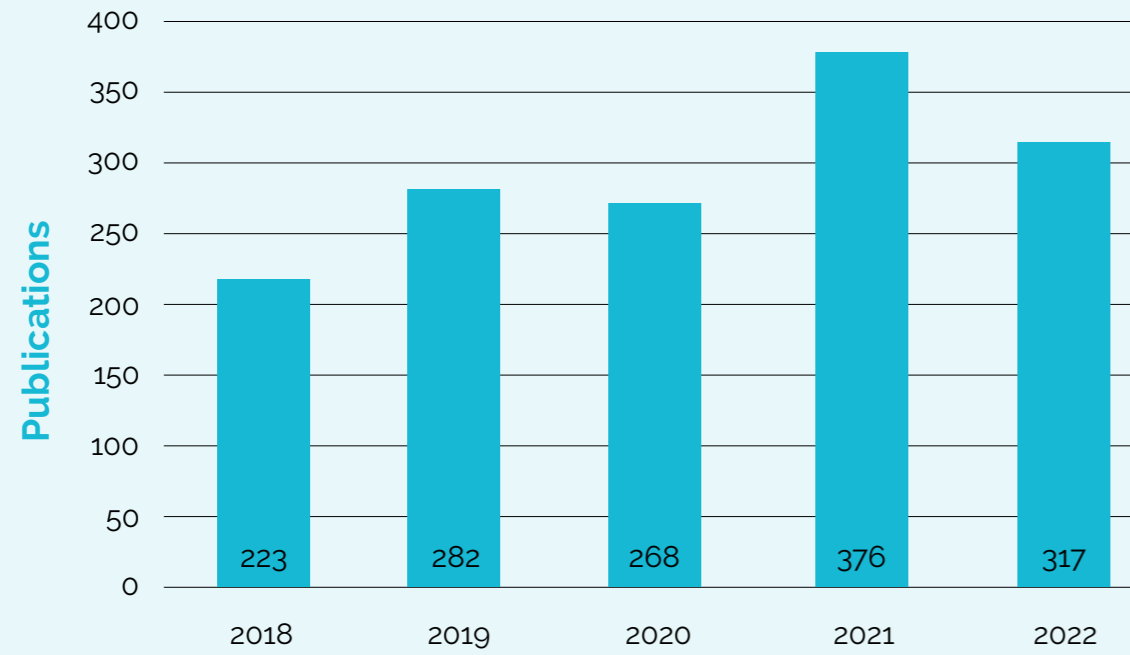


Figure 10. Total number of publications in the last 5 years. The blue line indicates the cumulative number of citations per year.

Impact factor historical series

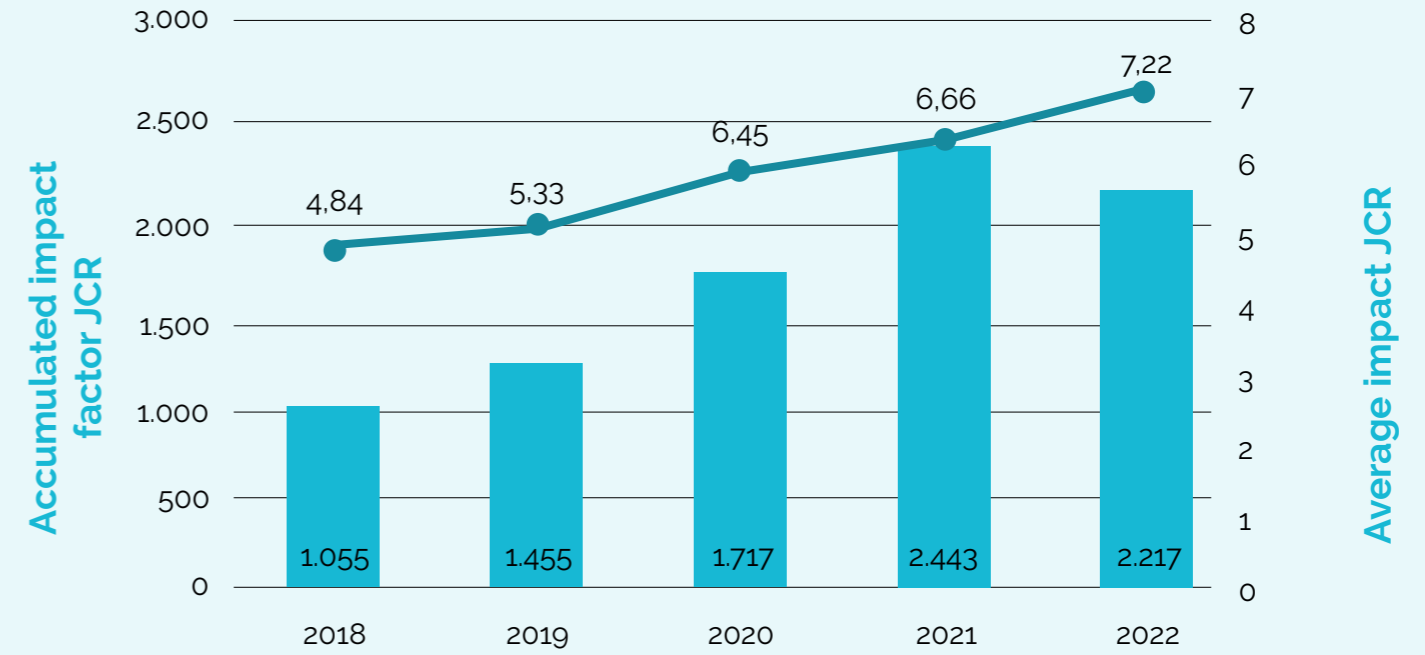


Figure 11. Evolution of the accumulated Impact Factor (IF) (bars) and average (points), The 2022 FI has been calculated according to the 2021 Journal Citation Report.

In 2022 50% publications have been led by IRBLleida researchers (Fig. 12), understanding leadership as the first and/or last author or corresponding. The remaining 50% correspond to publications in which IRBLleida researchers participate in the research team. 35,56% of publications have been in international collaboration (Fig. 13).

Publication leadership

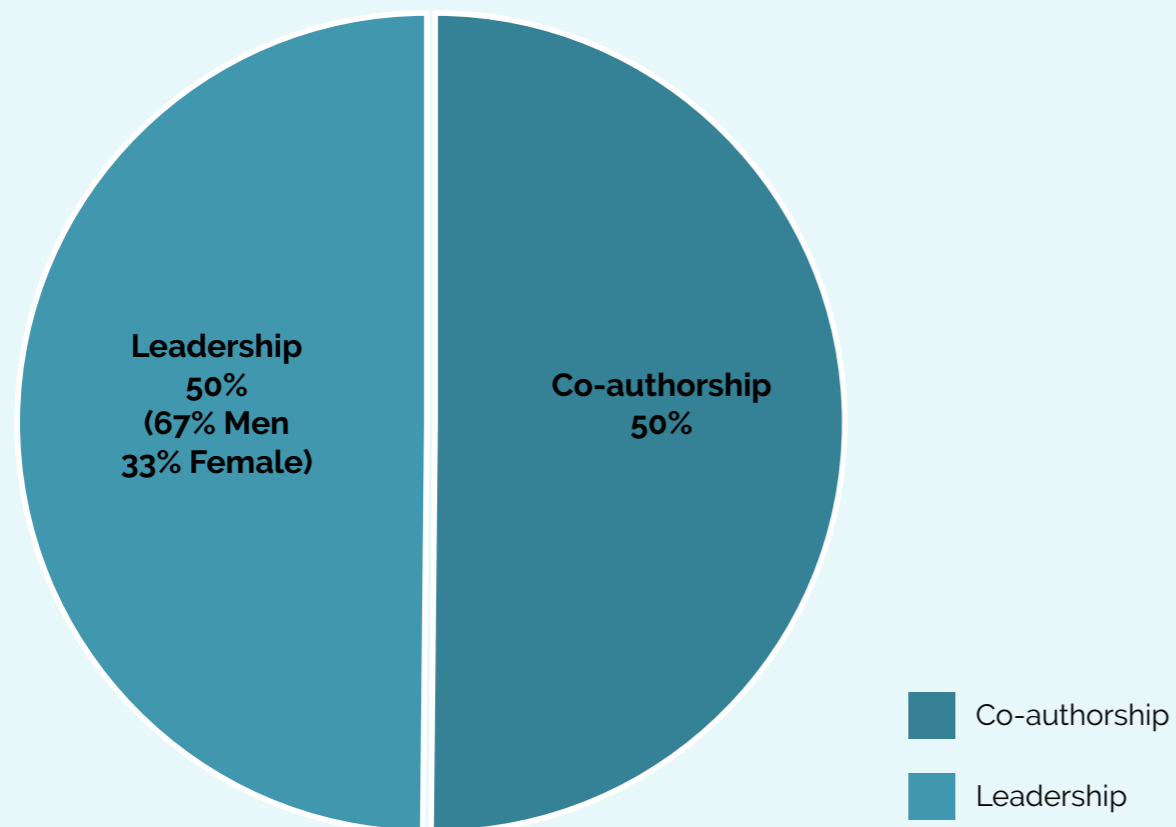


Figure 12. Distribution of 2022 publications according to IRBLleida research leadership.

Publication Collaborations

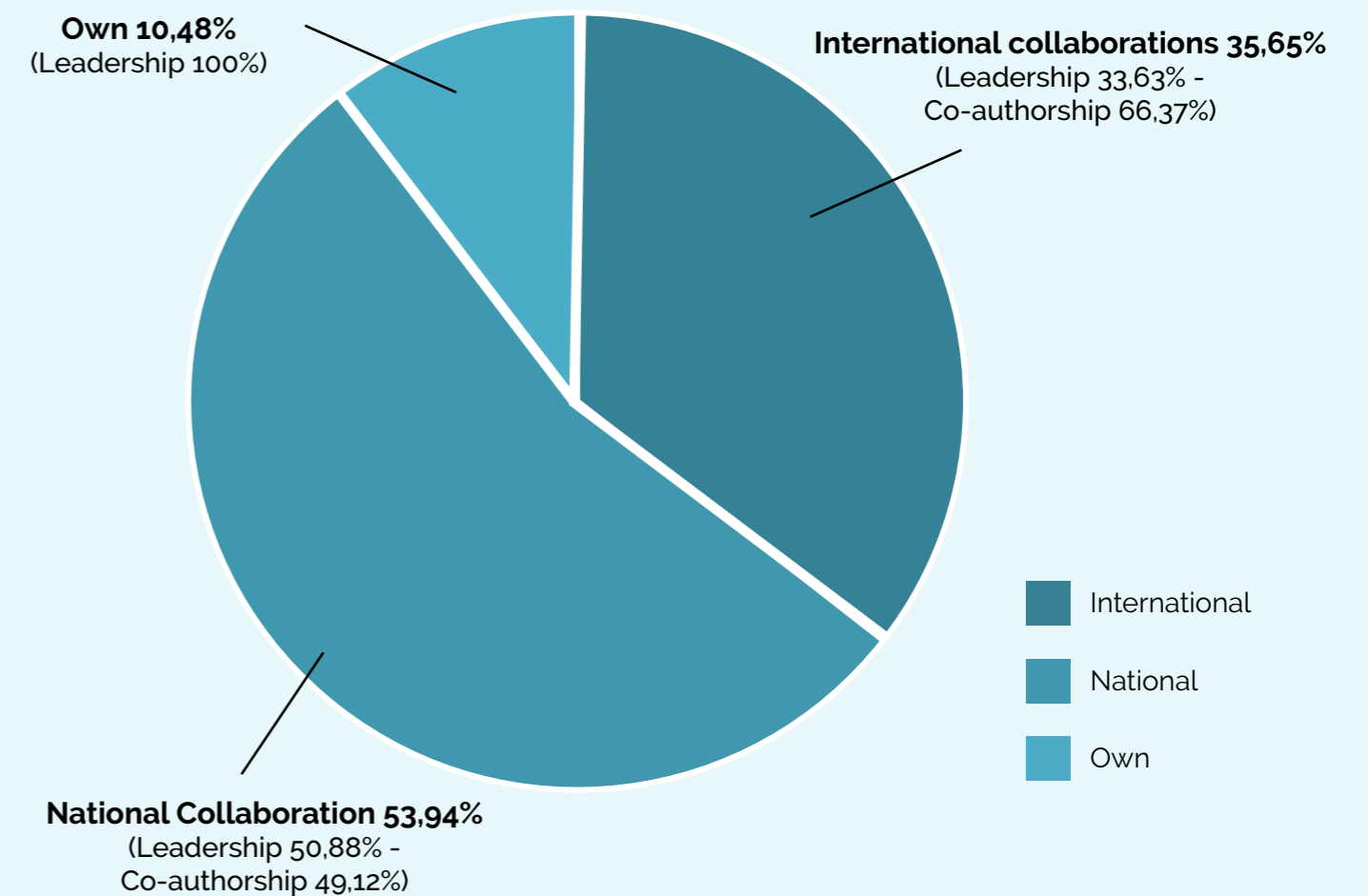


Figure 13. Distribution of 2022 publications by type of collaboration. Collaboration with international, national or own researchers if all authors are affiliated with IRBLleida. For each group leadership and co-authorship is indicated in percentatge.



Scientific production by areas

Research areas	Number of publications	Total IF	Average IF	Q1 publications	D1 publications
Cancer	49	378,21	7,72	73,5% (36)	20,4% (10)
Chronic diseases, surgery and health care	129	875,06	6,78	55,0% (71)	15,5% (20)
Epidemiology, infectious diseases and public health	60	364,15	6,07	45,0% (27)	11,7% (7)
Neurosciences	64	580,80	9,08	46,9% (30)	21,9% (14)
Nutrition, metabolism and cellular stress	58	442,75	7,63	69,0% (40)	20,7% (12)
Other lines	19	124,41	6,55	63,2% (12)	10,5% (2)

Table 7. Publications, IF, quartile and decile of IRBLLeida areas in 2022.



Scientific production by group

Group	Total Publications	Total IF	Average IF	Q1 Publications	D1 Publications
Cancer					
Calcium cellular signalling	4	23,29	5,82	75,0 % (3)	50,0% (2)
Cell cycle	4	26,69	6,67	75,0 % (3)	0,0% (0)
Developmental and oncogenic signalling	3	19,96	6,65	66,7% (2)	0,0% (0)
Drosophila models of disease	0	0,00	0,00	0,0% (0)	0,0% (0)
Molecular oncology	3	26,42	8,81	100,0% (3)	66,7% (2)
Oncological pathology	23	173,83	7,56	69,6% (16)	21,7% (5)
Research group of cancer biomarkers (GReBIC)	19	159,95	8,42	78,9% (15)	10,5% (2)
Chronic diseases, surgery, and health care					
Experimental surgery	8	43,37	5,42	37,5% (3)	12,5% (1)
Precision medicine in chronic diseases group	34	283,65	8,34	64,7% (22)	23,5% (8)
Research group in immunology and metabolism (GRIM)	19	101,92	5,36	47,4% (9)	5,3% (1)
Research group of health care (GReCS)	34	134,28	3,95	50,0% (17)	14,7% (5)
Translational research in respiratory medicine group	48	441,30	9,19	58,3% (28)	25,0% (12)
Vascular and renal translational research group	26	152,90	5,88	57,7% (15)	0,0% (0)
Epidemiology, infectious diseases and public health					
Applied epidemiology	11	50,12	4,56	45,5% (5)	0,0% (0)
ERLab, research in emergency medicine	7	28,74	4,11	28,6% (2)	14,3% (1)
Genetics of complex diseases	2	6,30	3,15	0,0% (0)	0,0% (0)
Indicators and specifications of the quality in the clinical laboratory	5	33,96	6,79	80,0% (4)	0,0% (0)
Intensive medicine	16	155,01	9,69	62,5% (10)	18,8% (3)
Pharmacoepidemiology and pharmacodynamics	9	26,59	2,95	11,1% (1)	11,1% (1)
Translational research group on infectious disease of Lleida (TRIDLE)	11	68,67	6,24	54,5% (6)	18,2% (2)



Scientific production by group

Group	Total Publications	Total IF	Average IF	Q1 Publications	D1 Publications
Neurosciences					
+Pec proteomics	2	24,68	12,34	50,0% (1)	50,0% (1)
Biological foundations of mental disorders	9	49,57	5,51	44,4% (4)	22,2% (2)
Clinical neurosciences	23	360,40	15,67	60,9% (14)	34,8% (8)
Evolutionary developmental neurobiology	12	46,89	3,91	50,0% (5)	16,7% (2)
Experimental neuromuscular pathology	2	13,68	6,84	50,0% (1)	0,0% (0)
Molecular and developmental neurobiology	2	14,23	7,12	50,0% (1)	0,0% (0)
Neurocognition, psychobiology of the personality and behavioural genetics	11	42,633	3,88	27,3% (3)	11,1% (1)
Neuroimmunology	9	53,66	5,96	33,3% (3)	11,1% (1)
Neuronal signalling unit	1	6,15	6,15	100,0% (1)	0,0% (0)
Nutrition, metabolism and cellular stress					
Biochemistry of oxidative stress	2	15,44	7,72	100,0% (2)	0,0% (0)
Cell signalling and apoptosis group	1	5,62	5,62	0,0% (0)	0,0% (0)
Cell signalling in yeast	2	12,30	6,15	100,0% (2)	0,0% (0)
Clinical and experimental research in digestive and hematological pathology	14	91,59	6,54	42,9% (6)	7,1% (1)
Metabolic physiopathology	29	265,07	9,14	79,3% (23)	31,0% (9)
Molecular biology of yeast	1	5,72	5,72	100,0% (1)	0,0% (0)
Nutrition, metabolism and microbiota in patients with heart failure (NUTRIMMIC)	2	14,46	7,23	100,0% (2)	0,0% (0)
Systems biology and statistical methods for biomedical research	11	56,80	5,16	63,6% (7)	18,2% (2)
Other lines					
Other lines	19	124,41	6,55	63,2% (12)	10,5% (2)

Table 8. Publications, IF, quartile and decile of IRBLLeida groups in 2022.



Intramural research calls

Intramural Research Program - IREP 2022

IRBLleida is committed to promoting the research activity of the groups of our institute and dedicates a significant part of the annual budget to an Intramural Research Program (IREP) consisting of different competitive calls open to all the groups in our institute. This 2022 Intramural Research Program included calls for collaborative research grants (PIRS and AgroHealth) human resources (Master students and predoctoral fellowships), and international research stay fellowships. The budget for the IREP calls for 2022 was €718.958, largely (81%) funded by the Diputació of Lleida.

1

**Collaborative Research Projects
to Promote Health Research
(PIRS 2022)**
Budget (250.000€)

2

**Joint Research Projects
on Agriculture, Food, Nutrition
and Health (AgroHealth 2022)**
Budget (135.000€)

3

**IREP Master students
fellowships 2022**
Budget (15.000€)

4

**IREP Predoctoral
fellowships 2022**
Budget (298,958€)

5

**IREP International mobility
fellowships 2022**
Budget (20.000€)



External competitive calls

Competitive projects obtained

Center	Scope	Number of grants	Funds (€)
IRBLleida	INTERNATIONAL	1	8.260,40
	NATIONAL	13	4.077.573,90
	REGIONAL	4	147.795,00
Total IRBLleida		18	4.233.629,30
UdL	INTERNATIONAL	1	28.000,00
	NATIONAL	4	730.950,00
Total UdL		5	758.950,00
Total general		23	4.992.579,30

Table 9. Competitive projects obtained in IRBLleida and UdL.

Competitive human resources obtained

Center	Scope	Number of grants	Funds (€)
IRBLleida	NATIONAL	9	918.004,00
	REGIONAL	1	64.425,41
Total IRBLleida		10	982.429,41
UdL	NATIONAL	1	194.350,00
	REGIONAL	6	547.638,17
Total UdL		7	741.988,17
Total general		17	1.724.417,58

Table 10. Competitive human resources obtained in IRBLleida and UdL.



External competitive calls

Competitive projects awarded for funder

Center	Scope	Funder	Call	Number of grants	Funds (€)
IRBLLeida	INTERNATIONAL	European Comissions EU	EU4H-2022-DGA-MS-IBA-1	1	8.260,40
	NATIONAL	Asociación Esclerosis Múltiple (EME)	Convocatoria de colaboración entre EME y REEM 2022	1	25.000,00
		Fundación ASISA	-	1	2.500,00
		Fundación Española para la Ciencia y la Tecnología FECYT	Ayudas 2021 para el fomento de la cultura científica, tecnologica y de la innovación	1	20.000,00
		Fundación José Luis Castaño SEQC	Ayudas para profesionales jóvenes para tesis doctoral 2022	1	7.500,00
		Instituto de Salud Carlos III ISCIII	AES 2022: Contratos Miguel Servet	1	40.000,00
			AES 2022: Proyectos de investigacion en salud	4	456.775,00
			AES 2022: Proyectos de medicina personalizada de precision (PMP22)	2	3.183.398,90
	AES 2021: Proyectos investigación medicina personalizada de precisión	1	312.400,00		
	REGIONAL	Sociedad Española de Oncología Medica SEOM	Becas SEOM 2022 para proyectos investigacion grupos emergentes	1	30.000,00
		Acadèmia de Ciències Mèdiques i de la Salut (Catalunya i Balears)	-	1	10.000,00
		Agencia Gestio Ajuts Universitat i Recerca AGAUR	Ajuts 2021 - Modalitat A. Llabor	1	20.000,00
		Fundació La Marató de TV3	2022: Recerca sobre salut mental	2	117.795,00
	Total IRBLLeida			18	4.233.629,30
UdL	INTERNATIONAL	Associació Francesa de l'Ataxia de Friedreich (AFAF)	-	1	28.000,00
	NATIONAL	Ministerio de Ciencia e Innovacion	2021 - Proyectos de generación de conocimiento	3	583.150,00
			Proyectos colaboración Público-Privada	1	147.800,00
Total UdL			5	758.950,00	
Total general			23	4.992.579,30	

Table 11. Competitive projects awarded for funder in IRBLLeida and UdL.



External competitive calls

Competitive human resources awarded for funder

Center	Scope	Funder	Call	Number of grants	Funds (€)
IRBLleida	NATIONAL	Fundacion cientifica de la AECC	Ayuda Económica Postdoctoral AECC 2022	1	160.000,00
		Instituto de Salud Carlos III ISCIII	AES 2022: Ayudas para la movilidad de personal investigador contratado en el marco de la AES (M-AES)	2	31.970,00
			AES 2022: Contratos de gestión en investigación en salud en IIS	1	80.700,00
			AES 2022: Contratos Miguel Servet	1	268.600,00
			AES 2022: Contratos predoctorales de formacion en investigacion en salud (PFIS)	2	239.134,00
			AES 2022: Contratos Sara Borrell	1	95.000,00
			Ministerio de Ciencia e Innovacion	Ayudas para contratos de personal tecnico de apoyo 2021	1
	REGIONAL	Agencia gestio ajuts universitat i recerca AGAUR	Ajuts per contractar personal investigador novell (FI 2022)	1	64.425,41
Total IRBLleida				10	982.429,41
UdL	NATIONAL	Ministerio de Ciencia e Innovacion	Ayudas Ramon y Cajal 2021	1	194.350,00
	REGIONAL	Agencia Gestio Ajuts Universitat i Recerca AGAUR	FI	5	359.741,55
			FI-SDUR	1	143.896,62
		Banco Santander	UdL- Impuls		44.000,00
Total UdL				7	741.988,17
Total general				17	1.724.417,58

Table 12. Competitive human resources awarded for funder in IRBLleida and UdL.



External competitive calls

Competitive projects awarded

Center	Scope	Funder	Official code	Funds (€)
IRBLleida	INTERNATIONAL	European Comissions EU		8.260,40
	NATIONAL	Asociación Esclerosis Múltiple (EME)		25.000,00
		Fundación ASISA		2.500,00
		Fundación Española para la Ciencia y la Tecnología FECYT	FCT-21-17091	20.000,00
		Fundación José Luis Castaño SEQC		7.500,00
		Instituto de Salud Carlos III ISCIII	CP22/00081	40.000,00
			PI22/00443	93.170,00
			PI22/00636	147.015,00
			PI22/00773	183.920,00
			PI22/01687	32.670,00
			PMP21/00109	312.400,00
		PMP22/00030	2.344.100,00	
		PMP22/00073	839.298,90	
	REGIONAL	Sociedad Española de Oncología Medica SEOM		30.000,00
		Acadèmia de Ciències Mèdiques i de la Salut (Catalunya i Balears)	PEU	10.000,00
		Agencia Gestio Ajuts Universitat i Recerca AGAUR	2021 LLAV 00018	20.000,00
Fundació La Marató de TV3		234/U/2022	62.187,50	
		271/C/2022	55.607,50	
Total IRBLleida			4.233.629,30	
UdL	INTERNATIONAL	Associació Francesa de l'Ataxia de Friedreich (AFAF)		28.000,00
	NATIONAL	Ministerio de Ciencia e Innovacion	CPP2021-008554	147.800,00
			PID2021-122785OB-I00	226.200,00
			PID2021-127689NB-I00	229.900,00
		PID2021-129089NB-I00	127.050,00	
Total UdL			758.950,00	
Total general			4.992.579,30	

Table 13. Competitive projects awarded in IRBLleida and UdL.



External competitive calls

Competitive human resources obtained

Center	Scope	Funder	Official code	Funds (€)	
IRBLleida	NATIONAL	Fundacion cientifica de la AECC	POSTD223112VISA	160.000,00	
			Instituto de Salud Carlos III ISCIII	CD22/00028	95.000,00
			FI22/00012	119.567,00	
			FI22/00167	119.567,00	
			GIS22/00025	80.700,00	
			MS22/00081	268.600,00	
			MV22/00017	20.585,00	
			MV22/00031	11.385,00	
			Ministerio de Ciencia e Innovacion	PTA2021-020551-I	42.600,00
			REGIONAL	Agencia gestio ajuts universitat i recerca AGAUR	2022 FI_B00034
Total IRBLleida				982.429,41	
UdL	NATIONAL	Ministerio de Ciencia e Innovacion	RYC2021-002652-C	194.350,00	
	REGIONAL	Agencia gestio ajuts universitat i recerca AGAUR		503.638,17	
		Banco Santander		44.000,00	
Total UdL				741.988,17	
Total general				1.724.417,58	

Table 14. Competitive human resources obtained in IRBLleida and UdL.

Historical data on funds obtained from competitive calls

In 2022 researchers obtained in IRBLleida 4.233.629,3€ and UdL 758.950€ from competitive projects.

Funded projects IRBLleida

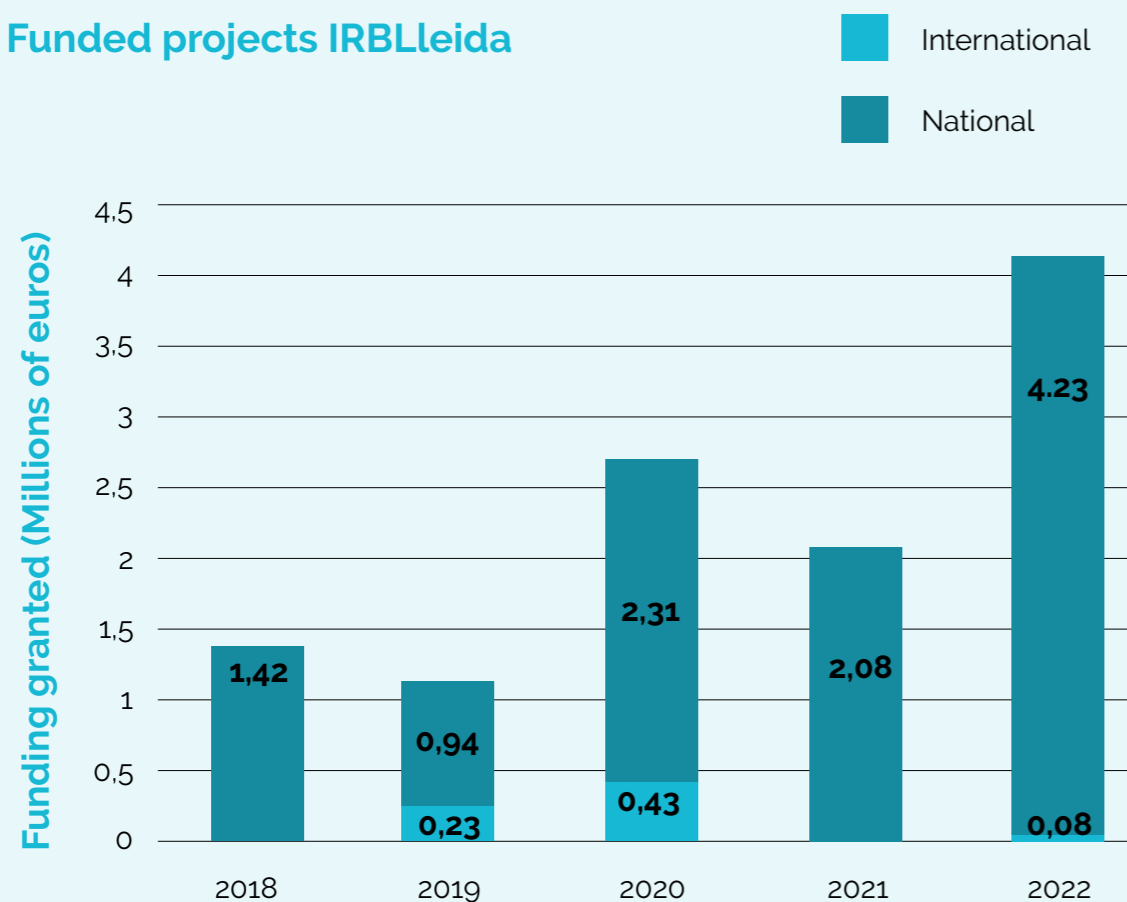


Figure 14. Historical data on funds obtained by IRBLleida from competitive projects, by national/international source.

Funded projects IRBLleida & UdL

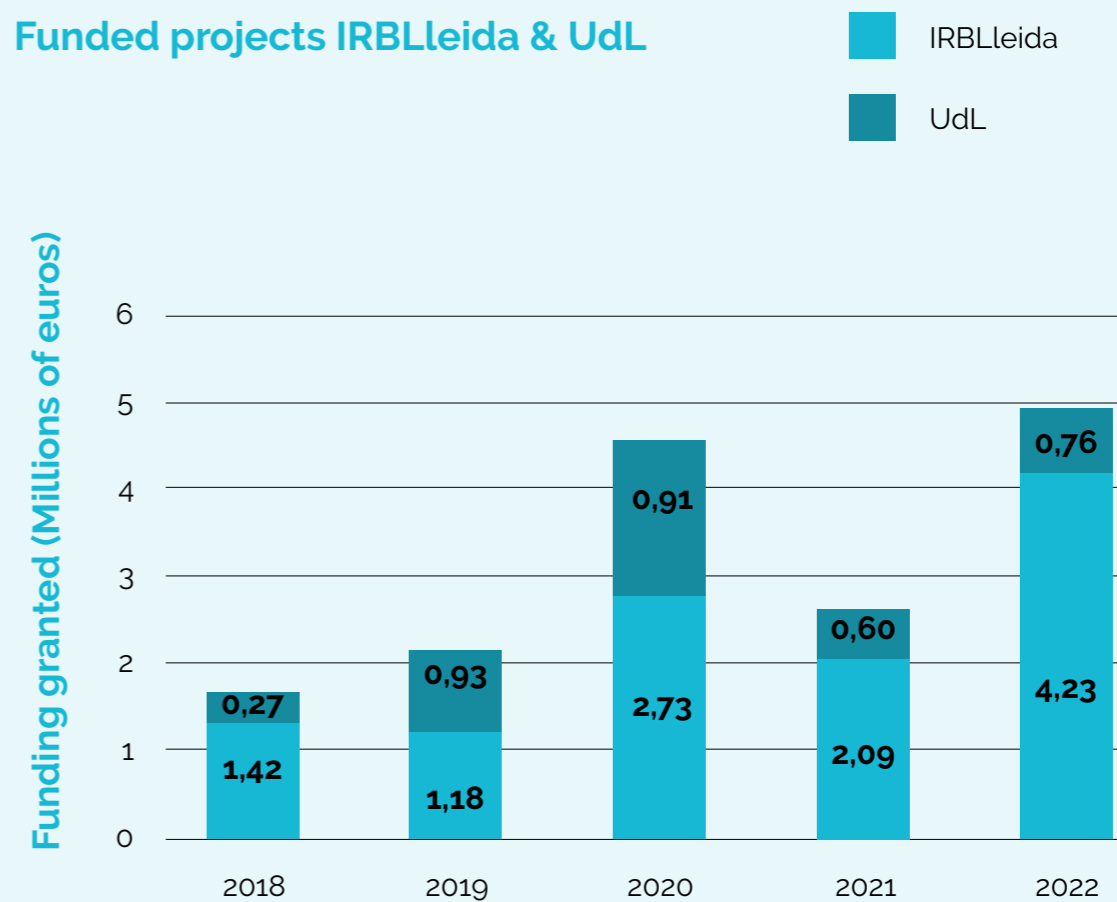


Figure 15. Historical data on funds obtained by IRBLleida and UdL from competitive projects.

Historical data on funds obtained from human resources competitive calls

In 2022 researchers obtained in IRBLleida 982.429,41€ and UdL 741.988,17€ from human resources competitive calls.

Funded human resources IRBLleida

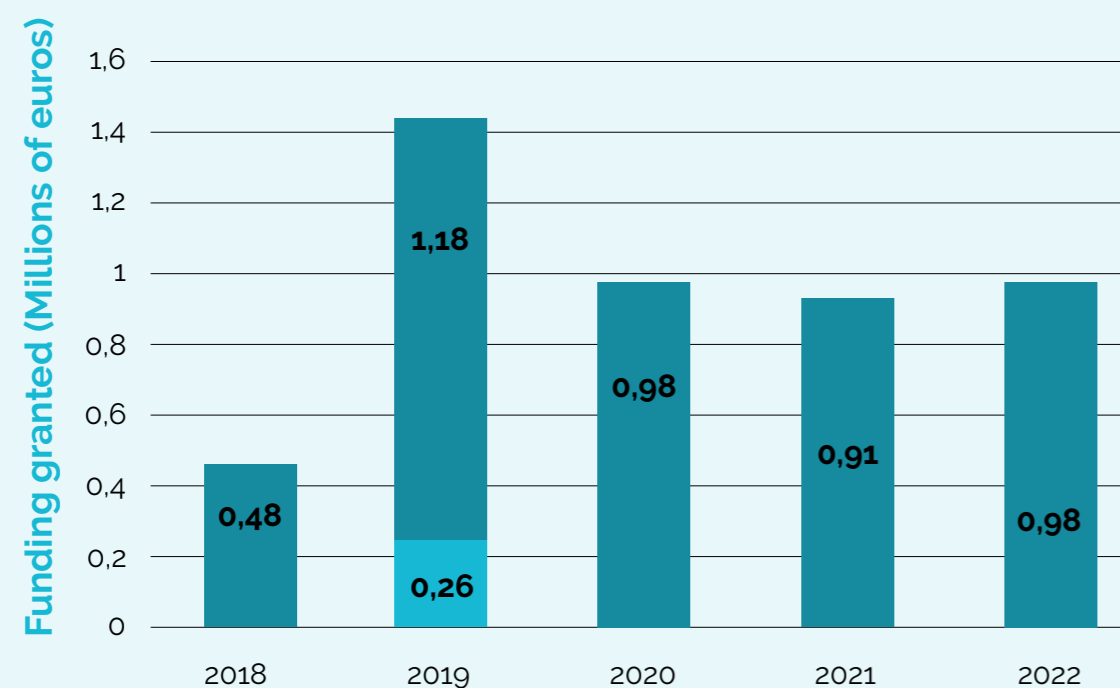
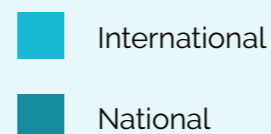


Figure 16. Historical data on funds obtained by IRBLleida from competitive human resources, by national/international source.

Funded human resources IRBLleida & UdL

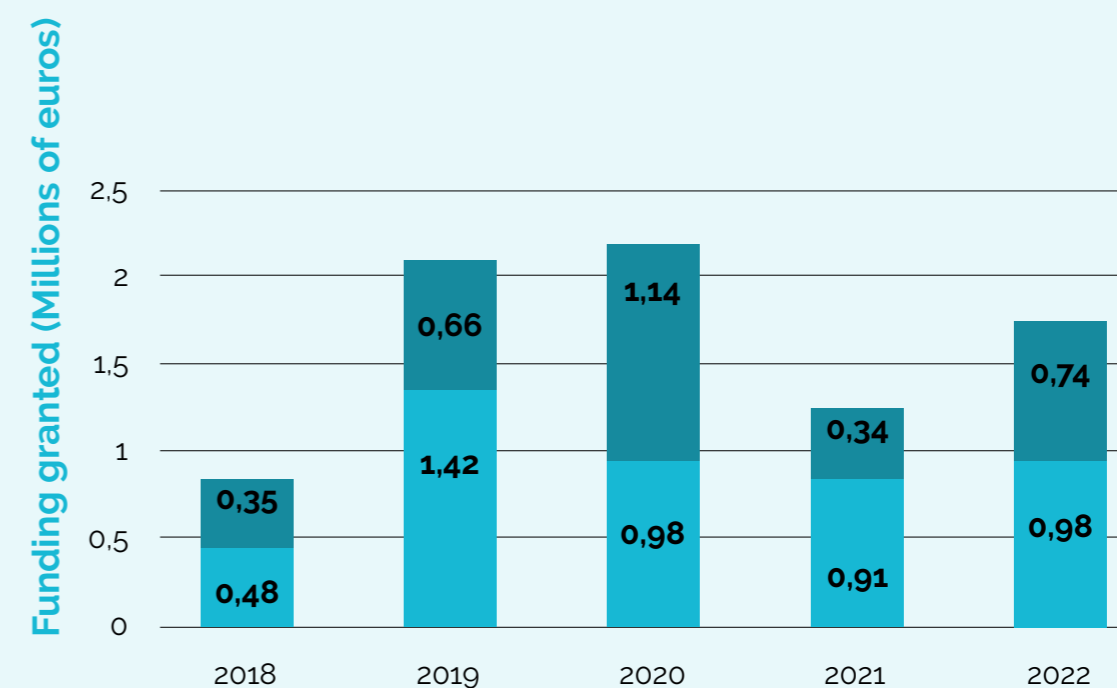


Figure 17. Historical data on funds obtained by IRBLleida and UdL from public competitive human resources.



Clinical trials and observational studies

The total number of clinical trials and observational studies started during 2022 was 54 (37 clinical trials and 17 observational studies). The active clinical trials and observational studies were 222 (157 clinical trials and 65 observational studies).

New clinical trials and observational studies

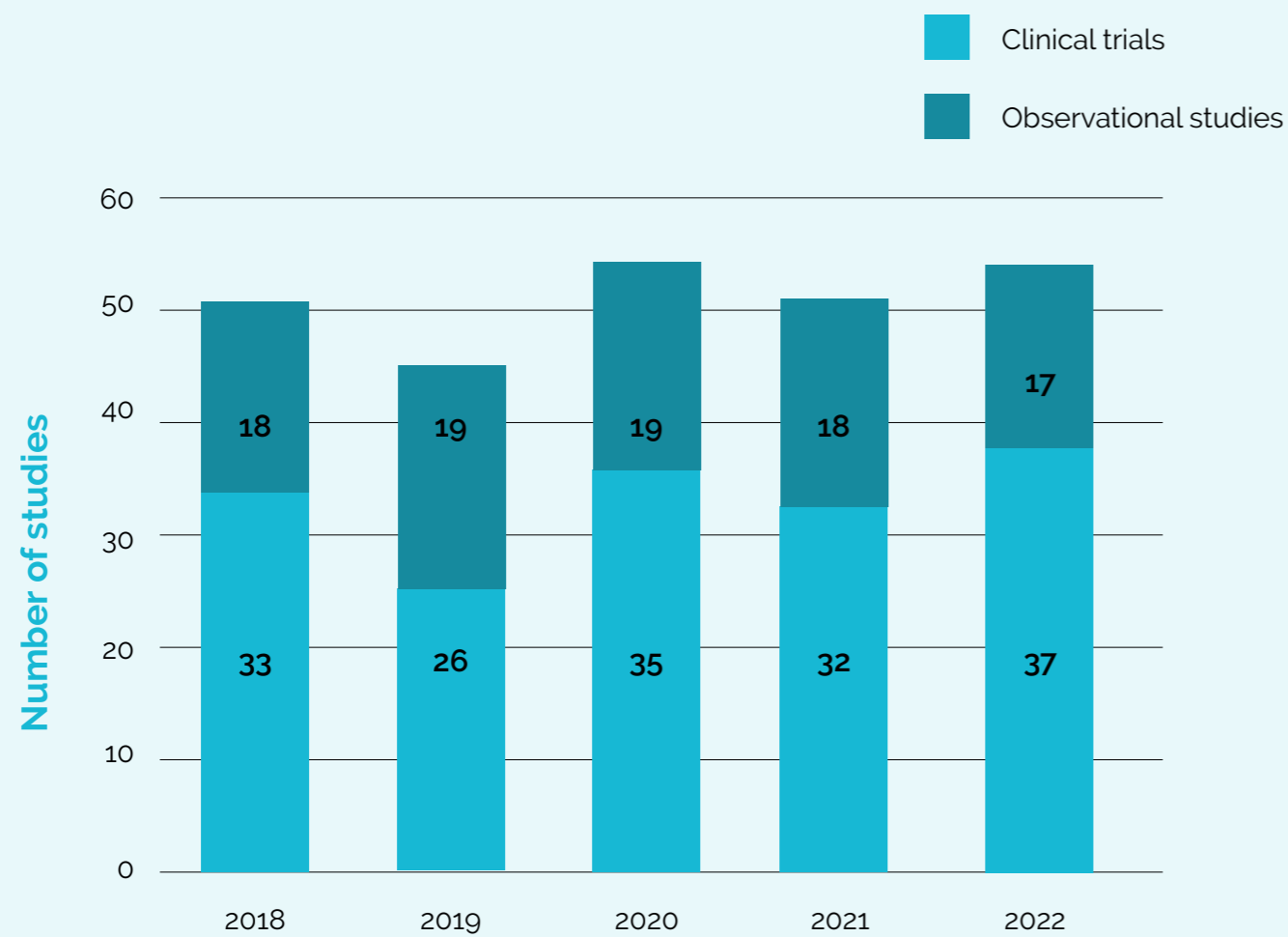


Figure 18. Historical data on new clinical trials and observational studies.

Active clinical trials and observational studies

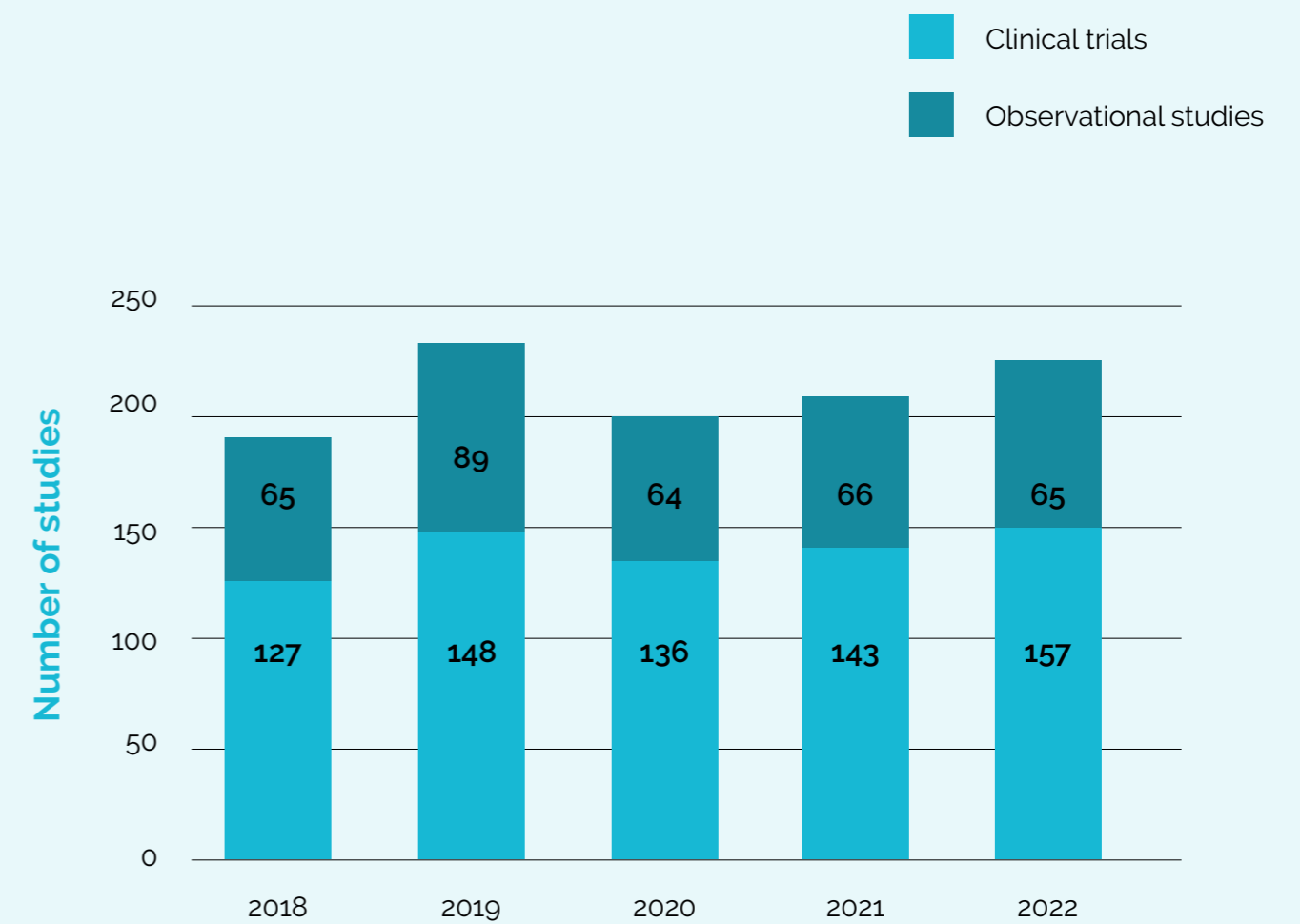


Figure 19. Historical data on active clinical trials and observational studies.



Clinical trials and observational studies

Number of active clinical studies by medical area during 2022.

Active clinical trials by medical area

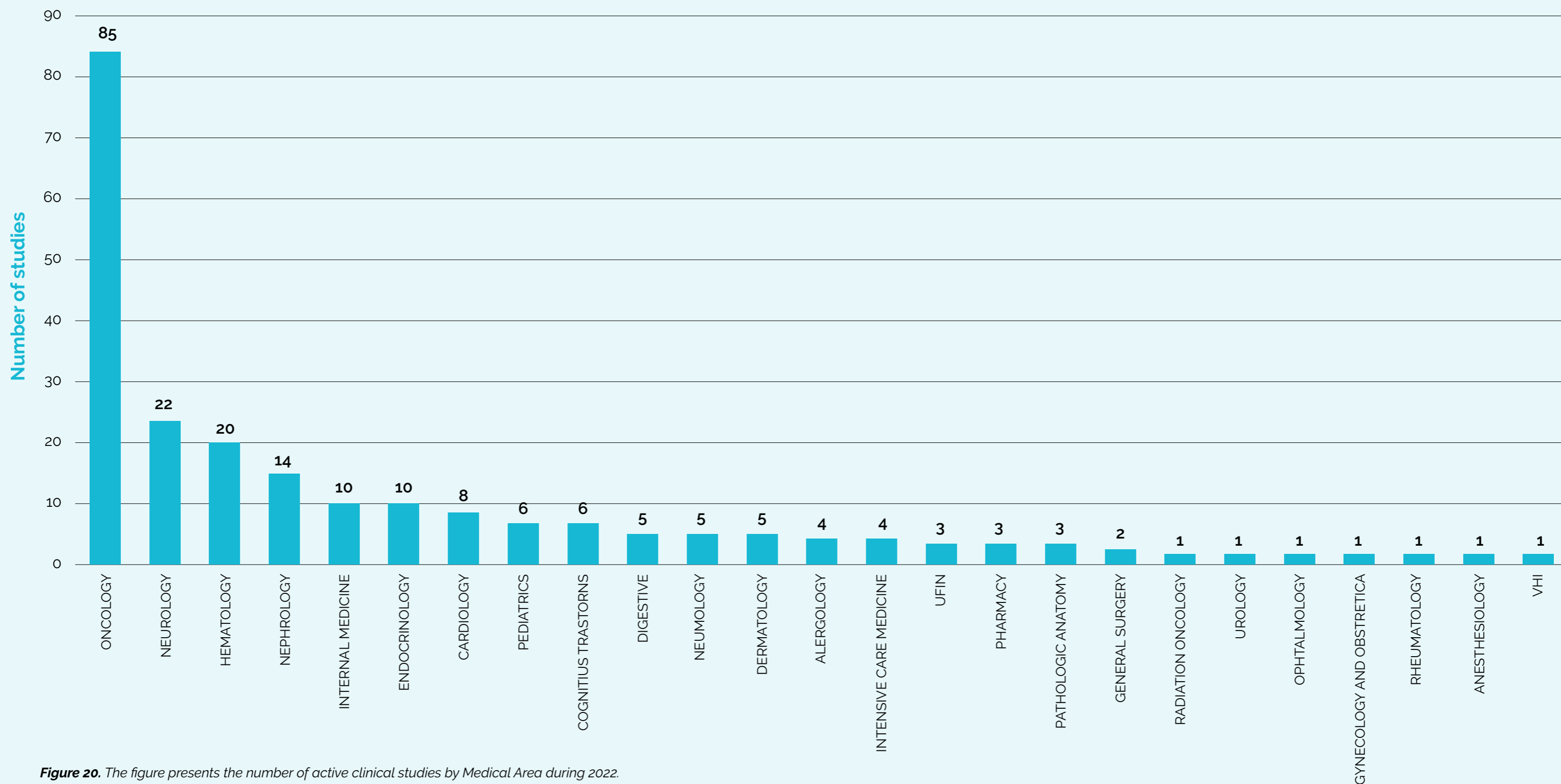


Figure 20. The figure presents the number of active clinical studies by Medical Area during 2022.



Clinical trials and observational studies

The total income from clinical trials and observational studies was 2,089,395 €.

Funds from clinical trials and observational studies

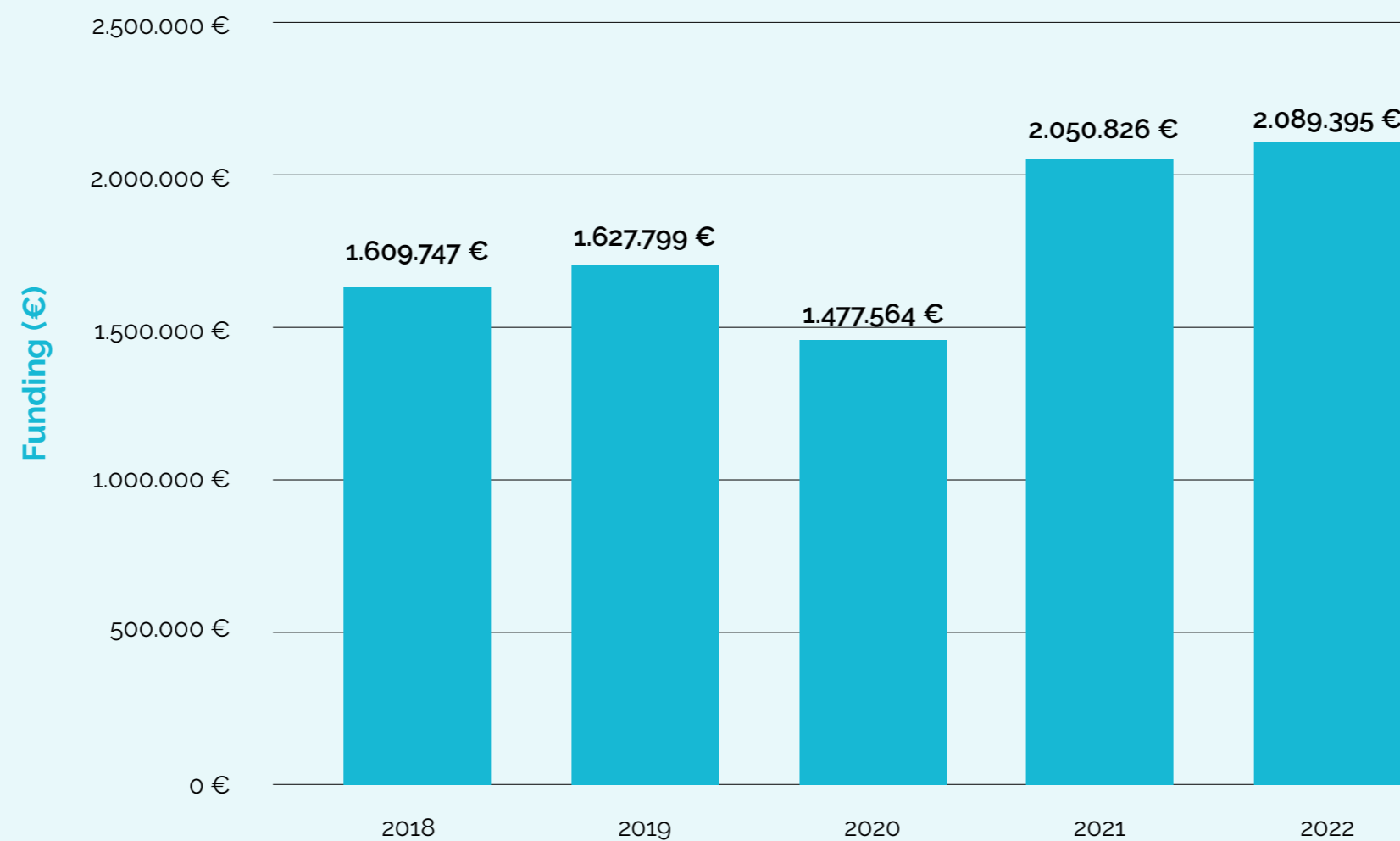


Figure 21. Historical data on funds obtained from clinical trials and observational studies.



Clinical practice guidelines 2022

The clinical practice guidelines published during 2022 by researchers affiliated to the IRBLleida have been 12.

Type of document	Title	Researcher	Research Group	Impact	Additional Info
Cancer					
Article	Recommendations of the Spanish Society of Thoracic Surgery for the management of malignant pleural effusion	José Manuel Porcel	GREBIC	International	10.1016/j.cireng.2022.06.009
Article	Consensus on prevention and treatment of cancer-associated thrombosis (CAT) in controversial clinical situations with low levels of evidence	Rodrigo Cáceres, Alberto	GREBIC	International	10.1016/j.ejim.2022.02.020
Clinical Guide	Prevención secundaria del cancer de cuello de útero, 2022. Conducta clínica ante resultados anormales de las pruebas de cribado	Matias-Guiu Guia, Xavier	Oncological pathology	National	ISBN 978-84-09-35567-9
Chronic diseases, surgery and health care					
Article	Chronic pancreatitis for the clinician. Part 1: Etiology and diagnosis. Interdisciplinary position paper of the Societat Catalana de Digestologia and the Societat Catalana de Pàncrees.	Olsina Kissler, Jorge J.	Experimental surgery	International	10.1016/j.gastrohep.2021.05.017
Article	Chronic pancreatitis for the clinician. Part 2: Treatment and follow-up. Interdisciplinary Position Paper of the Societat Catalana de Digestologia and the Societat Catalana de Pàncrees.	Olsina Kissler, Jorge J.	Experimental surgery	International	10.1016/j.gastrohep.2021.05.016
Article	Documento internacional de consenso sobre apnea obstructiva del sueño.	Lecubé Torelló, Albert	GRIM	International	10.1016/j.arbres.2021.03.027
Article	Recommendations for the diagnosis and treatment of hypoglycaemia after bariatric surgery.	Lecubé Torelló, Albert	GRIM	International	10.1016/j.endien.2021.09.005
Clinical Guide	International Consensus Document on Obstructive Sleep Apnea.	Barbé Illa, Ferran	TRMM	International	10.1016/j.arbres.2021.03.017
Article	Consensus guidelines for the validation of qRT-PCR assays in clinical research by the CardioRNA consortium.	De Gonzalo Calvo, David	TRMM	International	10.1016/j.omtm.2021.12.007



Clinical practice guidelines 2022

Type of document	Title	Researcher	Research Group	Impact	Additional Info
Neurosciences					
Article	Disease modifying therapy switching in relapsing multiple sclerosis: A Delphi consensus of the demyelinating expert group of the Spanish society of neurology.	Brieva Ruiz, Luís	Neuroimmunology	International	10.1016/j.msard.2022.103805
Article	Consensus statement on the use of alemtuzumab in daily clinical practice in Spain.	Brieva Ruiz, Luís	Neuroimmunology	International	10.1016/j.nrleng.2019.11.001
Clinical Guide	Diagnòstic i tractament de l'Esclerosi Múltiple - Protocol de tractament - Guies mèdiques de la societat catalana de neurologia	Brieva Ruiz, Luís	Neuroimmunology	Regional	https://www.scneurologia.cat/wp-content/uploads/2021/03/Guia-Esclerosi-Multiple-Societat-Catalana-de-Neurologia-Societat-Catalana-de-Neurologia-2021.pdf

Table 15. Clinical practice guidelines published in 2022.



Theses

Through the 2022 the IRBLLeida researchers have defended 20 doctoral theses

Doctoral theses

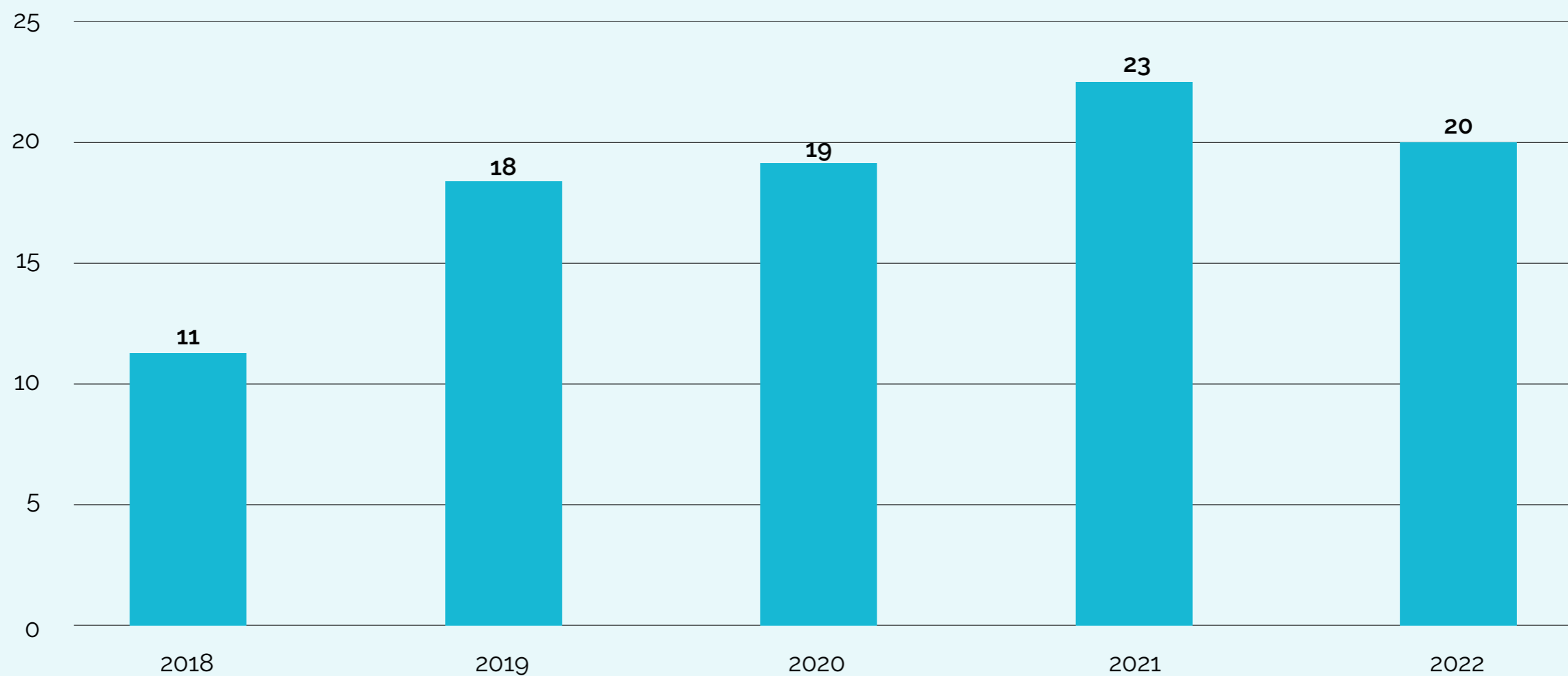


Figure 22. Historical data on doctoral theses defended by PhD students supervised by researchers of the IRBLLeida.



Theses directed by IRBLleida researchers in 2022

During 2022, 20 PhD students supervised by IRBLleida researchers have defended their doctoral theses.

PhD Student	Thesis	Director/s	Group
Cancer			
Marc Tarrés Escalona	Analysis of ATP-Dependent Association of the Smc5/6 Complex with Chromatin.	Jordi Torres	Cell cycle
Marta Guasch Vallés	From circulating tumour cells to metastases: The role of Cyclin D1 and characterization of new biomarkers.	Eloi Garí & Neus Pedraza	Cell cycle
Estefanía Anguita Espinosa	The Small GTPase RHOA in cancer.	Diego Arango & Àgueda Martínez	Molecular oncology
Cristina Megino Luque	Estudio del papel de ARID1A en el desarrollo del cáncer de endometrio y el microambiente tumoral.	Núria Eritja & Xavier Matias-Guiu	Oncological pathology
Raul Navaridas Fernández de Bobadilla	Aplicación de los Péptidos de Penetración Celular y de la herramienta de edición génica CRISPR/Cas9 en la modelización in vivo de carcinomas uterinos.	Xavier Dolcet & Xavier Matias-Guiu	Oncological pathology
Chronic diseases, surgery and health care			
Filip Bert Marie Paul Bellon	The impact of nursing interventions and hospitalization on patients' sleep quality.	Montserrat Gea & Esther Rubinat	Research group of health care (GReCS)
Judith Garcia Exposito	La flebitis secundaria a catéter venoso periférico: manejo y tratamiento basados en la evidencia.	Judith Roca	Research group of health care (GReCS)
Rosa Maria Giralt Palou	Anàlisi de les actituds estigmatitzants en els estudiants universitaris d'infermeria envers les persones amb problemes de salut mental.	Joan Blanco	Research group of health care (GReCS)
Jessica Miranda Iglesias	La hidratació i la ingesta de líquids en persones grans institucionalitzades: anàlisi de la situació i de les recomanacions de consum	M ^a Teresa Botigué & Olga Masot	Research group of health care (GReCS)
Elena Paraiso Pueyo	Evaluación del impacto del programa Escuela de madres y padres sobre el bienestar psicosocial a partir de las vivencias de los progenitores de recién nacidos prematuros ingresados en una unidad de cuidados intensivos neonatales.	Anna Lavedán	Research group of health care (GReCS)
Marta Sánchez Pérez	¿Cómo identificar de forma precisa el impacto negativo del exceso de masa grasa sobre la salud?	Enric Sanchez & Albert Lecube	Research Group in Immunology and Metabolims (GRIM)



Theses directed by IRBLleida researchers in 2022

PhD Student	Thesis	Director/s	Group
Anna Pons Rodríguez	Detecció precoç personalitzada del càncer de mama i utilitat de les eines d'ajuda a les decisions.	Montserrat Rué	Systems biology and statistical methods for biomedical research
Neurosciences			
Ikram Benabdelhak Abbou	Evolución del grado de conocimiento de La enfermedad en sujetos que han sufrido un ictus en la población de Lleida.	Francesc Purroy	Clinical neurosciences
Farida Dakterzada Sedaghat	Plasma and Cerebrospinal Fluid Lipidomic Signature of Alzheimer's Disease Diagnosis and Progression.	Gerard Piñol & Reinald Pamplona	Clinical neurosciences and Metabolic physiopathology
Lorena Morales García	Development and phenotype of Otp-expressing cells of the amygdala using an Otp-specific reporter transgenic mouse.	Ester Desfilis & Loreta Medina	Evolutionary developmental neurobiology
Emiliano Ariel Videla Rodríguez	A Bayesian network approach to poultry science: discovering connections between genetic features and stress in chickens.	Loreta Medina	Evolutionary developmental neurobiology
Sara Salvany Montserrat	Organització molecular dels aferents sinàptics de tipus C i la seva implicació en la patologia degenerativa de la neurona motora.	Anna Casanovas & Josep Esquerda	Experimental neuromuscular pathology
Nutrition, metabolism and cellular stress			
Marta Medina Carbonero	L'Atàxia de Friedreich: Assaig de fàrmacs en cardiomiòcits deficients de frataxina i caracterització del nou model murí FXN151F	Joaquim Ros & Jordi Tamarit	Biochemistry of oxidative stress
Anna Fernandez Bernal	Membranes associades a mitocondris i metabolisme lipídic en proteinopaties de TDP-43.	Manel Portero	Metabolic physiopathology
Chiara Rossi	Bridging the gaps between cell stress, mitochondrial dysfunction and lipid metabolism in ALS cellular pathophysiology.	Manel Portero	Metabolic physiopathology

Table 16. List of doctoral theses defended during 2022 directed by IRBLleida researchers.



Research networks and platforms

Reference	Acronym	Funder/Entity	Researcher Member	Research Group
Cancer				
RED2018-102372-T	INESGEN	MICIUN (Research Networks)	J. Torres	Cell cycle
CB16/12/00231	CIBERONC	ISCIII (CIBER)	X. Matias-Guiu	Oncological pathology
Chronic diseases, surgery and health care				
-	INCOSACT	International Collaboration of Sleep Apnea Cardiovascular Trialists	M. Sanchez	Precision medicine in chronic diseases group
CB07/08/0024	CIBERDEM	ISCIII (CIBER)	A. Lecube	Research group in immunology and metabolism (GRIM)
CB15/00071	CIBERDEM	ISCIII (CIBER)	E. Rubinat, M. Granados	Research group of health care (GReCS)
CB16/10/00468	CIBERFES	ISCIII (CIBER)	J. Blanco, M. Gea	Research group of health care (GReCS)
CB07/06/2008	CIBERES	ISCIII (CIBER)	F. Barbé, M. Sanchez, G.Torres, L.Pinilla, A. Zapater, I.Benitez	Translational research in respiratory medicine group
COST CA21153	AtheroNET	European Cooperation in Science & Technology (COST)	D. De Gonzalo	Translational research in respiratory medicine group
COST CA17129	EU-CardioRNA	European Cooperation in Science & Technology (COST)	D. De Gonzalo	Translational research in respiratory medicine group
812699	IMPROVE-PD	European Commission - MSCA - ITN - 2018	J.M. Valdivielso	Vascular and renal translational research group
COST CA18216	VascAgeNet	European Cooperation in Science & Technology (COST)	J.M. Valdivielso	Vascular and renal translational research group
RD16/0009/0011	REDINREN	ISCIII (RETICS)	J.M. Valdivielso	Vascular and renal translational research group



Research networks and platforms

Reference	Acronym	Funder/Entity	Researcher Member	Research Group
Epidemiology, infectious diseases and public health				
COST CA19137	PARQ COST	European Cooperation in Science & Technology (COST)	O. Yuguero	ERLab, research in emergency medicine
-	Laboratory medicine credit points, working group	European federation of clinical chemistry and laboratory medicine	M. Ibarz	Indicators and specifications of the quality in the clinical laboratory
-	Preamalytical phase, working group	European federation of clinical chemistry and laboratory medicine	M. Ibarz	Indicators and specifications of the quality in the clinical laboratory
-	APORED	Various organizations	J. Ribas	Pharmacoepidemiology and pharmacodynamics
Neurosciences				
CB/07/09/0037	CIBERSAM	ISCI (CIBER)	S. Miret / X. Gallart	Biological foundations of mental disorders / +Pec proteomics
RD21/0006/0023	RICORS-ICTUS	ISCI (RETICS)	F. Purroy	Clinical Neurosciences
812777	CHICKENSTRESS	European Commission - MSCA - ITN - 2019	L. Medina	Evolutionary developmental neurobiology
-	TECSAM	AGAUR	X. Gallart	+Pec proteomics
-	XARSMART	IDIBELL	A. Serra, X. Gallart	+Pec proteomics
Nutrition, metabolism and cellular stress				
COST CA19105	EpiLipidNET	European Cooperation in Science & Technology (COST)	R. Pamplona	Metabolic physiopathology
Transversal platforms				
PT20/00021	Biobanks and Bio models Platform	ISCI (Platforms)	X. Matias.-Guiu, D. Arango, A. Martínez	Biobank IRBLleida

Table 17. Research networks and research platforms with IRBLleida researchers.

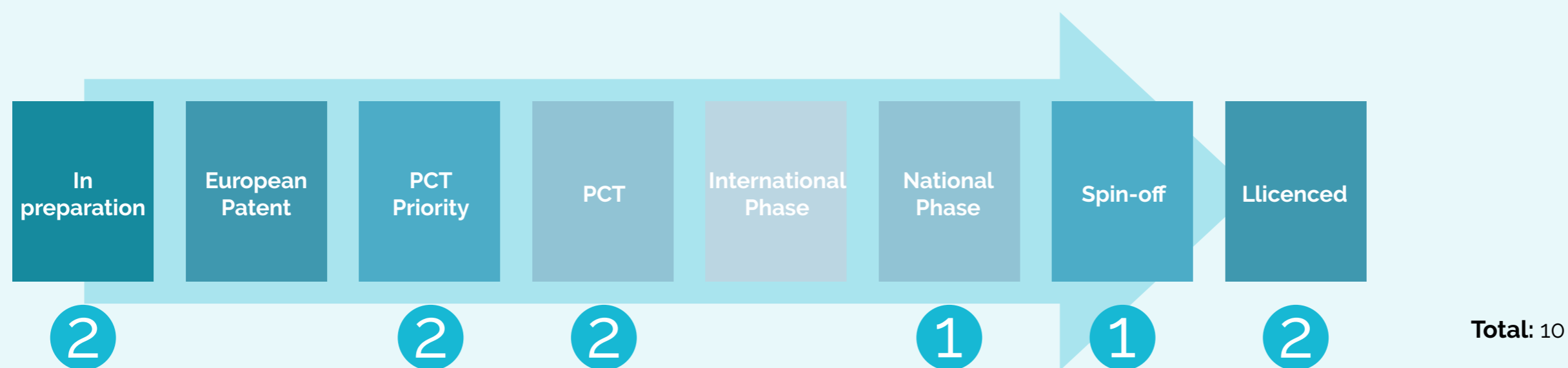


Knowledge transfer and innovation



Innovation unit 2022

State of patents IRBLleida 2022



Milestones

- Preparation and development of the **Innovation plan 2023-2025**.
- **Sello de calidad ITEMAS** that gives support to high impact projects in order to achieve effective transfer to the National Health System, funded by ISCIII.
- **Ajut Llabor** for innovation projects in phases TRL 1 and 2 for the valorization of knowledge with potential incorporation into the productive sector, funded by AGAUR.
- Adherence of the "+Pec Proteomics" research group to the **TECSAM and XarSmart networks**, programs of Valorization and Transfer of research results to the market on mental health and personalized medicine, respectively.



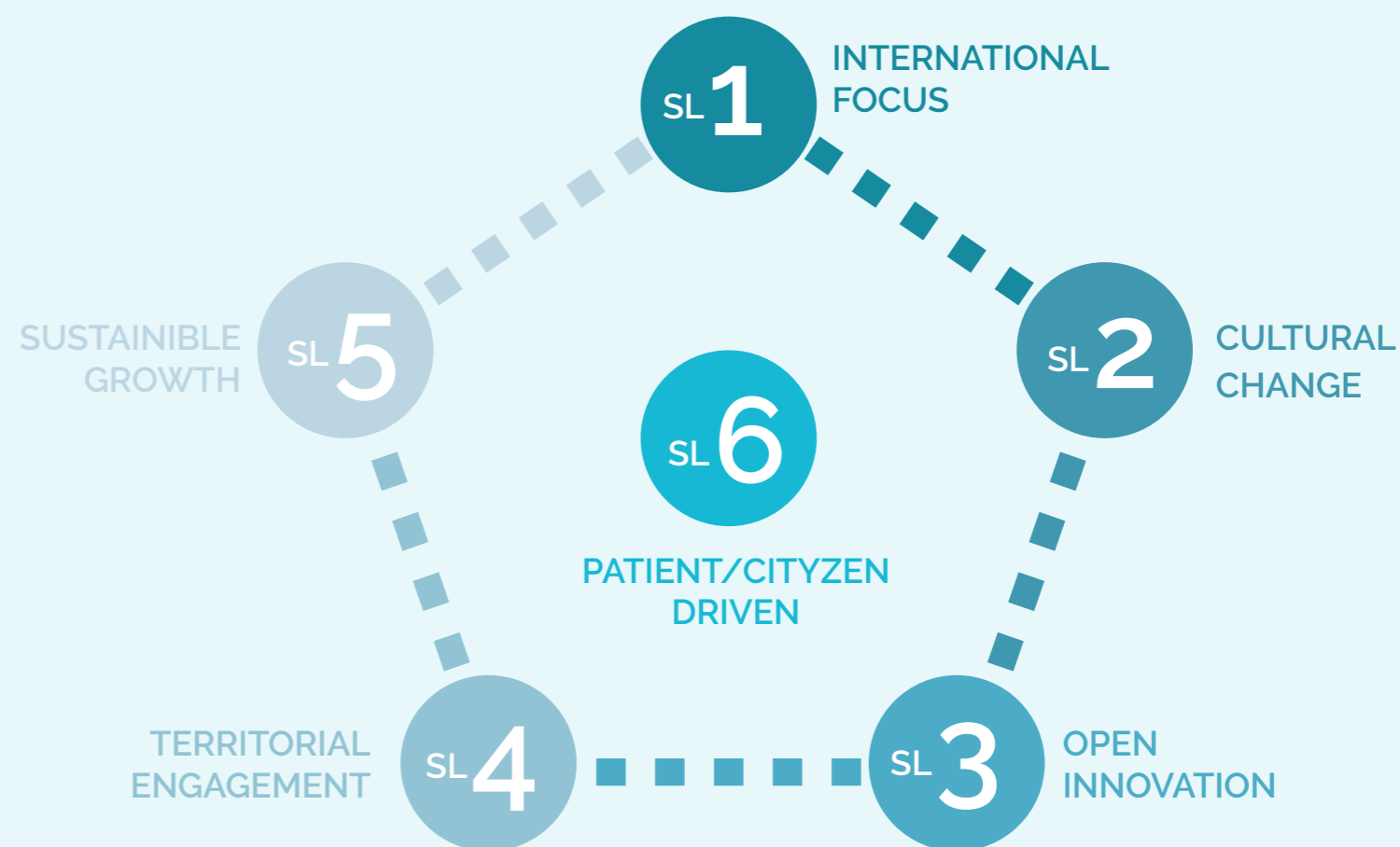
Innovation unit: 2023-2025 Plan

Within the IRBLleida Strategic Plan, innovation is identified as one of the strategic pillars of the Institute. This identified necessity led to the preparation and development of the Innovation Plan 2023-2025. An outline of the model that will facilitate the acceleration of innovation at the institute can be found below..

Objectives

- ↔ Coordinate projects and transfer to the market.
- 🏆 Positioning of Innovation in Lleida.
- 🌐 Networks with Innovation agents.
- 💡 Improve the innovation value chain of projects.
- 📈 Increase the budget of innovation projects.
- 📄 Improve KPIs, patents, intellectual property, collaboration...
- 🧠 Resources and advice in innovation and business creation.
- 👤 Contribute to the economic sustainability of the Institute.

Strategic lines





Research activity by areas and groups

- Area 1. Cancer
- Area 2. Chronic diseases, surgery and health care
- Area 3. Epidemiology, infectious diseases and public health
- Area 4. Neurosciences
- Area 5. Nutrition and cell metabolism
- Area 6. Other research areas



Area 1. Cancer

Area coordinator: Dr. Eloi Garí Marsol

The cancer area includes research staff trained in different specialties of Medicine and Biology. The common goal is oncology research integrating basic (model organisms), translational, and clinical research (trials).

Groups

1.1 Cell cycle

1.2 Research group of cancer biomarkers (GReBiC)

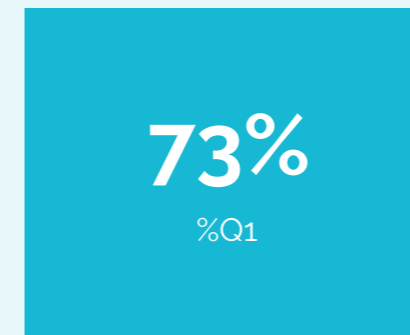
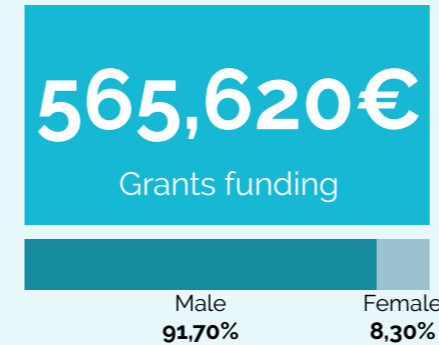
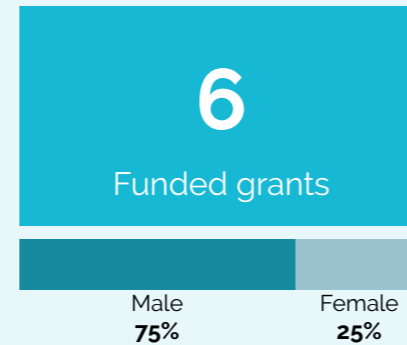
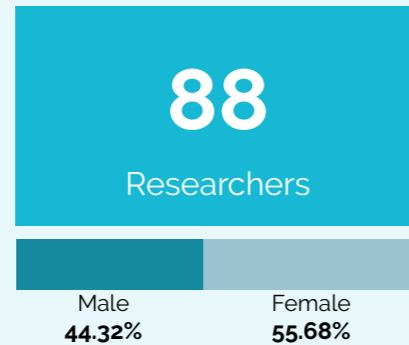
1.3 *Drosophila* models of disease

1.4 Molecular oncology

1.5 Oncological pathology

1.6 Calcium cellular signalling

1.7 Oncogenic signalling and development





1.1. Cell cycle

The cell cycle group studies the molecular mechanisms that regulate the division of eukaryotic cells, in particular:

(A) the mechanisms dependent on SUMO and SMC complexes that ensure genome stability during the cycle and in response to DNA damage.

(B) the mechanisms involved in the control of cell cycle entry and its relation to polarity, cell adhesion and migration.

Mouse embryonic fibroblasts, cell lines and primary cultures of human keratinocytes are used as models of cell adhesion and polarity whereas budding yeast and human cell lines are employed for chromosome replication, cohesion and segregation studies.

The overall goal of this work is to contribute to a better understanding of the processes that are altered during the loss of genome integrity and in diseases such as cancer.

Publications

Lopez IC, Pijuan J, Navaridas R, Santacana M, Gatius S, Velasco A, Castellà G, Panosa A, Cabiscol E, Pinyol M, Coll L, Bonifaci N, Peña LP, Vidal A, Villanueva A, Gari E, Llobet D, Fajas L, Matias X, Yeramian A. Oxidative stress-induced FAK activation contributes to uterine serous carcinoma aggressiveness. *Mol Oncol.* 2023. 17. (1):p. 98-118. IF:7,449. Q1.

Rocamora V, Crespi L, Ferran M, Llamas M, del Alcazar E, Carrascosa JM, Beltran E, Urruticoechea A, Estebanz JLL, Vidal D, Riera J, Rodriguez L, Armesto S, Fernandez JM, Aparicio G, Perez S, Porcar S, Montesinos E, Gallardo F. Guselkumab effectiveness and survival in patients with psoriasis and psoriatic arthritis: Multicenter analysis in daily clinical practice by the Spanish Psoriasis Group. *Dermatol. Ther.* 2022. 35. (11):IF:3,858. Q2.

Cemeli T, Guasch M, Ribes M, Ibars E, Navaridas R, Dolcet X, Pedraza N, Colomina N, Torres-Rosell J, Ferrezuelo F, Herreros J, Gari E. Antitumor Effects of Ral-GTPases Downregulation in Glioblastoma. *Int J Mol Sci.* 2022. 23. (15):8199. IF:6,208. Q1.

Belli G, Colomina N, Castells L, Lorite NP. Post-Translational Modifications of PCNA: Guiding for the Best DNA Damage Tolerance Choice. *J. Fungi.* 2022. 8. (6):621. IF:5,724. Q1.

Odriozola I, Belli G, Puigpinos J, Herrero E, Martin O. Screening the Antioxidant Activity of Thermal or Non-Thermally Treated Fruit Juices by In Vitro and In Vivo Assays. *Beverages.* 2022. 8. (2):36.

Lascorz J, Codina J, Reverter D, Torres-Rosell J. SUMO-SIM interactions: From structure to biological functions. *Semin Cell Dev Biol.* 2022. 132. p. 193-202. IF:7,499. Q1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Torres Rosell, Jordi	Ministerio de ciencia e innovación	Mecanismos moleculares de transacciones dependientes del complejo Smc5/6 sobre cromosomas eucarióticos	229.900
Belli Martinez, Gemma	Institut Recerca Biomèdica de Lleida IRBLleida	Designing functional food containing active ingredients with potential anti-obesity properties	21.800
Gari Marsol, Eloi i Gatius Caldero, Sonia	Diputació de Lleida	Clinical and functional identification of metastatic colonization biomarkers	50.000

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Gari Marsol, Eloi	Ministerio de ciencia e innovación	Characterization of non-canonical functions of the Cyclin D1-Cdk4 complex involved in cell signaling	145.200
Torres Rosell, Jordi	Ministerio de ciencia e innovación	Mecanismos moleculares implicados en coordinar la replicación y la disyunción de los cromosomas	211.750

RESEARCH TEAM

Group leaders

Eloi Gari Marsol
Jordi Torres Rosell

Principal investigators

Gemma Belli Martinez
Neus Colomina Gabarrella
Francisco Ferrezuelo Muñoz

Researchers

Rafael Aguayo Ortiz
Jose Manuel Casanova Seuma
José Manuel Fernandez Armenteros
Neus Pedraza Gonzalez

PhD students

Joan Codina Fabra
Roger Ferran Solé Soler
Marta Guasch Vallés
Neus Perez Lorite
Marina Ribes Santolaria
Marc Tarres Escalona

Research technician

Sonia Rius Balcells

Laboratories

Laboratory 3rd floor. Lab b3.8
973 702 411 (Despatx E Gari)
973 702 438 (Despatx J Torres)

Email

eloi.gari@udl.cat
jordi.torres@udl.cat



1.2. Research group of cancer biomarkers (GReBiC)

Our research group is translational, multidisciplinary and young. It is composed of medical doctors specialized in Medical Oncology, Internal Medicine, Radiotherapy Oncology and Clinical Analysis; and basic researchers trained in Biosciences (Biology, Biochemistry, Biomedicine and Biotechnology) with a high degree of cohesion. The work of our group focuses on three main lines of research related to cancer:

- Digestive tumors: colorectal cancer, gastric cancer and hepatocellular carcinoma
- Breast cancer
- Pleural effusion

All three lines address high-prevalence diseases in our society that are associated with a high mortality rate. We work with basic and translational research approaches to respond to the great challenges posed by these pathologies, which are: providing markers for diagnosis, stratifying the risk of recurrence or metastasis and predicting the good therapeutic response to different treatments. In addition, new highly innovative therapies based on gene editing are being developed in our group.

Publications

Luis Recuero Díaz J, Almánzar SF, Munoz CG, Sierra JL, Porras ML, Medina DM, Vicuña MN, Moreno LS, Cantalejo MG, Porcel JM. Recommendations of the Spanish Society of Thoracic Surgery for the management of malignant pleural effusion. *Cir Esp (Engl Ed)*. 2022. 100. (11):p. 673-683.

Barcelo C, Siso P, de la Rosa I, Megino C, Navaridas R, Maiques O, Urdanibia I, Eritja N, Soria X, Potrony M, Calbet N, Puig S, Matias X, Marti RM, Macia A. M-CSF as a therapeutic target in BRAF(V600E) melanoma resistant to BRAF inhibitors. *Br. J. Cancer*. 2022. 127. (6):p. 1142-1152. IF:9,075. Q1.

Porcel JM. Nonmalignant Pleural Effusions. *Semin. Respir. Crit. Care Med*. 2022. 43. (4):p. 570-582. IF:3,921. Q2.

Porcel JM. Pleural mesothelioma. *Med. Clin*. 2022. 159. (5):p. 240-247. IF:3,200. Q2.

Hernández M, Nóvoa Y, Faner R, Palou E, Esquerda A, Castelblanco E, Wägner AM, Mauricio D. Genetics: Is LADA just late onset type 1 diabetes?. *Front. Endocrinol*. 2022. 13. p. 916698-916698. IF:6,055. Q1.

Megino C, Siso P, Mota N, Navaridas R, de la Rosa I, Urdanibia I, Alberti M, Santacana M, Pinyol M, Bonifaci N, Macia A, Llobet D, Gatus S, Matias X, Eritja N. ARID1A-deficient cells require HDAC6 for progression of endometrial carcinoma. *Mol Oncol*. 2022. 16. (11):p. 2235-2259. IF:7,449. Q1.

Martin M, Zielinski C, Ruiz M, Carrasco E, Ciruelos EM, Muñoz M, Bermejo B, Margeli M, Csöszi T, Antón A, Turner N, Casas MI, Morales S, Alba E, Calvo L, de la Haba J, Ramos M, Murillo L, Santaballa A, Alonso JL, Sánchez P, Corsaro M, Huang X, Thallinger C, Kahan Z, Gil M. Overall survival with palbociclib plus endocrine therapy versus capecitabine in postmenopausal patients with hormone receptor-positive, HER2-negative metastatic breast cancer in the PEARL study. *Eur. J. Cancer*. 2022. 168. p. 12-24. IF:10,002. Q1.

Jimenez P, Gallardo E, Arijia FA, Blanco JM, Callejo A, Lavin DC, Rivas MC, Mosquera J, Rodrigo A, Morillas RS, Gonzalez MV, Munoz A, Carmona A. Consensus on prevention and treatment of cancer-associated thrombosis (CAT) in controversial clinical situations with low levels of evidence. *Eur. J. Intern. Med*. 2022. 100. p. 33-45. IF:7,749. Q1.

Mulet M, Osuna R, Zamora C, Porcel JM, Nieto JC, Perea L, Pajares V, Muñoz AM, Calvo N, Sorolla MA, Vidal S. Influence of Malignant Pleural Fluid from Lung Adenocarcinoma Patients on Neutrophil Response. *Cancers*. 2022. 14. (10):2529. IF:6,575. Q1.

Ruiz A, Saez E, Martinez M, Bernet A, Porcel JM. A Simple Scoring System to Differentiate Bacterial from Viral Infections in Acute Exacerbations of COPD Requiring Hospitalization. *Int. J. Chronic Obstr. Pulm. Dis*. 2022. 17. p. 773-779. IF:2,893. Q3.

Belokopytova A, Ruiz A, Vilardell F, Porcel JM. Cardiac tamponade as the initial presentation of a T-cell lymphoblastic lymphoma. *Galic Clin*. 2022. 83. (2):p. 42-44.

Bielsa S, Guitart A, Esquerda A, Fernandez R, Baranguan MT, Ibarra A, Porcel JM. Some pleural effusions labeled as idiopathic could be produced by the inhalation of silica. *Pleura Peritoneum*. 2022. 7. (1):p. 27-33.

Marques M, Sorolla MA, Urdanibia I, Parisi E, Hidalgo I, Morales S, Salud A, Sorolla A. Are Transcription Factors Plausible Oncotargets for Triple Negative Breast Cancers?. *Cancers*. 2022. 14. (5):1101. IF:6,575. Q1.

Ocaña A, Chacon JI, Calvo L, Anton A, Mansutti M, Albanell J, Martinez MT, Lahuerta A, Bisagni G, Bermejo B, Semiglazov V, Thill M, Chan A, Morales S, Herranz J, Tusquets I, Chiesa M, Caballero R, Valagussa P, Bianchini G, Alba E, Gianni L. Derived Neutrophil-to-Lymphocyte Ratio Predicts Pathological Complete Response to Neoadjuvant Chemotherapy in Breast Cancer. *Front. Oncol*. 2022. 11. p. 827625-827625. IF:5,738. Q2.

Sorolla A, Parisi E, Sorolla MA, Marqués M, Porcel JM. Applications of CRISPR technology to lung cancer research. *Eur Respir J*. 2022 Jan 20;59(1):2102610. IF: 33,801. D1.

RESEARCH TEAM

Group leaders

Jose Manuel Porcel Pérez
Antonia Salud Salvia
Maria Alba Sorolla Bardaji

Principal investigators

Silvia Bielsa Martin
Robert Montal Roura
Serafin Morales Murillo
Anabel Sorolla Bardaji

Researchers

Aureli Esquerda Serrano
Moises Jose Mira Flores
Eleonor Paola Murata Yonamine
Marina Asuncion Pardina Solano
Eva Parisi Capdevila
Alberto Rodrigo Cáceres
Magdalena Torres Pifarre
Izaskun Urdanibia Ascanio

PhD students

Maria del Carmen Civit Oro
Ivan Hidalgo Muñoz
Marta Marques Suncion
Ona Pallisé Subirats
Mariona Pont Gòdia
Joel Veas Rodriguez

Research technicians

Marta Garcia Cortes
David Martinez Ortin
Arnau Oronich Fusté
Joel Salla Fortuny
Ruben Tejero Narbona



1.2. Research group of cancer biomarkers (GReBiC)

Porcel JM, Liesa L, Bagüeste G, Bielsa S. Analysis of Spanish doctoral theses on pleural diseases. *Rev Clin Esp (Barc)*. 2022 Jan;222(1):57-58.

Kudo M, Montal R, Finn RS, Castet F, Ueshima K, Nishida N, Haber PK, Hu Y, Chiba Y, Schwartz M, Meyer T, Lencioni R, Llovet JM. Objective Response Predicts Survival in Advanced Hepatocellular Carcinoma Treated with Systemic Therapies. *Clin Cancer Res*. 2022 Aug 15;28(16):3443-3451. IF: 13,801. D1.

Élez E, Gómez-España MA, Grávalos C, García-Alfonso P, Ortiz-Morales MJ, Losa F, Díaz IA, Graña B, Toledano-Fonseca M, Valladares-Ayerbes M, Polo E, Salgado M, Martínez de Castro E, Safont MJ, Salud A, Ruiz-Casado A, Tabernero J, Riesco MDC, Rodríguez-Ariza A, Aranda E. Effect of aflibercept plus FOLFIRI and potential efficacy biomarkers in patients with metastatic colorectal cancer: the POLAF trial. *Br J Cancer*. 2022 Apr;126(6):874-880. IF: 9,082. Q1.

Tapia JC, Gavira J, López A, Llobera L, Pallise O, Marsal I, Cochs A, Ponce OJ, Riudavets M, Gich I, Barnadas A, Majem M. Ninety-day mortality and clinical outcomes of patients with solid tumours and COVID-19 infection during the first pandemic outbreak in Catalonia, Spain: A multicentre retrospective study. *Int J Cancer*. 2022 Apr 15;150(8):1310-1317. IF: 7,316. Q1.

Porcel JM, Bagüeste G, Liesa L, Bielsa S. Research productivity during residency training in Spain: Comparison among medical specialties lasting 5 years. *Rev Clin Esp (Barc)* 2022 Apr;222(4):212-217.

Porcel JM, Sorolla A, Parisi E, Bielsa S, Salud A, Sorolla MA. Cell-Free DNA Concentration and Pattern Fragmentation in Pleural Fluid and Plasma to Detect Malignant Effusions. *Ann Am Thorac Soc*. 2022 May;19(5):854-856 IF: 8,785. Q1.

Benavides M, Gómez-España A, García-Alfonso P, González CG, Viéitez JM, Rivera F, Safont MJ, Abad A, Sastre J, Valladares-Ayerbes M, Carrato A, González-Flores E, Robles L, Salud A, Alonso-Orduña V, Montagut C, Asensio E, Díaz-Rubio E, Aranda E; Spanish Cooperative Group for the Treatment of Digestive Tumours (TTD). Upfront primary tumour resection and survival in synchronous metastatic colorectal cancer according to primary tumour location and RAS status: Pooled analysis of the Spanish Cooperative Group for the Treatment of Digestive Tumours (TTD). *Eur J Surg Oncol*. 2022 May;48(5):1123-1132. IF:4,037. Q1.

Valladares-Ayerbes M, Garcia-Alfonso P, Muñoz Luengo J, Pimentel Caceres PP, Castillo Trujillo OA, Vidal-Tocino R, Llanos M, Llorente Ayala B, Limon Miron ML, Salud A, Cirera Noguerras L, Garcia-Carbonero R, Safont MJ, Falco Ferrer E, Aparicio J, Vicente Conesa MA, Guillén-Ponce C, Garcia-Tejjido P, Medina Magan MB, Busquier I, Salgado M, Lloansi Vila A; PERSEIDA Investigators. Evolution of RAS Mutations in Cell-Free DNA of Patients with Tissue RAS Wild-Type Metastatic Colorectal Cancer Receiving First-Line Treatment: The PERSEIDA Study. *Cancers (Basel)*. 2022 Dec 9;14(24):6075. IF: 6,575. Q1.

Payne H, Robinson A, Rappe B, Hillman S, De Giorgi U, Joniau S, Bordonaro R, Mallick S, Dourthe LM, Flores MM, Gumà J, Baron B, Duran A, Pranzo A, Serikoff A, Mott D, Herdman M, Pavesi M, De Santis M. A European, prospective, observational study of enzalutamide in patients with metastatic castration-resistant prostate cancer: PREMISE. *Int J Cancer*. 2022 Mar 1;150(5):837-846. IF: 7,316. Q1.

Laboratories

Laboratories ground floor. Lab **b0.1** and **b0.5**

973 702 226

973 003 747

Email

jmporcel.lleida.ics@gencat.cat

masalud.lleida.ics@gencat.cat

msorolla@irblleida.cat

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Montal Roura, Robert	Sociedad Española de Oncología Medica SEOM	Biomarcadores en biopsia líquida de colangiocarcinoma avanzado para una inmuno-oncología de precisión	30.000
De Gonzalo Calvo, David i Porcel Pérez, José Manuel	Diputació de Lleida	Construcción de un algoritmo diagnóstico y pronóstico del derrame pleural maligno secundario a cáncer de pulmón mediante firmas de RNA no codificante y Machine Learning	50.000



1.2. Research group of cancer biomarkers (GReBiC)

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Montal Roura, Robert	Instituto de Salud Carlos III (ISCIII)	Biomarcadores de Respuesta a Inmunoterapia mediante la Inmunofenotipificación Exhaustiva del Adenocarcinoma Gástrico	98.010
Sorolla Bardaji, Anabel	Instituto de Salud Carlos III (ISCIII)	Development of precision therapies for triple negative breast cancers based on CRISPR/CASg ribonucleoproteins	117.370
Montal Roura, Robert	Fundacion Merck Salud	Inmuno-oncología de precisión para el Adenocarcinoma Gástrico.	30.000
Montal Roura, Robert	Grupo Tratamiento de los Tumores Digestivos - Grupo TTD	Editing of TERT promoter mutations with CRISPR/Casg technology for the treatment of Hepatocellular carcinoma	40.000
Montal Roura, Robert	Sociedad Española de Oncología Medica (SEOM)	Ayuda SEOM - Juan Rodés 2021	40.000
Sorolla Bardaji, Anabel i Vilardell Vilellas	Diputació de Lleida	Development of precision therapies for triple negative breast cancer based on CRISPR/Cas12a ribonucleoproteins	50.000
Morales Murillo, Serafin	ADAMED LABORATORIOS	Selección de tratamiento con quimioterapia neoadyuvante en pacientes con cáncer de mama en estadioc precoz y con receptores hormonales positivos mediante la determinación de la plataforma ONCOTYPE, CF DNA en sangre periférica y cambios del marcador KI67 en tejido tumoral	9.000
Salud Salvia, Antonia	Fundacion Merck Salud	Predicción de micrometástasis en pacientes con cáncer de colon localizado de alto riesgo	30.000
Bielsa Martin, Silvia	Instituto de Salud Carlos III (ISCIII)	Ensayo clínico randomizado: lavados con suero salino vs tratamiento estándar en el derrame pleural paraneumónico complicado o empiema	43.560
Porcel Pérez, Jose Manuel	Instituto de Salud Carlos III (ISCIII)	Biopsia líquida utilizando el sobrenadante del líquido pleural y el plasma para el estudio del perfil mutacional en el cáncer de pulmón	96.800



1.3. *Drosophila* models of disease

Our group has developed a metastatic model of colorectal cancer in *Drosophila*, with the aim of unravel the basic mechanisms that allow the spread of tumour cells outside the primary tumor and the colonization of distant places. We have two main lines of work:

1. Perform genetic screenings to identify key players in the initial steps of metastasis and characterize their role in the process.
2. Introduce our models of colorectal cancer in *Drosophila* as a new step in the preclinical analysis of therapeutic compounds.

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Casali Taberner, Andreu	Ministerio de Ciencia e Innovación	Modelling metastasis in adult <i>Drosophila</i> : Identification of the mechanisms underlying successful cell migration	133.100

RESEARCH TEAM

Group leader

Andreu Casali Taberner

PhD student

Patricia Montes Labrador

Research technician

Alba Vicario Andrade

Laboratories

Laboratory ground floor. Lab b0.5

973 702 221

Email

andreu.casali@udl.cat



1.4. Molecular oncology

The main interest of our laboratory is the study of molecular events underlying the oncogenic process, especially in colorectal, gastric and head-and-neck cancer. Gaining a deeper understanding of the molecular mechanisms responsible for the tumorigenic process is essential to improve the diagnosis and treatment of these patients. We are also interested in the identification of novel biomarkers capable of predicting therapy response, thus contributing to treatment personalization for colorectal cancer patients. Finally, we explore novel therapeutic options for microvillus inclusion disease (MVID), a rare life-threatening intestinal disease.

Publications

Carton-García F, Brotons B, Anguita E, Dopeso H, Tarragona J, Nieto R, García-Vidal E, Macaya I, Zagyva Z, Dalmau M, Sanchez-Martin M, van Ijzendoorn SCD, Landolfi S, Hernandez J, Schwartz S Jr, Matias-Guiu X, Ramon y Cajal S,

Martinez-Barriocanal A, Arango D. Myosin Vb as a tumor suppressor gene in intestinal cancer. *Oncogene*. 2022. 41. (49):p. 5279-5288. IF:8,756. D1.

Luk IY, Jenkins LJ, Schoffer KL, Ng I, Tse JWT, Mouradov D, Kaczmarczyk S, Nightingale R, Burrows AD, Anderson RL, Arango D, Dopeso H, Croft L, Richardson MF, Sieber OM, Liao Y, Mooi JK, Vukelic N, Reehorst CM, Afshar-Sterle S, Whitehall VLJ, Fennell L, Abud HE, Tebbutt NC, Phillips WA, Williams DS, Shi W, Mielke LA, Ernst M, Dhillon AS, Clemons NJ, Mariadason JM. Epithelial de-differentiation triggered by co-ordinate epigenetic inactivation of the EHF and CDX1 transcription factors drives colorectal cancer progression. *Cell Death Differ*. 2022. 29. (11):p. 2288-2302. IF:12,067. D1.

Fourniols T, Maggio V, Rafael D, Colaco A, García E, Lopes A, Schwartz S, Martinez-Barriocanal A, Preat V, Arango D. Colorectal cancer inhibition by BET inhibitor JQ1 is MYC-independent and not improved by nanoencapsulation. *Eur. J. Pharm. Biopharm*. 2022. 171. p. 39-49. IF:5,589. Q1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Arango del Corro, Diego	Instituto de Salud Carlos III (ISCIII)	Nueva aproximación terapéutica para el cáncer colorectal	183.920

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Matias-Guiu Guia, Xavier i Martinez Barriocanal, Agueda	Diputació de Lleida	EPH Receptor Signaling in Endometrial Cancer	50.000
Arango del Corro, Diego	Instituto de Salud Carlos III (ISCIII)	Antioxidant treatment as a novel therapeutic option for microvillus inclusion disease. ARMED	174.966
Arango del Corro, Diego	Instituto de Salud Carlos III (ISCIII)	Targeting RHOA signaling in gastric cancer	236.857
Arango del Corro, Diego	Instituto de Salud Carlos III (ISCIII)	Development of CXCR4 targeting-nanosystem-imaging probes for molecular imaging of cancer cells and tumor microenvironment.	99.946

RESEARCH TEAM

Group leader

Diego Arango del Corro

Principal investigator

Agueda Martinez Barriocanal

PhD students

Bruno Brotons Morales

Nuria Vivancos Guiu

Research technician

Laia Bea Menchon

Laboratories

Biomedicine I 4th floor. Lab b4.8
973 702 201

Email

darango@irblleida.cat



1.5. Oncological pathology

The group studies the molecular alterations of endometrial and skin cancers, in correlation with clinical and pathological characteristics, using descriptive molecular pathology tools (immunohistochemistry, in situ hybridization, sequencing, epigenetics, gene gain and loss), as well as in vitro functional analysis in cell cultures (2D and 3D), and experimental animals. The objective is to transfer the results to clinical practice for the benefit of patients.

Publications

Lopez IC, Pijuan J, Navaridas R, Santacana M, Gatius S, Velasco A, Castellà G, Panosa A, Cabiscol E, Pinyol M, Coll L, Bonifaci N, Peña LP, Vidal A, Villanueva A, Gari E, Llobet D, Fajas L, Matias X, Yeramian A. Oxidative stress-induced FAK activation contributes to uterine serous carcinoma aggressiveness. *Mol Oncol.* 2023. 17. (1):p. 98-118. IF:7,449. Q1.

Tarragona J, Martínez C, Matias X, Hardisson D. Docencia de pregrado en Anatomía Patológica: Resultados de la encuesta sobre la docencia de la asignatura de Anatomía Patológica en los estudios de pregrado de las facultades de medicina españolas. *Rev Esp Patol.* 2023. 56. (1):p. 21-31.

Diaz S, Archilla I, Lahoz S, Rodrigo MT, Lopez S, Tarragona J, Landolfi S, Concha A, Machado I, Maurel J, Chic N, Castells A, Balaguer F, Camps J, Cuatrecasas M. Cytology Smears: An Enhanced Alternative Method for Colorectal Cancer pN Stage-A Multicentre Study. *Cancers.* 2022. 14. (24):IF:6,575. Q1.

Carton F, Brotons B, Anguita E, Dopeso H, Tarragona J, Nieto R, Garcia E, Macaya I, Zagyva Z, Dalmau M, Sanchez M, van SCD, Landolfi S, Hernandez J, Schwartz SJR, Matias X, Ramón YS, Martínez A, Arango D. Myosin Vb as a tumor suppressor gene in intestinal cancer. *Oncogene.* 2022. 41. (49):p. 5279-5288. IF:8,756. D1.

Alturo A, Alamon F, Sanmartin V, Vilardell F, Martí RM. [Translated article] Congenital and Acquired Epidermodysplasia Verruciformis: A Series of 7 Cases. *Actas Dermosifiliogr.* 2022. 114. (2):T179-T182.

Vrede SW, Kasius J, Bulten J, Teerenstra S, Huvila J, Colas E, Gil A, Boll D, Vos MC, van AM, Asberger J, Sweegers S, van WJ, van der Putten LJM, Amant F, Visser NCM, Snijders MPLM, Küsters HVN, Kruitwagen R, Matias X, Weinberger V, Reijnen C, Pijnenborg J. Relevance of Molecular Profiling in Patients With Low-Grade Endometrial Cancer. *JAMA Netw Open.* 2022. 5. (12):e2247372. IF:13,353. D1.

Palomero J, Panisello C, Lozano M, Tirtakusuma R, Díaz J, Grases D, Pasamar H, Arregui L, Dorca E, Guerra E, Vivancos A, de Andrea CE, Melero I, Ponce

J, Vidal A, Piulats JM, Matias X, Gros A. Biomarkers of tumor-reactive CD4(+) and CD8(+) TILs associate with improved prognosis in endometrial cancer. *J Immunother. Cancer.* 2022. 10. (12):e005443. IF:12,469. Q1.

Sonzini G, Granados S, Sanegre S, Diaz A, Diaz J, de Andrea C, Eritja N, Bao A, Costa N, Garcia D, Salguero C, Davidson B, Lopez R, Melero I, Navarro S, Ramon Y Cajal S, de Alava E, Matias X, Noguera R. Integrating digital pathology with transcriptomic and epigenomic tools for predicting metastatic uterine tumor aggressiveness. *Front Cell Dev Biol.* 2022. 10. p. 1052098-1052098. IF:6,081. Q1.

Marin JA, Garcia S, Matias X, Piulats JM. Facts and hopes in immunotherapy of endometrial cancer. *Clin Cancer Res.* 2022. 28. (22):p. 4849-4860. IF:13,801. D1.

Devis L, Vidal A, Plata L, Santacana M, García S, Bonifaci N, Noguera E, Ruiz N, Gil M, Dorca E, Llobet FJ, Coll L, Gassner K, Martinez M, Rodriguez R, Barahona M, Marti L, Viñals F, Ponce J, Sanz R, Piulats JM, Vivancos A, Matias X, Villanueva A, Llobet D. Generation and Integrated Analysis of Advanced Patient-Derived Orthoxenograft Models (PDOX) for the Rational Assessment of Targeted Therapies in Endometrial Cancer. *Adv. Sci.* 10. (1):e2204211.

Matas C, Soria X, Gonzalez M, Baradad M, Tuset N, Rius F, González M, Gatius S, Vilardell F, López R, María R. Abdominal tumors in patients with neurofibromatosis type I: Genotype-phenotype relationships. *Eur J Med Genet.* 2022. 65. (11):p. 104609-104609. IF:2,465. Q3.

Matias X, Selinger CI, Anderson L, Buza N, Ellenson LH, Fadare O, Ganesan R, Ip PPC, Palacios J, Parra C, Raspollini MR, Soslow RA, Werner HMJ, Lax SF, McCluggage WG. Data Set for the Reporting of Endometrial Cancer: Recommendations From the International Collaboration on Cancer Reporting (ICCR). *Int. J. Gynecol. Pathol.* 2022. 41. (Suppl 1):p. 90-118. IF:3,326. Q2.

Barcelo C, Siso P, de la Rosa I, Megino C, Navaridas R, Maiques O, Urdanibia I, Eritja N, Soria X, Potrony M, Calbet N, Puig S, Matias X, Martí RM, Macia A. M-CSF as a therapeutic target in BRAF(V600E) melanoma resistant to BRAF inhibitors. *Br. J. Cancer.* 2022. 127. (6):p. 1142-1152. IF:9,075. Q1.

Altes G, Vaquero M, Cuesta S, Anerillas C, Macia A, Espinet C, Ribera J, Bellusci S, Klein OD, Yeramian A, Dolcet X, Egea J, Encinas M. A dominant negative mutation uncovers cooperative control of caudal Wolffian duct development by Sprouty genes. *Cell. Mol. Life Sci.* 2022. 79. (10):p. 514-514. IF:9,207. Q1.

Egan D, Moran B, Wilkinson M, Pinyol M, Guerra E, Gatius S, Matias X, Kolch W, le CW, Brennan DJ. CRABP2 - A novel biomarker for high-risk endometrial cancer. *Gynecol Oncol.*

RESEARCH TEAM

Group leader

Xavier Matias-Guiu Guia

Principal investigators

Francisco Javier Dolcet Roca

Nuria Eritja Sanchez

Anna Macia Armengol

Rosa Maria Marti Laborda

Sonia Gatius Caldero

Researchers

Dolors Cuevas Sanchez

Elena Estarán Silvan

Judit Pallares Quixal

Maria Pilar Gallel Vicente

Douglas Rene Sanchez Guzman

Xavier Soria Gili

Jordi Tarragona Foradada

Marta Vaquero Susagna

Johanna del Pilar Vargas Ramos

Ana Velasco Sanchez

Felipe Vilardell Villedas

Andree Yeramian Hakim

PhD students

Manel Alberti Valls

Joan Angel Baldo

Cristina Megino Luque

Raul Navaridas Fernandez de Bobadilla

Christopher Ríos Martínez

Ines de la Rosa Zurera

Anna Ruiz Mitjana

Pol Siso Camarasa

Maria Vidal Sabanés

Research technician

Marta Hereu Bordes



1.5. Oncological pathology

Diéguez N, Espinosa S, Yoldi G, Megías E, Bolinaga I, Viñas M, Gorgisen G, Domingo I, Pérez H, Bayascas JR, Colas E, Dolcet X, Lizcano JM. The ERK5/NF- κ B signaling pathway targets endometrial cancer proliferation and survival. *Cell. Mol. Life Sci.* 2022. 79. (10):p. 524-524. IF:9,207. Q1.

Vrede SW, Hulsman A, Reijnen C, Van de Vijver K, Colas E, Mancebo G, Moiola CP, Gil A, Huvila J, Koskas M, Weinberger V, Minar L, Jandakova E, Santacana M, Matias X, Amant F, Snijders MPLM, Küsters HVN, E, Bulten J, Pijnenborg J. The amount of preoperative endometrial tissue surface in relation to final endometrial cancer classification. *Gynecol Oncol.*

Pallarès J, Torreguitart N, Arqué G, Portero M, Purroy F. Human atheromatous plaques expressed sensing adaptor STING, a potential role in vascular inflammation pathogenesis. *Thromb. Haemost.* 2022. 122. (9):p. 1621-1624. IF:6,681. Q1.

Carretero I, Lop J, Iglesias M, Martínez C, Matias X, Pérez B, Palacios J. Impact of the COVID-19 pandemic on pathology training: a survey among Spanish residents. *Virchows Arch.* 2022. 481. (3):p. 1-5. IF:4,535. Q2.

Ruiz A, Navaridas R, Vidal M, Perramon A, Yeramian A, Felip I, Eritja N, Egea J, Encinas M, Matias X, Dolcet X. Lack of extracellular matrix switches TGF- β induced apoptosis of endometrial cells to epithelial to mesenchymal transition. *Sci Rep.* 2022. 12. (1):p. 14821-14821. IF:4,996. Q2.

Alturo A, Alamon F, Sanmartin V, Vilardell F, Martí RM. Congenital and Acquired Epidermodysplasia Verruciformis: A Series of 7 Cases. *Actas Dermosifiliogr.* 2022. 114. (2):p. 179-182.

Cemeli T, Guasch M, Ribes M, Ibars E, Navaridas R, Dolcet X, Pedraza N, Colomina N, Torres J, Ferrezuelo F, Herreros J, Gari E. Antitumor Effects of Ral-GTPases Downregulation in Glioblastoma. *Int J Mol Sci.* 2022. 23. (15):8199. IF:6,208. Q1.

Gatius S, Jove M, Megino C, Albertí M, Yeramian A, Bonifaci N, Piñol M, Santacana M, Pradas I, Llobet D, Pamplona R, Matias X, Eritja N. Metabolomic Analysis Points to Bioactive Lipid Species and Acireductone Dioxygenase 1 (ADI1) as Potential Therapeutic Targets in Poor Prognosis Endometrial Cancer. *Cancers.* 2022. 14. (12):2842. IF:6,575. Q1.

Megino C, Siso P, Mota N, Navaridas R, de la Rosa I, Urdanibia I, Albertí M, Santacana M, Pinyol M, Bonifaci N, Macia A, Llobet D, Gatius S, Matias X, Eritja N. ARID1A-deficient cells require HDAC6 for progression of endometrial carcinoma. *Mol Oncol.* 2022. 16. (11):p. 2235-2259. IF:7,449. Q1.

Vilaltella M, Vilardell F, Cid P, Huerva V. IgG(4)-related orbital disease. *Can. J. Ophthalmol.-J. Can. Ophthalmol.* 2022. 57. (3):p. 78-79. IF:2,592. Q3.

Jiménez D, Ariz M, Chang H, Matias X, de Andrea CE, Ortiz C. NaroNet: Discovery of tumor microenvironment elements from highly multiplexed images. *Med. Image Anal.* 2022. 78. p. 102384-102384. IF:13,828. D1.

Gatius S, Velasco A, Varela M, Cuatrecasas M, Jares P, Setaffy L, Bonhomme B, Santon A, Lindemann K, Croce S, Davidson B, Lax S, Palacios J, Matias X. Comparison of the Idylla™ MSI assay with the Promega™ MSI Analysis System and immunohistochemistry on formalin-fixed paraffin-embedded tissue of endometrial carcinoma: results from an international, multicenter study. *Virchows Arch.* 2022. 480. (5):p. 1031-1039. IF:4,535. Q2.

Crespo M, Perez A, Garcia A, Jover R, Guzman C, Dolcet X, Ibarz M, Martinez C, Eritja À, Diaz JM, Valdivielso JM. Elimination of Vitamin D Signaling Causes Increased Mortality in a Model of Overactivation of the Insulin Receptor: Role of Lipid Metabolism. *Nutrients.* 2022. 14. (7):1516. IF:6,706. Q1.

Garcia M, Alvarez R, Perez B, Iglesias M, Ramon Y Cajal S, Matias X, Rodriguez JL. La necesidad de la coordinación técnica en los servicios de Anatomía Patológica. Documento de posicionamiento de la Sociedad Española de Anatomía Patológica. *Rev Esp Patol.* 2022. 55. (2):p. 122-124.

Belokopytova A, Ruiz A, Vilardell F, Porcel JM. Cardiac tamponade as the initial presentation of a T-cell lymphoblastic lymphoma. *Galicia Clin.* 2022. 83. (2):p. 42-44.

Temprana J, López P, Castellví J, de Haro L, Ballesta E, Rojas M, Arrufat M, Marques F, Casas JR, Gallego C, Pons L, Mate JL, Fernández PL, López E, Bosch R, Martínez S, Ramón YS, Matias X. DigiPatICS: Digital Pathology Transformation of the Catalan Health Institute Network of 8 Hospitals-Planification, Implementation, and Preliminary Results. *Diagnostics.* 2022. 12. (4):852. IF:3,992. Q2.

Mota A, Oltra SS, Selenica P, Moiola CP, Casas C, Lopez C, Diaz E, Gatius S, Ruiz M, Calvo A, Rojo A, Hurtado P, Piñeiro R, Colas E, Gil A, Reis JS, Muínelo L, Abal M, Matias X, Weigelt B, Moreno G. Intratumor genetic heterogeneity and clonal evolution to decode endometrial cancer progression. *Oncogene.* 2022. 41. (13):p. 1835-1850. IF:8,756. D1.

Lopez C, Santos MD, Sanchez E, Marti R, Bueno M, Gutierrez L, Lecube A. Dapagliflozin plus exenatide on patients with type 2 diabetes awaiting bariatric surgery in the DEXBASU study. *Sci Rep.* 2022. 12. (1):p. 3236-3236. IF:4,996. Q2.

Laboratories

Laboratory 2nd floor. Lab b2.4.7
973 702 937

Email

fjmatiasguiu.lleida.ics@gencat.cat



1.5. Oncological pathology

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Gari Marsol, Eloi i Gatius Caldero, Sonia	Diputació de Lleida	Clinical and functional identification of metastatic colonization biomarkers	50.000

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Macia Armengol, Anna i Rosa M ^a Martí	Instituto de Salud Carlos III (ISCIII)	Análisis del microambiente tumoral del melanoma cutáneo asociado al perfil genético y/o a la aparición de resistencias	87.120
Matias-Guiu Guia, Xavier i Martinez Barriocanal, Agueda	Diputació de Lleida	EPH Receptor Signaling in Endometrial Cancer	50.000
Sorolla Bardaji, Anabel i Vilardell Villemas, Felipe	Diputació de Lleida	Development of precision therapies for triple negative breast cancer based on CRISPR/Cas12a ribonucleoproteins	50.000
Eritja Sanchez, Nuria	Instituto de Salud Carlos III (ISCIII)	Papel de ARID1A en la carcinogénesis endometrial dependiente de contexto. Análisis de los mecanismos moleculares y posibles implicaciones terapéuticas	87.120
Matias-guiu Guia, Xavier	Instituto de Salud Carlos III (ISCIII)	Plataforma de Biobancos y Biomodelos	205.700
Matias-guiu Guia, Xavier	Fundacio La Marató De TV3	Personalized Immunotherapy for Endometrial Cancer; Acronym: ExCITE (Endometrial Cancer Immunotherapy)	100.000
Dolcet Roca, Francisco Javier	Ministerio de Ciencia e Innovación	Descifrando redes de señalización en el cáncer de endometrio: papel del microRNA-424(322)/503 neoplasias endometriales y su regulación por las vías PI3K/AKT y TGF- β /Smad (NEOSIGNAL)	151.250
Marti Laborda, Rosa Maria	Instituto de Salud Carlos III (ISCIII)	Análisis del secretoma en el melanoma humano asociado al perfil genético y a la aparición de resistencias. Identificación de biomarcadores y/o dianas terapéuticas de aplicación clínica	93.170
Matias-guiu Guia, Xavier	Instituto de Salud Carlos III (ISCIII)	Incorporación de nuevas areas temáticas y nuevos grupos al consorcio CIBER	63.500



1.6. Calcium cellular signalling

During tumor progression, cancer cells adapt to changes in the microenvironment (lack of nutrients and /or oxygen) through the activation of stress pathways and autophagy. These processes are relevant in the resistance of the tumor to treatment and therefore important in the fight against cancer. Our group studies the relationship between calcium signaling and these adaptive processes, with the aim of proposing antitumoral strategies. The reason for this relationship stems from our findings that showed that T-channel deficiency activates processes of death or proliferative arrest in tumor cells. Currently our working model is Glioblastoma, an aggressive brain tumor that is characterized by its rapid growth, high invasiveness, plasticity and resistance to treatment. We use primary cultures derived from human biopsies, biochemical and cell biology techniques, gene silencing, and preclinical models of glioblastoma. The group is formed by two senior researchers, a postdoctoral researcher, a predoctoral researcher and technical staff.

Publications

Cemeli T, Guasch M, Ribes M, Ibars E, Navaridas R, Dolcet X, Pedraza N, Colomina N, Torres J, Ferrezuelo F, Herreros J, Gari E. Antitumor Effects of Ral-GTPases Downregulation in Glioblastoma. *Int J Mol Sci.* 2022. 23. (15):8199. IF:6,208. Q1.

Alza L, Visa A, Herreros J, Canti C. T-type channels in cancer cells: Driving in reverse. *Cell Calcium.* 2022. 105. p. 102610-102610. IF:4,690. Q3.

Visa A, Alza L, Canti C, Herreros J. Tetralol derivative NNC-55-0396 induces glioblastoma cell death by activating IRE1a, JNK1 and calcium signaling. *Bio-med. Pharmacother.* 2022. 149. p. 112881-112881. IF:7,419. D1.

Visa A, Alza L, Casas A, Herreros J, Canti C. Targeting T-type channels in cancer: what is on and what is off?. *Drug Discov. Today.* 2022. 27. (3):p. 743-758. IF:8,369. D1.

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Cantí Nicolás, Carles	Fundacio La Marato de TV3	Targeting calcium channels against primary and resistant glioblastoma	180.375
Herreros Danés, Judit	Ministerio de Ciencia e Innovación	Nuevos mecanismos de desregulación de la señalización por calcio contra el glioblastoma	157.300

RESEARCH TEAM

Group leaders

Carles Cantí Nicolás
Judit Herreros Danés

Researcher

Anna Visa Pretel

PhD student

Lia Alza Blanco

Research technician

David Argiles Baulo

Laboratories

Laboratory 2nd floor. Lab b2.11

973 702 214

973 702 950

Email

carles.canti@udl.cat

judit.herreros@udl.cat



1.7. Oncogenic signalling and development

The group considers a genetic approach to the mechanisms that regulate the activated cell signalling pathways by proto-oncogen Ret, and its regulation by the putative tumor suppressor Sprouty. As a fundamental tool, the group uses lines of mutant mice generated by homologous recombination. The studies cover different fields such as renal development and the peripheral nervous system, or the biology of tumors of neuroendocrine origin.

Publications

Altes G, Vaquero M, Cuesta S, Anerillas C, Macia A, Espinet C, Ribera J, Bellusci S, Klein OD, Yeramian A, Dolcet X, Egea J, Encinas M. A dominant negative

mutation uncovers cooperative control of caudal Wolffian duct development by Sprouty genes. *Cell. Mol. Life Sci.* 2022. 79. (10):p. 514-514. IF:9.207. Q1.

Ruiz A, Navaridas R, Vidal M, Perramon A, Yeramian A, Felip I, Eritja N, Egea J, Encinas M, Matias X, Dolcet X. Lack of extracellular matrix switches TGF- β induced apoptosis of endometrial cells to epithelial to mesenchymal transition. *Sci Rep.* 2022. 12. (1):p. 14821-14821. IF:4.996. Q2.

Torres P, Anerillas C, Ramirez O, Fernández A, Encinas M, Povedano M, Andres P, Ferrer I, Ayala V, Pamplona R, Portero M. The motor neuron disease mouse model hSOD1-G93A shows a non-canonical profile of senescence biomarkers. *DNM Dis. Models Mech.* 2022. 15. (8):dmm049059. IF:5.732. Q1.

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Encinas Martin, Mario	Ministerio de Ciencia e Innovación	Mecanismos moleculares y efectos biológicos de la senescencia celular mediada por Sprouty	157.300

RESEARCH TEAM

Group leader

Mario Encinas Martin

Researcher

Joan Ribera Calvet

PhD student

Gisela Altes Bargallo

Research technicians

Marta Hereu Bordes

Aida Perramon Güell

Laboratories

Laboratory 2nd floor. Lab b2.08

973 702 213

Email

mario.encinas@udl.cat



Area 2. Chronic diseases, surgery and health care

Area coordinator: Dr. José Manuel Valdivielso Revilla

The area contains 6 groups dedicated to determining the pathophysiological mechanisms of vascular, renal, metabolic and pulmonary diseases. In addition, research is being conducted on new surgical methods and strategies to promote healthy aging.

Groups

2.1 Experimental surgery

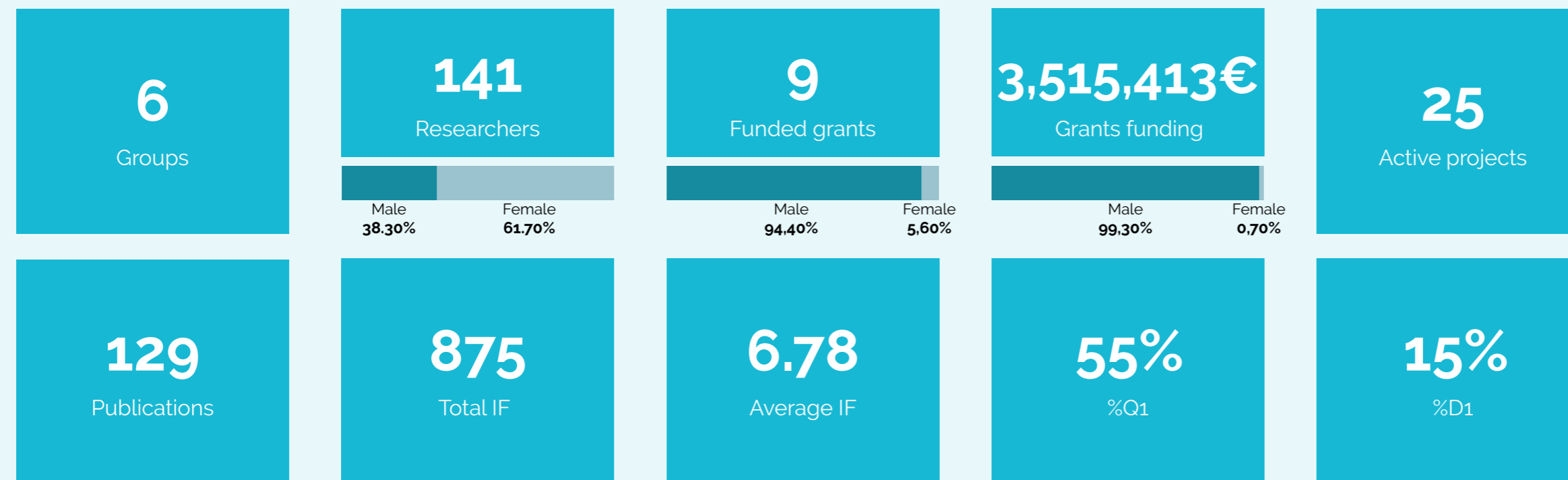
2.2 Research group of immunology and metabolism (GRIM)

2.3 Vascular and renal translational research group

2.4 Translational research in respiratory medicine group

2.5 Research group of health care (GReCS)

2.6 Precision medicine in chronic diseases group





2.1. Experimental surgery

The Experimental Surgery group is a multidisciplinary group made up of professionals from the fields of surgery, anaesthesia, veterinary medicine, technical research and management who work to develop research projects in surgical pathology, either by designing experimental models with large animals (pigs) to facilitate translational research, or by participating in multicentre clinical trials to innovate and improve clinical outcomes, and to maintain continuous training in diagnostic and surgical techniques for professionals in health and animal sciences, through hybrid simulation.

The research of the experimental surgery group is mainly carried out at the facilities of the CREBA Centre of the IRBLLeida in Torrelameu, which has the necessary infrastructure to obtain experimental models in pigs, which allow, in the long run, to extrapolate the findings of the research lines to human clinical practice.

Publications

Tur J, Escartin A, Muriel P, González M, Cuello E, Pinillos A, Salvador H, Olsina JJ. Days of symptoms and days of hospital admission before surgery do not influence the results of cholecystectomy in moderate acute calculous cholecystitis. *Rev. Esp. Enferm. Dig.* 2022. 114. (4):p. 213-218. IF:2,389. Q4.

Ahmed W, Bhatia S, McLean KA,....., Cuello E, Escoll J,, Eftychiou S, STAR-Surg C, EuroSurg C. Validation of the OAKS prognostic model for acute kidney injury after gastrointestinal surgery. *BJS Open.* 2022. 6. (1):zrab150. IF:3,875. Q1.

Drudis R, Colomina J, Torra M, Sabate S, Villalba P, Marco G, Triquell X, Del Pozo D, Palliso F, Montero A. Adductor canal block performed 20 hours after total knee arthroplasty to improve postoperative analgesia and functional recovery: a double-blind randomized controlled clinical trial. *Minerva Anesthesiol.* 2022. 88. (4):p. 238-247. IF:3,396. Q3.

de Antonio DG, Carrasco SC, Roman AR, Royuela A, Calle AS, Fornell CO, Caja SC, Embun R, Royo I, Recuero JL, Cabanero A, Moreno N, Bolufer S, Congregado M, Jimenez MF, Aguinagalde B, Amor S, Arraras MJ, Orozco A, Boada M, Cal I, Ramos AC, Fernandez E, Garcia S, Garcia MD, Garcia JM, Garcia JA, Gelbenzu JJ, Giraldo CF, Hernandez MTG, Hernandez J, Wolf J, Abularach AJ, Jimenez U, Sanz IL, Martinez NJ, Martinez E, Collado LM, Poce RM, Moradiellos FJ, Moreno R, Merino SBM, Quero F, Ramirez ME, Ramos R, Rivo E, Rodriguez A, Rojo R, Sanchez D, Moreno LS, Simon C, Trujillo JC, Garcia CL, Alfara JJF, Romero JS, Trancho FH. Surgical Risk Following Anatomic Lung Resection in Thoracic Surgery: A Prediction Model Derived From a Spanish Multicenter Database. *Arch Bronconeumol.* 2022. 58. (5):p. 398-405. IF:6,333. Q1.

Negro MD, Tallada AG, de Nadal M, Sune AB, Munoz SM, Marti MC, Perez AA, Ferre JC, Sanz AP, Hurtado GR, Cabanero JM, Salazar EO, Matamala AM, Saludes J, Buitureira A, Tebar CF, Lucero MLB, Serramitja MC, Basil ML, Faura A, Trujillo N, Garcia RD, Papiol FJS, Villen FE, Navarro AT, Garcia CD, Fernandez FR, Ramirez JT, Ferron MLM, Zafra OS, Domingo XI, Blanco NV. Pre-operative prevalence of asymptomatic carriers of COVID-19 in hospitals in Catalonia during the first wave after the resumption of surgical activity. *Cir. Espan.* 2022. 100. (6):p. 352-358. IF:2,242. Q3.

Osorio J, Madrazo Z, Videla S, Sainz B, Rodriguez A, Campos A, Santamaria M, Pelegrina A, Gonzalez C, Aldeano A, Sarrugarte A, Gomez CJ, Ruiz D, Garcia A, Gomez C, Gil M, Vila M, Clavell A, Campillo B, Millan L, Olona C, Sanchez S, Medrano R, Lopez CA, Perez N, Artigau E, Calle M, Echenagusia V, Otero A, Tebe C, Pallares N, Biondo S, Valderas JM, COVID GRP. Use of failure-to-rescue after emergency surgery as a dynamic indicator of hospital resilience during the COVID-19 pandemic. A multicenter retrospective propensity score-matched cohort study. *Int. J. Surg.* 2022. 106. IF:13,400. D1.

RESEARCH TEAM

Group leader

Jorge J. Olsina Kissler

Principal investigator

Alfredo Escartin Arias

Researchers

Mari Cruz de la Fuente Juarez

Cristina Gas Ruiz

Fernando Herrerias Gonzalez

Yolanda Maestre Gonzalez

Nuria Mestres Petit

Maria Carmen Mias Carballal

Lucia Milla Collado

Antonio Montero Matamala

Pablo Muriel Alvarez

Carlos A Rombolá

Maria Teresa Santamaria Gomez

Rafael Villalobos Mori

PhD student

Fulthon Frank Vela Polanco

Laboratories

HUAV

973 705 298

Email

jjolsina.lleida.ics@gencat.cat



2.2. Research group in immunology and metabolism (GRIM)

The Research Group in Immunology and Metabolism (GRIM) is subdivided into 2 nodes that represent the basic and clinical research of the group.

• Basic node: Immunology and Immunopathology Group (GRIIP)

The GRIIP is the basic research node of the Research Group in Immunology and Metabolism (GRIM). The group of the University of Lleida (UdL) and the Institute of Biomedical Research of Lleida (IRBLleida) is currently constituted by two Principal Investigators, Joan Verdaguer and Concepció Mora, and their respective research units. Both investigators have a long history as leading researchers in R & D for more than a decade and a half in the field of immunology and autoimmunity. Both investigators have a long history as leading researchers in R & D for more than a decade and a half in the field of immunology and autoimmunity. Both researchers are members of the same research group recognized by the Generalitat (SGR) of the UdL and IRBLleida since its inception.

The research objective of the group is the study of the mechanisms of loss of immunological tolerance in autoimmune endocrine diseases, and more specifically in Type 1 Diabetes (T1D), and in the study of tools for the diagnosis and treatment of these diseases. The group also aims to lay the foundations on a future immunotherapy of T1D and other endocrinopathies of autoimmune origin, through participation and collaboration with different research and care groups.

• Clinical node: Obesity, Diabetes and Metabolism Research Group (ODIM)

The ODIM Research Group has worked in recent years on 2 main lines of research: (i) Being able to predict the response to bariatric surgery (BC), both in terms of weight and metabolic response, and (ii) The study of the mechanisms by which diabetes has a negative impact on lung function and breathing during sleep. Although both lines emerged independently, they have eventually synergised with each other. Our group's research is mainly clinical, although with a clear translational application, fostering collaboration with external groups complementary to our own.

Two of the members of the group are not principal investigators in publicly funded competitive projects. 80% have a PhD degree in health sciences or are currently working on their doctoral thesis.

Most of the team members are specialists in Endocrinology and Nutrition, but our group also includes nursing graduates and graduates in human nutrition and dietetics.

We combine funded research projects with the development of clinical trials promoted by both the researcher and the laboratory. In recent years we have become one of the most recruiting centres in our country in the studies in which we participate.

Publications

Puig C, Castelblanco E, Falguera M, Hernández M, Soldevila B, Julián MT, Teis A, Julve J, Barranco M, Franch J, Puig M, Ortega E, Amigó N, Alonso N, Mauricio D. Advanced lipoprotein profile in individuals with normal and impaired glucose metabolism. *Rev Esp Cardiol (Engl Ed)*. 2022. 75. (1):p. 22-30. IF:4,596. Q1.

Mediano O, González N, Montserrat JM, Alonso ML, Almendros I, Alonso A, Barbe F, Borsini E, Caballero C, Cano I, de Carlos F, Carmona C, Carrillo JL, Chiner E, Cordero JA, de Manuel L, Duran J, Farre R, Franceschini C, Gaig C, Garcia P, Garcia F, Garmendia O, Gómez T, González S, Hoyo MB, Lecube A, Antonio J, Maniegas L, Martínez JL, Masa JF, Masdeu MJ, Mayos M, Mirabet E, Monasterio C, Navarro N, Olea de la Fuente E, Plaza G, Puertas FJ, Rabec C, Resano P, Rigau D, Roncero A, Ruiz C, Salord N, Saltijeral A, Sampol G, Sánchez MÁ, Sans Ó, Teixeira C, Tinahones F, Maria S, Troncoso MF, Vargas LK, Winck J, Zabala N, Egea C, el Spanish N. [Translated article] International consensus document on obstructive sleep apnea [Documento internacional de consenso sobre apnea obstructiva del sueño]. *Arch Bronconeumol*. 2022. 58. (1):p. 52-68. IF:6,333. Q1.

Carolina LC, Ciudin A, Sanchez E, Tinahones FJ, Barbe F, Dalmasas M, Garcia M, Soto A, Gaeta AM, Pellitero S, Marti R, Hernandez C, Simo R, Lecube A. Liraglutide Improves Forced Vital Capacity in Individuals With Type 2 Diabetes: Data From the Randomized Cross-Over LIRALUNG Study. *Diabetes*. 2022. 71. (2):p. 315-320. IF:9,337. D1.

Lopez C, Santos MD, Sanchez E, Marti R, Bueno M, Gutierrez L, Lecube A. Dapagliflozin plus exenatide on patients with type 2 diabetes awaiting bariatric surgery in the DEXBASU study. *Sci Rep*. 2022. 12. (1):p. 3236-3236. IF:4,996. Q2.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmasas M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med*. 2022. 11. (5):1413. IF:4,964. Q2.

Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. *Nutrients*. 2022. 14. (5):1102. IF:6,706. Q1.

RESEARCH TEAM

Group leaders

Albert Lecube Torelló
Concepción Mora Giral
Joan Verdaguer Autonell

Researchers

Marta Bueno Díez
Marta Corral Pujol
Marta Hernandez Garcia
Josep León Mengibar
Carolina Lopez Cano
Ferran Rius Riu
Enric Sanchez Peña
Maria Dolores Santos Rey

PhD students

Lorena Gómez Calvo
Júlia Luna Salinas
Estela Rosell Mases

Research technician

Marta Torres Montiel

Management technician

Anna Hernandez Ribalta

Laboratories

Biomedicine II 2nd floor

Laboratory ground floor. Lab bo.5.

973 702 958

973 705 240

Email

joan.verdaguer@udl.cat

conchi.mora@udl.cat

alecube.lleida.ics@gencat.cat



2.2. Research group in immunology and metabolism (GRIM)

Granado M, Solà I, Hernández M, Rojo MI, Julve J, Mauricio D. Effectiveness of medical nutrition therapy in adolescents with type 1 diabetes: a systematic review. *Nutr Diabetes*. 2022. 12. (1):p. 24-24. IF:4,725. Q2.

Bellido V, Martinez J, Calvo F, Villarroel A, Lecumberri E, Moreno J, Morillas C, Rodrigo S, Izarra A, Lecube A. Beyond the Glycaemic Control of Dapagliflozin: Microangiopathy and Non-classical Complications. *Diabetes Ther*. 2022. 13. (5):p. 873-888. IF:3,595. Q3.

Gonzalez JM, Garcia M, Gorgojo JJ, Jimenez A, Llorente I, Matute E, Tejera C, Izarra A, Lecube A. Beyond the Glycaemic Control of Dapagliflozin: Impact on Arterial Stiffness and Macroangiopathy. *Diabetes Ther*. 2022. 13. (7):p. 1281-1298. IF:3,595. Q3.

Bermúdez M, Martí M, Castro E, Bretones MDM, Farràs C, Torres G, Pamplona R, Lecube A, Mauricio D, Valdivielso JM, Fernández E. Development and Validation of a Personalized, Sex-Specific Prediction Algorithm of Severe Atheromatosis in Middle-Aged Asymptomatic Individuals: The ILERVAS Study. *Front. Cardiovasc. Med*. 2022. 9. p. 895917-895917. IF:5,846. Q2.

Hernández M, Nóvoa Y, Faner R, Palou E, Esquerda A, Castelblanco E, Wägnner AM, Mauricio D. Genetics: Is LADA just late onset type 1 diabetes?. *Front. Endocrinol*. 2022. 13. p. 916698-916698. IF:6,055. Q1.

Julve J, Rossell J, Correig E, Rojo MI, Amigó N, Hernández M, Traveset A, Carbonell M, Alonso N, Mauricio D, Castelblanco E. Predictive Value of the Advanced Lipoprotein Profile and Glycated Proteins on Diabetic Retinopathy. *Nutrients*. 2022. 14. (19):3932. IF:6,706. Q1.

Castelblanco E, Hernandez M, Alonso N, Ribes A, Real J, Granado M, Rossell J, Rojo MI, Dusso AS, Julve J, Mauricio D. Association of a-klotho with subclinical carotid atherosclerosis in subjects with type 1 diabetes mellitus. *Cardiovasc. Diabetol*. 2022. 21. (1):p. 207-207. IF:8,949. Q1.

Matas C, Soria X, Gonzalez M, Baradad M, Tuset N, Rius F, González M, Gatiús S, Vilardell F, López R, María R. Abdominal tumors in patients with neurofibromatosis type I: Genotype-phenotype relationships. *Eur J Med Genet*. 2022. 65. (11):p. 104609-104609. IF:2,465. Q3.

Castelblanco E, Granado M, Hernandez M, Pinyol M, Correig E, Julve J, Rojo MI, Alonso N, Avogaro A, Ortega E, Mauricio D. Diabetic retinopathy predicts cardiovascular disease independently of subclinical atherosclerosis in individuals with type 2 diabetes: A prospective cohort study. *Front. Cardiovasc. Med*. 2022. 9. p. 945421-945421. IF:5,846. Q2.

Vilarrasa N, Bretón I, Ballesteros M, Lecube A, Goday A, Pellitero S, Sánchez R, Zugasti A, Ciudin A, de Hollanda A, Rubio MA, GOSEEN (Grupo de Obesidad de la Sociedad Española de Endocrinología Nutrición) Y. Recommendations for the diagnosis and treatment of hypoglycaemia after bariatric surgery. *Endocrinol Diabetes Nutr (Engl Ed)*. 2022. 69. (9):p. 723-731. IF:1,833. Q4.

Sánchez E, Sánchez M, López C, Bermúdez M, Valdivielso JM, Farràs C, Pamplona R, Torres G, Mauricio D, Castro E, Fernández E, Lecube A. Is There a Link between Obesity Indices and Skin Autofluorescence? A Response from the ILERVAS Project. *Nutrients*. 2022. 15. (1):203. IF:6,706. Q1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Lecube Torelló, Albert	Instituto de Salud Carlos III (ISCIII)	Susceptibilidad genética para predecir la pérdida de peso tras la cirugía bariátrica	839.298
León Mengíbar, Josep	Acadèmia de Ciències Mèdiques i de la Salut	Impacte dels trastorns de la respiració nocturna en les característiques i evolució de les úlceres del peu en pacients amb diabetis (Estudi PEU)	10.000



2.2. Research group in immunology and metabolism (GRIM)

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Lecube Torelló, Albert	Instituto de Salud Carlos III (ISCIII)	¿Conocer la predisposición genética del paciente con obesidad ayuda a mejorar la eficacia de la cirugía bariátrica?	153.670
Lopez Cano, Carolina	Instituto de Salud Carlos III (ISCIII)	El efecto de la diabetes mellitus tipo 2 y la obesidad sobre la cronodisrupción. La hipoxia nocturna como nexo de unión	62.920
Lecube Torelló, Albert i Targa, Adriano	Diputació de Lleida	Comprendiendo mejor la interacción entre los mecanismos etio-patogénicos de la obesidad: Hacia un modelo predictivo de base genética	50.000
Verdaguer Autonell, Juan	Ministerio de Ciencia e Innovación	Modelación de la microbiota intestinal en las etapas iniciales del desarrollo de la diabetes autoinmune en el ratón NOD, modelo de la diabetes tipo 1 humana	121.000
Lecube Torelló, Albert	Instituto de Salud Carlos III (ISCIII)	Utilidad del estudio genético como predictor de respuesta a la cirugía bariátrica: estudio de cohortes y mecanismos implicados (Estudio GENOBS)	202.070



2.3. Vascular and renal translational research group

Vascular and Renal Translational Research (VRTR) Group from the IRBLLeida is a multidisciplinary group with basic and clinical scientists working in an integrated environment. The main focus of our research group is the identification of factors involved in the progression of chronic kidney disease (CKD) and cardiovascular complications in CKD from the basic/translational and the clinical point of view. Through an array of diverse experimental approaches that include molecular biology, biochemistry, in vivo animal models of disease and state-of-the-art vascular imaging techniques, scientists of VRTR group join their efforts in solving challenging scientific problems.

VRTR group has been successfully leading the NEFRONA and ILERVAS project, with main objective in investigating vascular disease and hidden kidney disease. VRTR group holds collaborations with various international research groups in the USA, Canada, Netherlands, Italy and France. Researchers from the VRTR group are actively involved in several national and international EU-funded consortia.

Publications

Rayego S, Marquez L, Rodrigues R, Sanz AB, Guiteras R, Doladé N, Rubio I, Manonelles A, Codina S, Ortiz A, Cruzado JM, Ruiz M, Sola A. Molecular Mechanisms of Kidney Injury and Repair. *Int. J. Mol. Sci.* 2022. 23. (3):1542.

Molina M, Sorolla C, Samso E, Carcaña M, Martín ML, Jatem E, Pitarch G, Montero L, Lauzurica R, Segarra A. Cost of Traveling to Follow-up Appointments at Kidney Transplant Clinics. *Transplant. Proc.* 2022. 54. (1):p. 94-95. IF:1,014. Q4.

Molina M, Sorolla C, Samso E, Carcaña M, Martín ML, Jatem E, Pitarch G, Montero L, Lauzurica R, Segarra A. Quality of Life in Long-Term Renal Transplant Patients: A Controversial Subject. *Transplant. Proc.* 2022. 54. (1):p. 91-93. IF:1,014. Q4.

Medrano AS, Muijseberg A, Wimbury D, Martín M, Jatem E, González J, Colás L, García A, Martínez C, Barratt J. Relationship between IgA1 lectin-binding specificities, mesangial C4d deposits and clinical phenotypes in IgA nephropathy. *Nephrol Dial Transplant.* 2022. 37. (2):p. 318-325. IF:7,186. Q1.

Núñez E, Fuster V, Gomez M, Valdivielso JM, Fernandez JM, Martinez D, Rodriguez JM, Bonzon E, Calvo E, Alfayate A, Bermudez M, Escola JC, Fernandez L, Cerro I, Mendiguren JM, Sanchez F, Sanz J, Ordovas JM, Blanco LM, Garcia JM, Ibáñez B, Lara E, Fernandez A, Martín JL, Vazquez J. Unbiased plasma proteomics discovery of biomarkers for improved detection of subclinical atherosclerosis. *EBioMedicine.* 2022. 76. p. 103874-103874. IF:11,205. Q1.

Crespo M, Perez A, Guzman C, Rayego S, Dolade N, Garcia A, Jover R, Valdivielso JM. PTEN Deletion in Adult Mice Induces Hypoinsulinemia With Concomitant Low Glucose Levels. *Front. Endocrinol.* 2022. 13. p. 850214-850214. IF:6,055. Q1.

Roca N, Jatem E, Abo A, Santacana M, Cruz A, Madrid A, Fraga G, Martín M, Gonzalez J, Martínez C, Balus A, Segarra A. CD44-negative parietal-epithelial cell staining in minimal change disease: association with clinical features, response to corticosteroids and kidney outcome. *Clin Kidney J.* 2022. 15. (3):p. 545-552. IF:5,860. Q1.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmases M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med.* 2022. 11. (5):1413. IF:4,964. Q2.

Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. *Nutrients.* 2022. 14. (5):1102. IF:6,706. Q1.

Kosanovic M, Milutinovic B, Glamoclija S, Morlans IM, Ortiz A, Bozic M. Extracellular Vesicles and Acute Kidney Injury: Potential Therapeutic Avenue for Renal Repair and Regeneration. *Int J Mol Sci.* 2022. 23. (7):3792. IF:6,208. Q1.

Bauer C, Piani F, Banks M, Ordoñez FA, de Lucas C, Oshima K, Schmidt EP, Zakharevich I, Segarra A, Martínez C, Roncal C, Satchell SC, Bjornstad P, Lucia MS, Blaine J, Thurman JM, Johnson RJ, Cara G. Minimal Change Disease Is Associated With Endothelial Glycocalyx Degradation and Endothelial Activation. *Kidney Int Rep.* 2022. 7. (4):p. 797-809. IF:6,234. Q1.

Crespo M, Perez A, Garcia A, Jover R, Guzman C, Dolcet X, Ibarz M, Martinez C, Eritja À, Diaz JM, Valdivielso JM. Elimination of Vitamin D Signaling Causes Increased Mortality in a Model of Overactivation of the Insulin Receptor: Role of Lipid Metabolism. *Nutrients.* 2022. 14. (7):1516. IF:6,706. Q1.

Khan A, Salehi H, Alexia C, Valdivielso JM, Bozic M, Lopez IC, Fajas L, Gerbal S, Daujat M, Gitenay D, Villalba M. Glucose Starvation or Pyruvate Dehydrogenase Activation Induce a Broad, ERK5-Mediated, Metabolic Remodeling Leading to Fatty Acid Oxidation. *Cells.* 2022. 11. (9):IF:7,666. Q2.

RESEARCH TEAM

Group leader

Jose Manuel Valdivielso Revilla

Principal investigators

Milica Bozic

Alfons Segarra Medrano

Researchers

Marcelino Bermudez Lopez

Serafin Cambray Carner

Lourdes Craver Hospital

Juan Miguel Diaz Tocados

Nuria Dolade Masot

Elias Jatem Escalante

Maria Paz Marco Mayayo

Marisa Martín Conde

Cristina Martínez Martínez

Jordi Roig Carcel

Jose Felipe Sarro Sobrin

PhD students

Maite Caus Enriquez

Juan Diego Dominguez Coral

Auria Eritja Sanjuan

Aurora Pérez Gómez

Research technicians

Eva Castro Boque

Alicia Garcia Carrasco

Virtudes Maria de Lamo

Manuel Marti Antonio

Ana Maria Martinez Bardaji

Ingrid Mena Morlans

M Teresa Vidal Balleste

Laboratories

Biomedicine I 1st floor Lab b1.10

973 702 479

Email

valdivielso@irbllleida.cat



2.3. Vascular and renal translational research group

Gonzalez LM, Robles NR, Mota S, Arevalo JC, Valdivielso JM, Lopez J, Gervasini G. Tag-SNPs in Phospholipase-Related Genes Modify the Susceptibility to Nephrosclerosis and its Associated Cardiovascular Risk. *Front. Pharmacol.* 2022. 13. p. 817020-817020. IF:5,988. Q1.

Salvo E, Rodiño BK, Albert M, Lobo B, Santos J, Farré R, Martínez C, Vicario M. Eosinophils in the Gastrointestinal Tract: Key Contributors to Neuro-Immune Crosstalk and Potential Implications in Disorders of Brain-Gut Interaction. *Cells.* 2022. 11. (10):1644. IF:7,666. Q2.

Berens S, Dong YJ, Fritz N, Walstab J, D'Amato M, Zheng TH, Wahl V, Boekstegers F, Bermejo JL, Martínez C, Schmitteckert S, Clevers E, Engel F, Gauss A, Herzog W, Spiller R, Goebel M, Moennikes H, Andresen V, Thomas F, Keller J, Pehl C, Stein C, Clarke G, Dinan TG, Quigley EM, Sayuk G, Simren M, Tesarz J, Rappold G, van L, Schaefert R, Niesler B. Serotonin type 3 receptor subunit gene polymorphisms associated with psychosomatic symptoms in irritable bowel syndrome: A multicenter retrospective study. *World J. Gastroenterol.* 2022. 28. (21):p. 2334-2349. IF:5,374. Q2.

Rayego S, Dolade N, Garcia A, Diaz JM, Ibarz M, Valdivielso JM. The Increase in FGF23 Induced by Calcium Is Partially Dependent on Vitamin D Signaling. *Nutrients.* 2022. 14. (13):2576. IF:6,706. Q1.

Pardo C, Ganda JP, Martínez C, Pigrau M, Exposito E, Albert M, Melon E, Nieto A, Rodiño B, Fortea M, Guagnozzi D, Rodríguez A, Torres I, Santos I, Azpiroz F, Lobo B, Alonso C, Santos J, Gonzalez AM, Vicario M. Mucosal Plasma Cell Activation and Proximity to Nerve Fibres Are Associated with Glycocalyx Reduction in Diarrhoea-Predominant Irritable Bowel Syndrome: Jejunal Barrier Alterations Underlying Clinical Manifestations. *Cells.* 2022. 11. (13):2046. IF:7,666. Q2.

Bermúdez M, Martí M, Castro E, Bretones MDM, Farràs C, Torres G, Pamplona R, Lecube A, Mauricio D, Valdivielso JM, Fernández E. Development and Validation of a Personalized, Sex-Specific Prediction Algorithm of Severe Atherosclerosis in Middle-Aged Asymptomatic Individuals: The ILERVAS Study. *Front. Cardiovasc. Med.* 2022. 9. p. 895917-895917. IF:5,846. Q2.

Quiroga B, Ramos PM, Horrillo AS, Ortiz A, Valdivieso JM, Carrero JJ. Triglycerides-glucose index and the risk of cardiovascular events in persons with non-diabetic chronic kidney disease. *Clin Kidney J.* 2022. 15. (9):p. 1705-1712. IF:5,860. Q1.

Gonzalez J, Jatem E, Roig J, Valtierra N, Ostos E, Abo A, Santacana M, Garcia A, Segarra A. Usefulness of urinary biomarkers to estimate the interstitial fibrosis surface in diabetic nephropathy with normal kidney function. *Nephrol Dial Transplant.* 2022. 37. (11):p. 2102-2110. IF:7,186. Q1.

Fritz N, Berens S, Dong Y, Martínez C, Schmitteckert S, Houghton LA, Goebel M, Wahl V, Kabisch M, Götze D, D'Amato M, Zheng T, Röth R, Mönnikes H, Tesarz J, Engel F, Gauss A, Raithel M, Andresen V, Keller J, Frieling T, Pehl C, Stein C, Clarke G, Kennedy PJ, Cryan JF, Dinan TG, Quigley E, Spiller R, Beltrán C, Madrid AM, Torres V, Mayer EA, Sayuk G, Gazouli M, Karamanolis G, Bustamante M, Estivil X, Rabionet R, Hoffmann P, Nöthen MM, Heilmann S, Schmidt B, Franke A, Lieb W, Herzog W, Boeckxstaens G, Wouters MM, Simrén M, Rappold GA, Vicario M, Santos J, Schaefert R, Lorenzo J, Niesler B. The serotonin receptor 3E variant is a risk factor for female IBS-D. *J. Mol. Med.* 2022. 100. (11):p. 1617-1627. IF:5,606. Q1.

Bover J, Trinidad P, Jara A, Soler J, Martín A, Torres A, Frazao J, Urena P, Dusso A, Arana C, Graterol F, Romero G, Troya M, Samaniego D, D'Marco L, Valdivielso JM, Fernandez E, Arenas MD, Torregrosa V, Navarro JF, Lloret MJ, Ballarin JA, Bosch RJ, Gorritz JL, de Francisco A, Gutierrez O, Ara J, Felsenfeld A, Canalejo A, Almaden Y. Silver jubilee: 25 years of the first demonstration of the direct effect of phosphate on the parathyroid cell. *Nefrologia.* 2022. 42. (6):p. 645-655. IF:3,084. Q2.

Navarro JF, Mora C, Diaz JM, Bozic M, Bermudez M, Martín M, Valdivielso JM. Serum Phosphate Levels Modify the Impact of FGF23 Levels on Hemoglobin in Chronic Kidney Disease. *Nutrients.* 2022. 14. (22):4842. IF:6,706. Q1.

Mota S, Gonzalez LM, Robles NR, Valdivielso JM, Arevalo JC, Lopez J, Gervasini G. Polymorphisms in glucose homeostasis genes are associated with cardiovascular and renal parameters in patients with diabetic nephropathy. *Ann. Med.* 2022. 54. (1):p. 3039-3051. IF:5,348. Q2.

Sánchez E, Sánchez M, López C, Bermúdez M, Valdivielso JM, Farràs C, Pamplona R, Torres G, Mauricio D, Castro E, Fernández E, Lecube A. Is There a Link between Obesity Indices and Skin Autofluorescence? A Response from the ILERVAS Project. *Nutrients.* 2022. 15. (1):203. IF:6,706. Q1.



2.3. Vascular and renal translational research group

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Valdivielso Revilla, José Manuel i Ibarz Escuer, Maria Mercedes	Diputació de Lleida	Influence of SARS-COV-2 infection in atherosclerosis development. "EL BUS DE LA SALUT" study	50.000
Valdivielso Revilla, José Manuel	Agencia Gestió Ajuts Universitat i Recerca	Preservació la membrana peritoneal abordant noves vies per inhibir la transició mesotelio-mesenquimal	20.000

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Bozic, Milica	Instituto de Salud Carlos III (ISCIII)	Descifrando el papel de SNCA en la regulación de la autofagia y el daño renal: implicaciones mecanísticas, terapéuticas y pronósticas	123.420
Martinez Martinez, Cristina	Instituto de Salud Carlos III (ISCIII)	Interacción entre huésped-microbiota y defectos en la integridad de la mucosa intestinal implicados en el origen del daño glomerular en el síndrome nefrótico idiopático	84.700
Valdivielso Revilla, José Manuel	Instituto de Salud Carlos III (ISCIII)	Papel de PTEN en la reabsorción tubular renal de proteínas. Implicaciones en nefropatías proteinúricas	165.770
Diaz Tocados, Juan Miguel	FUNDACIÓN SENEFRO	Papel de la Fosfatasa PTEN en el Desarrollo de las Alteraciones Óseas Asociadas a la Enfermedad Renal Crónica y la Regulación de la Síntesis Osteocítica de FGF23 y Esclerostina	24.000
Bermudez Lopez, Marcelino	Institut de Recerca Biomèdica de Lleida (IRBLleida)	Desarrollo y caracterización de un modelo de aterosclerosis acelerada por insuficiencia renal crónica porcina mediante nefrectomía laparoscópica	79.740
Segarra Medrano, Alfons	Instituto de Salud Carlos III (ISCIII)	Relación entre glicofomas de IgA1 e IgA2, actividad clínica y activación del complemento en la nefropatía IgA	56.870
Valdivielso Revilla, José Manuel	Instituto de Salud Carlos III (ISCIII)	Red de investigación Renal: REDINREN	118.673
Valdivielso Revilla, José Manuel	FUNDACIÓN SENEFRO	Identifying Predictors of Cardiovascular Events in Chronic Kidney Disease. A Cohorts Substudy Within the Nefrona Study	24.000



2.4. Translational research in respiratory medicine group

The group consists of basic, clinical and epidemiological researchers, who work at the Lleida Biomedical Research Institute (IRBLleida), a collaborating center of the University of Lleida and Catalan Health Institute. The principal investigator is Ferran Barbé.

Since 2008, the TRRM group has belonged to the CIBERES (ISCIII), as Group 35. We work alongside researchers from many specialties in order to approach the study of the pathophysiology of obstructive sleep apnea syndrome (OSA) and in the impact of SARS_CoV-2 infection in the respiratory system.

Publications

Biener M, Giannitsis E, Thum T, Bär C, Stoyanov KM, Salbach C, de Gonzalo D, Frey N, Mueller M. Prognostic value of circulating microRNAs compared to high-sensitivity troponin T in patients presenting with suspected acute coronary syndrome to the emergency department. *Clin. Biochem.* 2022. 99. p. 9-16. IF:3,625. Q2.

Pinilla L, Benítez ID, Santamaria F, Targa A, Moncusí A, Dalmases M, Mínguez O, Aguilà M, Jové M, Sol J, Pamplona R, Barbé F, Sánchez M. Plasma profiling reveals a blood-based metabolic fingerprint of obstructive sleep apnea. *Bio-med. Pharmacother.* 2022. 145. p. 112425-112425. IF:7,419. D1.

Villegas DC, Barril S, Giner J, Millan P, Rodrigo A, Merino JL, Sibila O. Study of Diffuse Interstitial Lung Disease With the Analysis of Volatile Particles in Exhaled Air. *Arch Bronconeumol.* 2022. 58. (1):p. 99-101. IF:6,333. Q1.

Gonzalez J, Benitez ID, De Gonzalo D, Torres G, de Batlle J, Gomez S, Moncusí A, Carmona P, Santistevé S, Monge A, Gort C, Zuil M, Cabo R, Manzano C, Vengoechea JJ, Vaca R, Mínguez O, Aguilar M, Ferrer R, Ceccato A, Fernandez L, Motos A, Riera J, Menendez R, Garcia D, Peñuelas O, Labarca G, Caballero J, Barbera C, Torres A, Barbe F, CIBERESUCICOVID Project (COV20/00110 I. Impact of time to intubation on mortality and pulmonary sequelae in critically ill patients with COVID-19: a prospective cohort study. *Crit Care.* 2022. 26. (1):p. 18-18. IF:19,334. Q1.

Sanchez M, Barbe F. Sleep disorders and cardiovascular disease. *Med. Clin.* 2022. 158. (2):p. 73-75. IF:3,200. Q2.

Martin M, Almansa R, Martínez I, Tedim AP, Bustamante E, Tamayo L, Aldecoa C, Gómez JM, Renedo G, Berezo JÁ, Cedeño JA, Mamolar N, García P, Herrán R, Cicuendez R, Enríquez P, Ortega A, Jorge N, Doncel C, de la Fuente A, Bustamante J, Muñoz MJ, González M, Puertas C, Más V, Vázquez M, Pérez F, Rico

J, Martin S, Motos A, Fernandez L, Eiros JM, Dominguez M, Ferrer R, Barbé F, Trapiello W, Kelvin DJ, Bermejo JF, Resino S, Torres A. Low anti-SARS-CoV-2 S antibody levels predict increased mortality and dissemination of viral components in the blood of critical COVID-19 patients. *J. Intern. Med. (GBR).* 2022. 291. (2):p. 232-240. IF:13,068. D1.

Carolina LC, Ciudin A, Sanchez E, Tinahones FJ, Barbe F, Dalmases M, Garcia M, Soto A, Gaeta AM, Pellitero S, Marti R, Hernandez C, Simo R, Lecube A. Liraglutide Improves Forced Vital Capacity in Individuals With Type 2 Diabetes: Data From the Randomized Cross-Over LIRALUNG Study. *Diabetes.* 2022. 71. (2):p. 315-320. IF:9,337. D1.

Zapater A, Benitez ID, Santamaria F, Pinilla L, Targa A, De Gonzalo D, Torres G, Mínguez O, Cortijo A, Dalmases M, Barbe F, Sanchez M. Endogenous controls and microRNA profile in female patients with obstructive sleep apnea. *Sci Rep.* 2022. 12. (1):p. 1916-1916. IF:4,996. Q2.

Molinero M, Benítez ID, González J, Gort C, Moncusí A, Rodríguez F, García MC, Torres G, Vengoechea JJ, Gómez S, Cabo R, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Bronchial Aspirate-Based Profiling Identifies MicroRNA Signatures Associated With COVID-19 and Fatal Disease in Critically Ill Patients. *Front. Med.* 2022. 8. p. 756517-756517. IF:5,058. Q2.

Motos A, Lopez A, Riera J, Ceccato A, Fernandez L, Bermejo JF, Ferrer R, de Gonzalo D, Menendez R, Perez R, Garcia D, Rodriguez A, Peñuelas O, Ángel J, Almansa R, Gabarrus A, Marin J, Ricart P, Roche F, Sancho S, Socias L, Barbe F, Torres A, CIBERESUCICOVID Project (COV20/00110 I. Higher frequency of comorbidities in fully vaccinated patients admitted to icu due to severe covid-19: a prospective, multicenter, observational study. *Eur Respir J.* 2022. 59. (2):2102275. IF:33,795. D1.

Sapiña E, Benitez ID, Torres G, Fortuna AM, Ponte P, Masa JF, Drager LF, Cabrini M, Felez M, Vazquez S, Abad J, Lee C, Garcia F, Casitas R, Mediano O, Romero S, Martinez D, Sanchez M, Barbe F, Dalmases M. Effect of CPAP treatment on BP in resistant hypertensive patients according to the BP dipping pattern and the presence of nocturnal hypertension. *Hypertens. Res.* 2022. 45. (3):p. 436-444. IF:5,528. Q2.

Ceccato A, Perez R, Motos A, Barbe F, Torres A, CiberesUCICOVID C. One-year mortality after ICU admission due to COVID-19 infection. *Intensive Care Med.* 2022. 48. (3):p. 1-3. IF:41,787. D1.

RESEARCH TEAM

Group leader

Ferran Barbé Illa

Principal investigators

Jordi de Batlle Garcia

Jessica González Gutiérrez

David de Gonzalo Calvo

Adriano Targa Dias Santos

Researchers

Albina Aldoma Balasch

Silvia Barril Farre

Anunciació Cortijo Fernández

Silvia Gómez Falguera

Esther Gracia Lavedan

Mireia Masip Jiménez-Ortiz

Ricard Pifarre

Xavier Ribas

Natalia Varvara

PhD students

Thalía Belmonte García

Maria Coronada García Hidalgo

Mario Henríquez Beltran

Marta Molinero García

Manel Pérez Pons

Maria Zuil

Management Technicians

Maricel Arbonés Tomás

Rosa Mediano San Andres

Silvia Ortega Alcántara

Research technicians

Clara Gort Paniello

Esther Gracia Laveda

Mar Malla Bañeres

Olga Mínguez Roure



2.4. Translational research in respiratory medicine group

Masa JF, Benítez ID, Sánchez MÁ, Gomez de Terreros FJ, Corral J, Romero A, Caballero C, Ordax E, Troncoso MF, González M, López S, Marin JM, Martí S, Díaz T, Chiner E, Egea C, Barca J, Vázquez FJ, Negrín MA, Martel M, Barbé F, Mokhlesi B, Riesco JA, Gallego R, González N, Gomez T, Martinez MA, Ojeda E, López D, Carrizo SJ, Gallego B, Pallero M, Romero O, Ramón MA, Arias E, Muñoz J, Senent C, Sancho JN, Navarro NB, Barrot E, Benítez JM, Sanchez J, Golpe R, Gómez MA, Gomez S, Bengoa M, Spanish N, Authors from Spanish Sleep N. Effectiveness of CPAP vs. Noninvasive Ventilation Based on Disease Severity in Obesity Hypoventilation Syndrome and Concomitant Severe Obstructive Sleep Apnea. *Arch Bronconeumol.* 2022. 58. (3):p. 228-236. IF:6,333. Q1.

Labarca G, Henriquez M, Llerena F, Erices G, Lastra J, Enos D, Castillo D, Fraga M, Lamperti L, Ormazabal V, Rizzo B, Rubilar D, Sanhueza R, Vasquez J, Villanueva C, Horta G, Sanhueza F, Melo P, Dreyse J, Jorquera J, Fernandez S, Gonzalez J, Barbe F, Nova E, CONTAC19 C. Undiagnosed sleep disorder breathing as a risk factor for critical COVID-19 and pulmonary consequences at the midterm follow-up. *Sleep Med.* 2022. 91. p. 196-204. IF:4,842. Q2.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmases M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med.* 2022. 11. (5):1413. IF:4,964. Q2.

De Gonzalo D, Marchese M, Hellemans J, Betsou F, Skov NL, Dalgaard LT, Lakkisto P, Foy C, Scherer A, Garcia ML, Devaux Y, EU (HTTPS://CARDIOR-NAEU/). Consensus guidelines for the validation of qRT-PCR assays in clinical research by the CardioRNA consortium. *Mol Ther Methods Clin Dev.* 2022. 24. p. 171-180. IF:5,849. Q2.

Appleton SL, Melaku YA, Reynolds AC, Gill TK, de Batlle J, Adams RJ. Multi-dimensional sleep health is associated with mental well-being in Australian adults. *J Sleep Res.* 2022. 31. (2):e13477. IF:5,296. Q2.

Van EM, Benitez ID, Sweetman AM, Nadal N, Chai CL, Masa JF, Gómez de Terreros FJ, Adams RJ, Sanchez M, Stocks N, Kaambwa B, McEvoy RD, Barbe F. Primary vs. Specialist Care for Obstructive Sleep Apnea: A Systematic Review and Individual Participant Data Level Meta-Analysis. *Ann. Am. Thorac. Soc.* 2022. 19. (4):p. 668-677. IF:8,785. Q1.

Masa JF, Benítez ID, Javaheri S, Mogollon MV, Sánchez MÁ, Terreros FJG, Corral J, Gallego R, Romero A, Caballero C, Ordax E, Gomez T, González M, López S, Marin JM, Martí S, Díaz T, Chiner E, Egea C, Barca J, Barbé F, Mokhlesi B, Spanish N. Risk factors associated with pulmonary hypertension in obesity hypoventilation syndrome. *J Clin Sleep Med.* 2022. 18. (4):p. 983-992. IF:4,324. Q2.

Alberti EJ, Targa A, Pichorim SF, Brawerman A. Ludic Table: a comparative study between playful rehabilitation and kinesiotherapy in restricting upper limb movements in individuals with stroke. *Med Biol Eng Comput.* 2022. 60. (4):p. 1187-1198. IF:3,079. Q2.

Torres A, Motos A, Ceccato A, Bermejo J, de Gonzalo D, Pérez R, Barroso M, Pascual IZ, Gonzalez J, Fernández L, Ferrer R, Riera J, García D, Peñuelas O, Lorente JÁ, Almansa R, Menéndez R, Kiarostami K, Canseco J, Villar RA, Añón JM, Mariño AB, Barberà C, Barberán J, Ortiz AB, Boado MV, Bustamante E, Caballero J, Cantón ML, Pérez CC, Carbonell N, Catalán M, de Frutos R, Franco N, Galbán C, Gumucio VD, Torre MDC, Díaz E, Estella Á, Gallego E, Garmendia JLG, Gómez JM, Huerta A, García RNJ, Loza A, Marin J, Delgado MCM, Gándara AM, Varela IM, Messa JL, Albaiceta GM, Nieto M, Novo MA, Peñasco Y, Pérez F, Pozo JC, Ricart P, Sagredo V, Sánchez Á, Chinesta SS, Serra M, Socias L, Solé J, Suárez F, Lomas LT, Trenado J, Úbeda A, Valdivia LJ, Vidal P, Barbé F, CIBERESUCICOVID Project (COV20/00110 I. Methodology of a Large Multicenter Observational Study of Patients with COVID-19 in Spanish Intensive Care Units. *Arch Bronconeumol.* 2022. 58 Suppl 1. p. 22-31. IF:6,333. Q1.

Torres F, Dakterzada F, Galván L, Buti M, Besanson G, Grill E, Buil R, de Batlle J, Piñol G. Benzodiazepine and Z-drug use and the risk of developing dementia. *Int J Neuropsychopharmacol.* 2022. 25. (4):p. 261-268. IF:5,678. Q1.

Torres F, de Batlle J, Galván L, Buti M, Barbé F, Piñol G. Evolution of the consumption trend of proton pump inhibitors in the Lleida Health Region between 2002 and 2015. *BMC PUBLIC HEALTH.* 2022. 22. (1):p. 818-818. IF:4,135. Q2.

Henriquez M, Labarca G, Cigarroa I, Enos D, Lastra J, Nova E, Targa A, Barbe F. Sleep health and the circadian rest-activity pattern four months after COVID-19. *J. Bras. Pneumol.* 2022. 48. (3):e20210398. IF:2,800. Q4.

Garcia MC, Gonzalez J, Benitez ID, Carmona P, Santistevé S, Moncusi A, Gort C, Rodriguez F, Molinero M, Perez M, Torres G, Caballero J, Barbera C, Tedim AP, Almansa R, Ceccato A, Fernandez L, Ferrer R, Garcia D, Menendez R, Mo-

Anna Moncusi Moix
Fatima Rodriguez Jara
Carlos Rodriguez Muñoz
Rafaela Vaca Molina

External contributor
M. Jesús Muniesa Royo

Laboratories

Laboratory ground floor. Lab b0.3
973 705 372

Email

febarbe.lleida.ics@gencat.cat



2.4. Translational research in respiratory medicine group

tos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, CIBER-RESUCICOVID Project (COV20/00110 I. Proteomic profiling of lung diffusion impairment in the recovery stage of SARS-CoV-2-induced ARDS. *Clin. Transl. Med.* 2022. 12. (5):e838. IF:8,554. Q1.

Benitez ID, Moncusí A, Vaca R, Gort C, Minguez O, Santistevé S, Carmona P, Torres G, Fagotti J, Labarca G, Torres A, Gonzalez J, De Gonzalo D, Barbe F, Targa A. Sleep and Circadian Health of Critical COVID-19 Survivors 3 Months After Hospital Discharge. *Crit. Care Med.* 2022. 50. (6):p. 945-954. IF:9,296. Q1.

Labarca G, Henríquez M, Lamperti L, Nova E, Sanhueza S, Cabrera C, Quiroga R, Antilef B, Ormazabal V, Zúñiga F, Castillo D, Horta G, Enos D, Lastra J, Gonzalez J, Targa A, Barbe F. Impact of Obstructive Sleep Apnea (OSA) in COVID-19 Survivors, Symptoms Changes Between 4-Months and 1 Year After the COVID-19 Infection. *Front. Med.* 2022. 9. p. 884218-884218. IF:5,058. Q2.

Marin M, Sanz D, Santamaria F, Benitez I, Simon AL, Forner M, Cubero P, Gil A, Sanchez M, Barbe F, Marin JM. Soluble RAGE in COPD, with or without coexisting obstructive sleep apnoea. *Respir Res.* 2022. 23. (1):p. 163-163. IF:7,162. Q1.

Zapater A, Solelhac G, Sanchez A, Gracia E, Benitez ID, Torres G, De Batlle J, Haba J, Berger M, Abad J, Duran J, Urrutia A, Mediano O, Masdeu MJ, Ordax E, Masa JF, De la Peña M, Mayos M, Coloma R, Montserrat JM, Chiner E, Minguez O, Pascual L, Cortijo A, Martinez D, Dalmases M, Lee CH, McEvoy RD, Barbe F, Heinzer R, Sanchez M, Spanish N. Respiratory Polygraphy Patterns and Risk of Recurrent Cardiovascular Events in Patients With Acute Coronary Syndrome. *Front. Med.* 2022. 9. p. 870906-870906. IF:5,058. Q2.

Craig S, Pepin JL, Randerath W, Causse C, Verbraecken J, Asin J, Barbe F, Bonsignore MR. Investigation and management of residual sleepiness in CPAP-treated patients with obstructive sleep apnoea: the European view. *Eur. Respir. Rev.* 2022. 31. (164):210230. IF:9,553. Q1.

Benítez ID, de Batlle J, Torres G, González J, de Gonzalo D, Targa A, Gort C, Moncusí A, Ceccato A, Fernández L, Ferrer R, García D, Menéndez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Peñasco Y, Ricart P, Martín MC, Aguilera L, Rodríguez A, Boado MV, Suarez F, Pozo JC, Solé J, Nieto M, Novo MA, Barberán J, Amaya R, Garnacho J, García JL, Gómez JM, Lorente JÁ, Blandino A, Tamayo L, López E, Úbeda A, Catalán M, Sánchez A, Martínez I, Jorge RN, Franco N, Gumucio VD, Huerta A, Bustamante E, Valdivia LJ, Caballero J, Gallego E, Martínez de la Gándara A, Castellanos Á, Trenado J, Marin J, Albaiceta GM, de la Torre MDC, Loza A, Vidal P, Lopez J, Añón JM, Carbajales

C, Sagredo V, Bofill N, Carbonell N, Socías L, Barberà C, Estella A, Valledor M, Diaz E, López A, Torres A, Barbé F, CIBERESUCICOVID Project (COV20/00110 I. Prognostic implications of comorbidity patterns in critically ill COVID-19 patients: A multicenter, observational study. *Lancet Reg Health Eur.* 2022. 18. p. 100422-100422.

Torres A, Motos A, Cilloniz C, Ceccato A, Fernandez L, Gabarrus A, Bermejo J, Ferrer R, Riera J, Perez R, Garcia D, Peñuelas O, Lorente JA, de Gonzalo D, Almansa R, Menendez R, Palomeque A, Villar RA, Añón JM, Balan A, Barbera C, Barberan J, Blandino A, Boado MV, Bustamante E, Caballero J, Canton ML, Carbajales C, Carbonell N, Catalan M, de Frutos R, Franco N, Galban C, Gumucio VD, de la Torre MDC, Diaz E, Estella A, Gallego E, García JL, Gomez JM, Huerta A, García RNJ, Loza A, Marin J, Martín MC, Martínez de la Gándara A, Martínez I, López J, Albaiceta GM, Nieto M, Novo MA, Peñasco Y, Perez F, Pozo JC, Ricart P, Sagredo V, Sanchez A, Sancho S, Serra M, Socías L, Sole J, Suarez F, Tamayo L, Trenado J, Ubeda A, Valdivia LJ, Vidal P, Barbe F, CIBER-RESUCICOVID I. Major candidate variables to guide personalised treatment with steroids in critically ill patients with COVID-19: CIBERESUCICOVID study. *Intensive Care Med.* 2022. 48. (7):p. 1-15. IF:41,787. D1.

González J, Zuñil M, Benítez ID, de Gonzalo D, Aguilar M, Santistevé S, Vaca R, Minguez O, Seck F, Torres G, de Batlle J, Gómez S, Barril S, Moncusí A, Monge A, Gort C, Ferrer R, Ceccato A, Fernández L, Motos A, Riera J, Menéndez R, García D, Peñuelas O, Labarca G, Caballero J, Barberà C, Torres A, Barbé F. One Year Overview and Follow-Up in a Post-COVID Consultation of Critically Ill Patients. *Front. Med.* 2022. 9. p. 897990-897990. IF:5,058. Q2.

Molinero M, Gómez S, Benítez ID, Vengoechea JJ, González J, Polanco D, Gort C, Moncusí A, García MC, Perez M, Belmonte T, Torres G, Caballero J, Barberà C, Ayestarán JI, Socías L, Ceccato A, Fernández L, Ferrer R, García D, Lorente JÁ, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Multiplex protein profiling of bronchial aspirates reveals disease-, mortality- and respiratory sequelae-associated signatures in critically ill patients with ARDS secondary to SARS-CoV-2 infection. *Front. Immunol.* 2022. 13. p. 942443-942443. IF:8,786. Q1.

De Gonzalo D, Sopic M, Devaux Y, EU C. Methodological considerations for circulating long noncoding RNA quantification. *Trends Mol. Med.* 2022. 28. (8):p. 616-618. IF:15,272. D1.



2.4. Translational research in respiratory medicine group

González J, Carmona P, Gracia E, Benítez ID, Antón A, Balaña A, Díaz SB, Bernadich Ò, Córdoba A, Embid C, Espallargues M, Luján M, Martí S, Ortega MP, Tárrega J, Barbé F, Escarrabill J, CatCoVer G. Cluster Analysis of Home Mechanical Ventilation in COPD Patients: A Picture of the Real World and Its Impact on Mortality. *Arch Bronconeumol.* 2022. 58. (9):p. 642-648. IF:6,333. Q1.

Rodrigo A, Alonso A, Barril S, Farinas O, Gueell E, Pascual A, Castillo D. Impact of Early Referral to Palliative Care in Patients with Interstitial Lung Disease. *J. Palliat. Med.* 2022. 25. (9):p. 1422-1425. IF:2,947. Q3.

Sánchez M, Gracia E, Benitez ID, Zapater A, Torres G, Sánchez A, Aldoma A, de Batlle J, Targa A, Abad J, Duran J, Urrutia A, Mediano O, Masdeu MJ, Ordax E, Masa JF, De la Peña M, Mayos M, Coloma R, Montserrat JM, Chiner E, Minguez O, Pascual L, Cortijo A, Martínez D, Dalmases M, Lee CH, McEvoy RD, Barbé F, Spanish N. Long-term Effect of OSA and CPAP Treatment on Blood Pressure in Patients with Acute Coronary Syndrome. *Ann. Am. Thorac. Soc.* 2022. 19. (10):p. 1750-1759. IF:8,785. Q1.

Almansa R, Eiros JM, de Gonzalo D, Postigo T, Ortega A, Lopez R, Moncusi A, Gort C, Dominguez M, Fuente A, Gonzalez L, Luis T, Garcia N, Tedim AP, Rodriguez F, Jorge N, Gonzalez J, Torres G, Gutierrez ON, Villegas MJ, Campo S, Ayllon E, Albi TR, de Frutos J, Domingo AA, Abadia J, Barquero JG, Trapiello W, Garcia LJ, Inglada L, Campo FD, Bermejo JF, Barbe F, Torres A. N-antigenemia detection by a rapid lateral flow test predicts 90-day mortality in COVID-19: a prospective cohort study. *Clin. Microbiol. Infect.* 2022. 28. (10):p. 13911-13915. IF:13,310. D1.

Garcia MC, Pelaez R, Gonzalez J, Santistevé S, Benitez ID, Molinero M, Perez M, Belmonte T, Torres G, Moncusi A, Gort C, Aguila M, Seck F, Carmona P, Caballero J, Barbera C, Ceccato A, Fernandez L, Ferrer R, Garcia D, Lorente JA, Menendez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, Larrayoz IM. Genome-wide transcriptional profiling of pulmonary functional sequelae in ARDS- secondary to SARS-CoV-2 infection. *Biomed. Pharmacother.* 2022. 154. p. 113617-113617. IF:7,419. D1.

Zapater A, Barbe F, Sanchez M. Micro-RNA in obstructive sleep apnoea: biomarker of cardiovascular outcome?. *Curr. Opin. Pulm. Med.* 2022. 28. (6):p. 559-570. IF:2,868. Q4.

Dakterzada F, Benitez ID, Targa A, Carnes A, Pujol M, Jove M, Minguez O, Vaca R, Sanchez M, Barbe F, Pamplona R, Piñol G. Blood-based lipidomic signature of severe obstructive sleep apnoea in Alzheimer's disease. *Alzheimers Res. Ther.* 2022. 14. (1):p. 163-163. IF:8,823. D1.

Garcia MC, González J, Benitez ID, Carmona P, Santistevé S, Pérez M, Moncusi A, Gort C, Rodríguez F, Molinero M, Belmonte T, Torres G, Labarca G, Nova E, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D, CIBERESUCICOVID Project (COV20/00110 I. Identification of circulating microRNA profiles associated with pulmonary function and radiologic features in survivors of SARS-CoV-2-induced ARDS. *Emerg. Microbes Infect.* 2022. 11. (1):p. 1537-1549. IF:19,568. D1.

Targa A, Benitez ID, Gonzalez J, Torres G, Santistevé S, Vaca R, Minguez O, Aguila M, Carmona P, Moncusi A, Gort C, Labarca G, Caballero J, Barbera C, Torres A, de Gonzalo D, Barbe F. Sleep and circadian health 6 months after critical COVID-19 disease. *Respirology.* 2022. 27. (12):p. 1083-1088. IF:6,175. Q1.

Kretzschmar GC, Targa A, Soares SC, dos PI, Rodrigues LS, Macedo DA, Pinto LFR, Lima MMS, Boldt A. Folic Acid and Vitamin B12 Prevent Deleterious Effects of Rotenone on Object Novelty Recognition Memory and Kynu Expression in an Animal Model of Parkinson's Disease. *Genes.* 2022. 13. (12):2397. IF:4,141. Q2.

Vanhaverbeke M, Attard R, Bartekova M, Ben S, Brandenburger T, de Gonzalo D, Emanuelli C, Farrugia R, Grillari J, Hackl M, Kalocayova B, Martelli F, Scholz M, Wetzinger SB, Devaux Y, EU C. Peripheral blood RNA biomarkers for cardiovascular disease from bench to bedside: A Position Paper from the EU-CardioRNA COST Action CA17129. *Cardiovasc Res.* 2022. 118. (16):p. 3183-3197. IF:13,081. D1.



2.4. Translational research in respiratory medicine group

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Barbé Illa, Ferran i Torres Cortada, Gerard	Instituto de Salud Carlos III (ISCIII)	Impacto del Manejo de los Trastornos Respiratorios Durante el Sueño en el control de la hipertensión sistémica: Proyecto METASLEEP	2.344.100
Barbé Illa, Ferran i Sánchez De la Torre, Manuel	Diputació de Lleida	Normotensive Patients with Sleep Apnea: Differential Impact of CPAP Treatment According to the Circadian Blood Pressure Pattern. A Randomized Controlled Trial. The MOISES study.	50.000
Barbé Illa, Ferran	Institut català de la salut ICS	Premi a la trajectoria investigadora als hospitals de l'ICS 2022	5.000
De Gonzalo Calvo, David i Porcel Perez, José Manuel	Diputació de Lleida	Construcción de un algoritmo diagnóstico y pronóstico del derrame pleural maligno secundario a cáncer de pulmón mediante firmas de RNA no codificante y Machine Learning	50.000
Torres Cortada, Gerard i Barbé Illa, Ferran	Instituto de Salud Carlos III (ISCIII)	Pacientes Normotensos con Apnea del Sueño: Impacto Diferencial del Tratamiento con CPAP según el Patrón Circadiano de Presión Arterial. Ensayo Clínico Aleatorizado. Estudio MOISÉS	147.015

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Lecube Torelló, Albert i Targa, Adriano	Diputació de Lleida	Comprendiendo mejor la interacción entre los mecanismos etiopatogénicos de la obesidad: Hacia un modelo predictivo de base genética	50.000
De Gonzalo Calvo, David	Fundacio La Marato de TV3	A systems biology approach to understand COVID-19 pathophysiology and predict its outcome (SYSTEMS-BIO COVID) (2021-046-1)	160.007
De Batlle Garcia, Jordi	Instituto de Salud Carlos III (ISCIII)	Big Data para la predicción del riesgo de complicaciones durante y después del ingreso en pacientes crónicos con monitorización intensiva en las primeras 24h de ingreso	121.000
De Gonzalo Calvo, David	Instituto de Salud Carlos III (ISCIII)	Transcriptómica y machine learning para asistir en la toma de decisiones clínicas en pacientes con sospecha de apnea obstructiva del sueño	147.620
Barbé Illa, Ferran	Instituto de Salud Carlos III (ISCIII)	Clinical Impact of Obstructive Sleep Apnea Syndrome in Patients with Resistant Hypertension: SARAH Study	160.022
De Batlle Garcia, Jordi	Instituto de Salud Carlos III (ISCIII)	Análisis con técnicas Big Data de toda la población diagnosticada de Síndrome de Apneas-Hipoapneas del Sueño en tratamiento con CPAP en Cataluña	37.510



2.5. Research group of health care (GReCS)

The group is formed mainly by nurses and physiotherapists both from clinical practice (Santa Maria University Hospital, Arnau de Vilanova University Hospital and Primary Care) and teaching (Faculty of Nursing and Physiotherapy of University of Lleida). His main areas of research are active and healthy aging, Social Determinants of Health and Health Services. GReCS participates in several projects in Spain, Europe and worldwide.

Thanks to its potential, the GReCS has established a stable collaboration with the Nursing and Healthcare Research Unit (Investén-isciii), focused on the Best Practices Spotlight Organizations (BPSO), funded by the Ministry of Health and Long-Term Care of the Government of Ontario and the Instituto de Salud Carlos III, under the Ministry of Economy and Finance of Spain. As part of the Spanish Collaborating Center of the Joanna Briggs Institute, the group is involved in the implementation of Evidence Based Nursing Practice in a number of clinical settings, through an agreement signed between the Instituto de Salud Carlos III (Unidad de Investigación en Enfermería y Asistencia Sanitaria: Investén-isciii) and the Spanish Regional Health Systems.

Publications

McGilton KS, Stewart S, Bethell J, Chu CH, Mateos JT, Pastells R, Blanco J, Rodriguez M, Escrig A, Gea M. Factors Influencing Nurse Assistants' Job Satisfaction in Nursing Homes in Canada and Spain: A Comparison of Two Cross-Sectional Observational Studies. *J. Appl. Gerontol.* 2022. 41. (1):p. 235-244. IF:2,645. Q3.

Garcia M, Briones E, Otero L, Goicolea I, Vives C. Social workers' perspectives on barriers and facilitators in responding to intimate partner violence in primary health care in Spain. *Health Soc. Care Community.* 2022. 30. (1):p. 102-113. IF:2,395. Q2.

Sufrate T, Juárez R, Ramírez CA, Rivera F, Garrote ME, Roland PP, Gea M, Del Pozo P, Gea V, Angulo B, Santolalla I. Nursing interventions of choice for the prevention and treatment of suicidal behaviour: The umbrella review protocol. *Nurs Open.* 2022. 9. (1):p. 845-850. IF:1,942. Q3.

Briones E, Andres S, Escrig A, Gonzalez JA, Jiménez MDM, Julia R, Loezar M, Tomás J, Pastells R, Pastor MDM, Pedreño A, Perez I. Trabajo agrícola y migración en España: precariedad sociolaboral y salud (Proyecto AGROMISALUD). *Gaceta Sanit.* 2022. 36. (1):p. 74-77. IF:2,479. Q3.

Laza C, Hernández MJ, Carles M, Pérez MJ, Cruz I, Rué M, DECIDO G. Barriers and Facilitators to the Implementation of a Personalized Breast Cancer Screening Program: Views of Spanish Health Professionals. *Int J Environ Res Public Health.* 2022. 19. (3):1406. IF:4,614. Q1.

Garcia E, Soler J, Blanco J, Rubi F, Masbernat M, Valenzuela F. Misbeliefs about non-specific low back pain and attitudes towards treatment by primary care providers in Spain: a qualitative study. *BMC Prim. Care.* 2022. 23. (1):p. 9-9.

Llubes L, Sanromà M, Torné A, Carillo E, Garcia J, Roca J. Emotional experience of the diagnostic process of a rare disease and the perception of support systems: A scoping review. *J. Clin. Nurs.* 2022. 31. (1-2):p. 20-31. IF:4,423. D1.

Plana M, Blanch À, Sole S. The Role of Mindfulness in Business Administration (B.A.) University Students' Career Prospects and Concerns about the Future. *Int J Environ Res Public Health.* 2022. 19. (3):1376. IF:4,614. Q1.

Tersa C, Bravo C, Bellon F, Pastells R, Rubinat E, Rubi F. Effectiveness of workplace exercise interventions in the treatment of musculoskeletal disorders in office workers: a systematic review. *Bmj Open.* 2022. 12. (1):e054288. IF:3,006. Q2.

Laza C, Codern N, Cardona À, Hernandez MJ, Perez MJ, Carles M, Rue M, DECIDO G. Views of health professionals on risk-based breast cancer screening and its implementation in the Spanish National Health System: A qualitative discussion group study. *PLoS One.* 2022. 17. (2):e0263788. IF:3,752. Q2.

Garcia J, Masot O, Gros S, Botigué T, Roca J. Practical view of the topical treatment of peripheral venous catheter-related phlebitis: A scoping review. *J. Clin. Nurs.* 2022. 31. (7-8):p. 783-797. IF:4,423. D1.

Selva L, Ramos A, Mercade P, Espart A. Evolution of Scientific Production on Health Literacy and Health Education-A Bibliometric Analysis. *Int J Environ Res Public Health.* 2022. 19. (7):4356. IF:4,614. Q1.

Gros S, Canet O, Contreras W, Garcia J, Torralbas J, Roca J. Translation, Adaptation, and Psychometric Validation of the Spanish Version of the Attitudes towards Research and Development within Nursing Questionnaire. *Int J Environ Res Public Health.* 2022. 19. (8):4623. IF:4,614. Q1.

Briones E, Otero L, Gea M, De Fuentes S, Garcia M, Vives C, Maquibar A. A qualitative content analysis of nurses' perceptions about readiness to manage intimate partner violence. *J. Adv. Nurs.* 2022. 78. (5):p. 1448-1460. IF:3,057. Q1.

Valenzuela F, Pàmies J, Garcia E, Martinez O, Climent C, Gea M, Virgili J, Rubi F, Garcia M, Blanco J. Use of a gamified website to increase pain neurophysiology knowledge and improve satisfaction and motivation among students studying for a degree in physiotherapy: a quasi-experimental study. *BMC Med. Educ.* 2022. 22. (1):p. 389-389. IF:3,263. Q2.

Sanz B, Briones E, Otero L, Fernandez C, Vives C. Spanish Intimate Partner Violence Survivors Help-Seeking Strategies Across the Life Span. *J. Interpers. Violence.* 2022. 37. (11-12):p. 8651-8669. IF:2,621. Q2.

RESEARCH TEAM

Group leaders

Joan Blanco Blanco
Esther Rubinat Arnaldo

Principal investigators

Erica Tula Briones Vozmediano
Helena Fernandez Lago
Jose Tomas Mateos Garcia
Francesc Valenzuela Pascual

Researchers

Jordi Balleste Torralba
Eva Barallat Gimeno
Teresa Botigue Satorra
Cristina Bravo Navarro
Miquel Àngel Calderó Solé
M^a Angels Costa Menen
Miguel Angel Escobar Bravo
Anna Espart Herrero
Maria Ferrer Gil
Edith Garcia Solanes
Montserrat Gea Sanchez
Minerva Granado Casas
Josep M Gutierrez Vilaplana
Sandra Hervas Marco
Ana Lavedan Santamaria
Luis Mambona Giron
Jose Maria Martinez Barriuso
Jordi Martinez Soldevila
Maria Masbernat Almenara
Olga Masot Ariño
Jessica Miranda Iglesias
Carmen Nuin Orrio
Alexandra Pascual Garcia
Judith Roca Llobet
Francesc Josep Rubi Carnacea
Merce Serra Miralles
Silvia Solé Cases
Lorena Lourdes Tejero Vidal
Joan Enric Torra Bou
M^a Jesus Torrelles I Pijuan



2.5. Research group of health care (GReCS)

Mateos JT, Fernandez J, Marcos J, Alvarez C, Bambra C, Popay J, Baral K, Musolino C, Baum F. Gender Equality and the Global Gender Gap in Life Expectancy: An Exploratory Analysis of 152 Countries. *Int. J. Health Policy Manag.* 2022. 11. (6):p. 740-746. IF:4,967. Q1.

Santamaria AL, Masot O, Velez OC, Botigue T, Sanchez TC, Roca J. Diagnostic Concordance between the Visual Analogue Anxiety Scale (VAS-A) and the State-Trait Anxiety Inventory (STAI) in Nursing Students during the COVID-19 Pandemic. *Int J Environ Res Public Health.* 2022. 19. (12):7053. IF:4,614. Q1.

Acea L, Pastor MDM, Rubinat E, Bellon F, Blanco J, Gea M, Briones E. Job expectations and intolerance to uncertainty of nursing students: Results from a multicentre, mixed-methods study in Spain. *Nurse Educ. Pract.* 2022. 62. p. 103337-103337. IF:3,430. D1.

Masot O, Cox A, Mold F, Sund M, Tingström P, Boersema GC, Botigue T, Daltrey J, Hughes K, Mayhorn CB, Montgomery A, Mullan J, Carey N. Decision support-tools for early detection of infection in older people (aged > 65 years): a scoping review. *BMC Geriatr.* 2022. 22. (1):p. 552-552. IF:4,070. Q2.

Blanco J, Albornos L, Costa MÀ, García E, Rubinat E, Martínez J, Moreno MT, Bays AB, Gea M, Otago Project Working G. Prevalence of falls in noninstitutionalized people aged 65-80 and associations with sex and functional tests: A multicenter observational study. *Res Nurs Health.* 2022. 45. (4):p. 433-445. IF:2,238. Q2.

Laza C, Martínez M, Forné C, Vilaplana J, Cruz I, Sánchez I, Reñé M, Cazorla C, Hernández M, Galindo G, Llorens M, Pons A, Rué M, DECIDO G. Feasibility and Acceptability of Personalized Breast Cancer Screening (DECIDO Study): A Single-Arm Proof-of-Concept Trial. *Int J Environ Res Public Health.* 2022. 19. (16):10426. IF:4,614. Q1.

Loezar M, Briones E, Gea M, Otero L. Percepción de la atención sanitaria en la primera experiencia de maternidad y paternidad. *Gaceta Sanit.* 2022. 36. (5):p. 425-432. IF:2,479. Q3.

Roca J, Gros S, Canet O, Torralbas J, Tort G, Postic T, Martínez L. Service Learning in the Nursing Bachelor Thesis: A Mixed-Methods Study. *Int J Environ Res Public Health.* 2022. 19. (19):IF:4,614. Q1.

Climont C, Valenzuela F, Martinez O, Blanco J, Rubi F, Garcia E, Soler J, Barrallat E, Gea M. Cognitive behavioral therapy for insomnia (CBT-i) in patients with fibromyalgia: a systematic review and meta-analysis. *Disabil. Rehabil.* 2022. 44. (20):p. 1-14. IF:2,439. Q2.

Laza C, Gea M, Briones E. Qualitative evaluation of a support group for women with children with Zika congenital syndrome in Southern Colombia. *Disabil. Rehabil.* 2022. 44. (20):p. 1-8. IF:2,439. Q2.

Bellon F, Mateos JT, Pastells R, Espigares G, Gea M, Rubinat E. The role of nurses in euthanasia: A scoping review. *Int J Nurs Stud.* 2022. 134. p. 104286-104286. IF:6,612. D1.

Castelblanco E, Hernandez M, Alonso N, Ribes A, Real J, Granado M, Rossell J, Rojo MI, Dusso AS, Julve J, Mauricio D. Association of a-klotho with subclinical carotid atherosclerosis in subjects with type 1 diabetes mellitus. *Cardiovasc. Diabetol.* 2022. 21. (1):p. 207-207. IF:8,949. Q1.

Laza C, Briones E, Gea M. Caring for children with Congenital Zika Syndrome: The unmet needs of mothers in Southern Colombia. *Glob Public Health.* 2022. 17. (11):p. 1-12. IF:3,356. Q2.

Sancllemente M, Galbany P, Palomar X, Rubinat E. Defining competencies for nurse anaesthetists: A Delphi study. *J. Adv. Nurs.* 2022. 78. (11):p. 3696-3709. IF:3,057. Q1.

Goicolea I, Vives C, Castellanos E, Briones E, Sanz B. Disclosing Gender-Based Violence: A Qualitative Analysis of Professionals' and Women's Perspectives through a Discursive Approach. *Int J Environ Res Public Health.* 2022. 19. (22):14683. IF:4,614. Q1.

Castelblanco E, Granado M, Hernandez M, Pinyol M, Correig E, Julve J, Rojo MI, Alonso N, Avogaro A, Ortega E, Mauricio D. Diabetic retinopathy predicts cardiovascular disease independently of subclinical atherosclerosis in individuals with type 2 diabetes: A prospective cohort study. *Front. Cardiovasc. Med.* 2022. 9. p. 945421-945421. IF:5,846. Q2.

El Arab RA, Urbanavice R, Jakavonyte A, Skvarcevskaja M, Austys D, Mateos JT, Briones E, Rubinat E, Istomina N. Cultural competency among Lithuanian nurses and preparedness to work with intercultural immigrants: A quantitative study protocol. *Front Public Health.* 2022. 10. p. 1025508-1025508. IF:6,461. D1.

Urrego HN, Rodriguez LA, Pastells R, Mateos JT, Gea M, Escrig A, Briones E. The Health of Migrant Agricultural Workers in Europe: A Scoping Review. *J. Immigr. Minor. Health.* 2022. 24. (6):p. 1580-1589. IF:2,015. Q4.

Franch J, Granado M, Mata M, Ortega E, Vlachos B, Mauricio D. Determinants of response to the glucagon-like peptide-1 receptor agonists in a type 2 diabetes population in the real-world. *Prim Care Diabetes.* 2022. 16. (6):p. 810-817.

Bellon F, Stremmler R, Rubinat E, Padilla JM, Casado E, Sánchez M, Gea M, Martín Y, Moreno T, Abad E. Sleep quality among inpatients of Spanish public hospitals. *Sci Rep.* 2022. 12. (1):p. 21989-21989. IF:4,996. Q2.

PhD students

Rabie Adel Abdel-kareem el Arab
Filip Bellon
Pere Bosch Barcelo
Celmira Laza Vasquez
Laia Llubes Arrià
Ester Garcia Martinez
Oriol Martinez Navarro
Luis Alejandro Rodriguez Guerrero
Francisco Jose Verdejo Amengual

Research technician

Yesmina el Khattabi Ofkir

Laboratories

Biomedicine II -1 floor
973 702 457

Email

joan.blanco@udl.cat
esther.rubinat@udl.cat



2.5. Research group of health care (GReCS)

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Mateos Garcia, Jose Tomas	Departament de Salut - Generalitat de Catalunya	Projecte campanya agrària	149.795
Tula Briones Vozmediano, Erica	Instituto de Salud Carlos III (ISCIII)	Trabajo agrícola y migración en España: Precariedad Sociolaboral y Salud (PSLyS)	51.425
Fernandez Lago, Helena	Instituto de Salud Carlos III (ISCIII)	Efectos de la combinación del tapiz rodante en un entorno virtual gamificado con la estimulación cerebral no invasiva en la enfermedad de Parkinson: ensayo clínico aleatorizado	62.920
Valenzuela Pascual, Francesc	European Commission	MOORE4MEDICAL - Project Consortium Agreement for Research, Development and Innovation Actions	121.056
Rubinat Arnaldo, Esther	European Commission	NextPerception - Next generation smart perception sensors and distributed intelligence for proactive human monitoring in health, wellbeing, and automotive systems	8.801
Rubinat Arnaldo, Esther	Instituto de Salud Carlos III (ISCIII)	La salud circadiana en pacientes ingresados en unidades de cuidados intensivos y de hospitalización (CHRONOHOSPI)	33.880



2.6. Precision medicine in chronic diseases group

The Group of precision medicine in chronic diseases is a multidisciplinary group that integrates different professional profiles for development of translational research. Our main research lines are focused on the personalized management of patients with chronic diseases. The aim of the group is to understand the physiopathological components of the chronic diseases, in order to; i) achieve an accurate classification of the patients, ii) to develop non-pharmacological strategies and precision medicine tools to promote disease prevention, treatment and management, iii) contribute of sustainability of health and care systems in chronic diseases, iv) to create mHealth platforms for clinical monitoring, telemedicine and personalized follow-up.

The main line of investigation combines basic, clinical and translational research:

- Animal models of intermittent hypoxia.
- Molecular profile of cardiovascular risk in patients with Obstructive Sleep Apnea.
- Precision Medicine in Obstructive Sleep Apnea

Publications

Pinilla L, Benítez ID, Santamaria F, Targa A, Moncusi A, Dalmases M, Mínguez O, Aguilà M, Jové M, Sol J, Pamplona R, Barbé F, Sánchez M. Plasma profiling reveals a blood-based metabolic fingerprint of obstructive sleep apnea. *Bio-med. Pharmacother.* 2022. 145. p. 112425-112425. IF:7,419. D1.

Gonzalez J, Benitez ID, De Gonzalo D, Torres G, de Batlle J, Gomez S, Moncusi A, Carmona P, Santistevé S, Monge A, Gort C, Zuñil M, Cabo R, Manzano C, Vengoechea JJ, Vaca R, Mínguez O, Aguilar M, Ferrer R, Ceccato A, Fernandez L, Motos A, Riera J, Menendez R, Garcia D, Peñuelas O, Labarca G, Caballero J, Barbera C, Torres A, Barbe F, CIBERESUCICOVID Project (COV20/00110 I. Impact of time to intubation on mortality and pulmonary sequelae in critically ill patients with COVID-19: a prospective cohort study. *Crit Care.* 2022. 26. (1):p. 18-18. IF:19,334. Q1.

Sanchez M, Barbe F. Sleep disorders and cardiovascular disease. *Med. Clin.* 2022. 158. (2):p. 73-75. IF:3,200. Q2.

Carolina LC, Ciudin A, Sanchez E, Tinahones FJ, Barbe F, Dalmases M, Garcia M, Soto A, Gaeta AM, Pellitero S, Marti R, Hernandez C, Simo R, Lecube A. Liraglutide Improves Forced Vital Capacity in Individuals With Type 2 Diabetes: Data From the Randomized Cross-Over LIRALUNG Study. *Diabetes.* 2022. 71. (2):p. 315-320. IF:9,337. D1.

Zapater A, Benitez ID, Santamaria F, Pinilla L, Targa A, De Gonzalo D, Torres G, Mínguez O, Cortijo A, Dalmases M, Barbe F, Sanchez M. Endogenous controls and microRNA profile in female patients with obstructive sleep apnea. *Sci Rep.* 2022. 12. (1):p. 1916-1916. IF:4,996. Q2.

Molinero M, Benítez ID, González J, Gort C, Moncusi A, Rodríguez F, García MC, Torres G, Vengoechea JJ, Gómez S, Cabo R, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Bronchial Aspirate-Based Profiling Identifies MicroRNA Signatures Associated With COVID-19 and Fatal Disease in Critically Ill Patients. *Front. Med.* 2022. 8. p. 756517-756517. IF:5,058. Q2.

Sapiña E, Benitez ID, Torres G, Fortuna AM, Ponte P, Masa JF, Drager LF, Cabrini M, Felez M, Vazquez S, Abad J, Lee C, Garcia F, Casitas R, Mediano O, Romero S, Martinez D, Sanchez M, Barbe F, Dalmases M. Effect of CPAP treatment on BP in resistant hypertensive patients according to the BP dipping pattern and the presence of nocturnal hypertension. *Hypertens. Res.* 2022. 45. (3):p. 436-444. IF:5,528. Q2.

Masa JF, Benítez ID, Sánchez MÁ, Gomez de Terreros FJ, Corral J, Romero A, Caballero C, Ordax E, Troncoso MF, González M, López S, Marin JM, Martí S, Díaz T, Chiner E, Egea C, Barca J, Vázquez FJ, Negrín MA, Martel M, Barbé F, Mokhlesi B, Riesco JA, Gallego R, González N, Gomez T, Martinez MA, Ojeda E, López D, Carrizo SJ, Gallego B, Pallero M, Romero O, Ramón MA, Arias E, Muñoz J, Senent C, Sancho JN, Navarro NB, Barrot E, Benítez JM, Sanchez J, Golpe R, Gómez MA, Gomez S, Bengoa M, Spanish N, Authors from Spanish Sleep N. Effectiveness of CPAP vs. Noninvasive Ventilation Based on Disease Severity in Obesity Hypoventilation Syndrome and Concomitant Severe Obstructive Sleep Apnea. *Arch Bronconeumol.* 2022. 58. (3):p. 228-236. IF:6,333. Q1.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmases M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med.* 2022. 11. (5):1413. IF:4,964. Q2.

Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. *Nutrients.* 2022. 14. (5):1102. IF:6,706. Q1.

RESEARCH TEAM

Group leader

Manuel Sánchez de la Torre

Principal investigator

Gerard Torres Cortada

Researchers

Ivan Benitez Iglesias
Oscar Sacristan Garcia

PhD students

Lucía Pinilla Latorre
Andrea Zapater Matute

External contributor

Mireia Dalmases Cleries

Laboratories

Biomedicine 3rd Floor
973 702 216

Email

manuel.sanchez@udl.cat



2.6. Precision medicine in chronic diseases group

Herraiz A, Tarifa C, Jiménez V, Llach A, Godoy H, Colino H, Nolla C, Casabella S, Izquierdo P, Benitez I, Benitez R, Roselló E, Rodríguez E, Viñolas X, Ciruela F, Cinca J, Hove L. Influence of sex on intracellular calcium homeostasis in patients with atrial fibrillation. *Cardiovasc Res.* 2022. 118. (4):p. 1033-1045. IF:13,081. D1.

Van EM, Benitez ID, Sweetman AM, Nadal N, Chai CL, Masa JF, Gómez de Terreros FJ, Adams RJ, Sanchez M, Stocks N, Kaambwa B, McEvoy RD, Barbe F. Primary vs. Specialist Care for Obstructive Sleep Apnea: A Systematic Review and Individual Participant Data Level Meta-Analysis. *Ann. Am. Thorac. Soc.* 2022. 19. (4):p. 668-677. IF:8,785. Q1.

Masa JF, Benitez ID, Javaheri S, Mogollon MV, Sánchez MÁ, Terreros FJG, Corral J, Gallego R, Romero A, Caballero C, Ordax E, Gomez T, González M, López S, Marin JM, Martí S, Díaz T, Chiner E, Egea C, Barca J, Barbé F, Mokhlesi B, Spanish N. Risk factors associated with pulmonary hypertension in obesity hypoventilation syndrome. *J Clin Sleep Med.* 2022. 18. (4):p. 983-992. IF:4,324. Q2.

García F, Alcázar B, Castillo D, Cilloniz C, García A, Leiro V, Lojo I, Padilla A, Quezada CA, Rodríguez JA, Sánchez M, Sibila O, Martínez MA. Biological Biomarkers in Respiratory Diseases. *Arch Bronconeumol.* 2022. 58. (4):p. 323-333. IF:6,333. Q1.

García F, Alcazar B, Castillo D, Cilloniz C, García A, Leiro V, Lojo I, Padilla A, Quezada CA, Rodríguez JA, Sanchez M, Sibila O, Martínez MA. [Translated article] Biological Biomarkers in Respiratory Diseases. *Arch Bronconeumol.* 2022. 58. (4):p. 323-333. IF:6,333. Q1.

García MC, Gonzalez J, Benitez ID, Carmona P, Santistevé S, Moncusi A, Gort C, Rodríguez F, Molinero M, Perez M, Torres G, Caballero J, Barbera C, Tedim AP, Almansa R, Ceccato A, Fernández L, Ferrer R, García D, Menéndez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, CIBERESUCICOVID Project (COV20/00110 I. Proteomic profiling of lung diffusion impairment in the recovery stage of SARS-CoV-2-induced ARDS. *Clin. Transl. Med.* 2022. 12. (5):e838. IF:8,554. Q1.

Benitez ID, Moncusi A, Vaca R, Gort C, Minguez O, Santistevé S, Carmona P, Torres G, Fagotti J, Labarca G, Torres A, Gonzalez J, De Gonzalo D, Barbe F, Targa A. Sleep and Circadian Health of Critical COVID-19 Survivors 3 Months After Hospital Discharge. *Crit. Care Med.* 2022. 50. (6):p. 945-954. IF:9,296. Q1.

Marin M, Sanz D, Santamaria F, Benitez I, Simon AL, Forner M, Cubero P, Gil A, Sanchez M, Barbe F, Marin JM. Soluble RAGE in COPD, with or without coexisting obstructive sleep apnoea. *Respir Res.* 2022. 23. (1):p. 163-163. IF:7,162. Q1.

Zapater A, Solelhac G, Sanchez A, Gracia E, Benitez ID, Torres G, De Batlle J, Haba J, Berger M, Abad J, Duran J, Urrutia A, Mediano O, Masdeu MJ, Ordax E, Masa JF, De la Peña M, Mayos M, Coloma R, Montserrat JM, Chiner E, Minguez O, Pascual L, Cortijo A, Martínez D, Dalmases M, Lee CH, McEvoy RD, Barbe F, Heinzer R, Sanchez M, Spanish N. Respiratory Polygraphy Patterns and Risk of Recurrent Cardiovascular Events in Patients With Acute Coronary Syndrome. *Front. Med.* 2022. 9. p. 870906-870906. IF:5,058. Q2.

Benítez ID, de Batlle J, Torres G, González J, de Gonzalo D, Targa A, Gort C, Moncusi A, Ceccato A, Fernández L, Ferrer R, García D, Menéndez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Peñasco Y, Ricart P, Martín MC, Aguilera L, Rodríguez A, Boado MV, Suarez F, Pozo JC, Solé J, Nieto M, Novo MA, Barberán J, Amaya R, Garnacho J, García JL, Gómez JM, Lorente JÁ, Blandino A, Tamayo L, López E, Úbeda A, Catalán M, Sánchez A, Martínez I, Jorge RN, Franco N, Gumucio VD, Huerta A, Bustamante E, Valdivia LJ, Caballero J, Gallego E, Martínez de la Gándara A, Castellanos Á, Trenado J, Marin J, Albaiceta GM, de la Torre MDC, Loza A, Vidal P, Lopez J, Añón JM, Carbajales C, Sagredo V, Bofill N, Carbonell N, Socías L, Barberà C, Estella A, Villedor M, Diaz E, López A, Torres A, Barbé F, CIBERESUCICOVID Project (COV20/00110 I. Prognostic implications of comorbidity patterns in critically ill COVID-19 patients: A multicenter, observational study. *Lancet Reg Health Eur.* 2022. 18. p. 100422-100422.

Bermúdez M, Martí M, Castro E, Bretones MDM, Farràs C, Torres G, Pamplona R, Lecube A, Mauricio D, Valdivielso JM, Fernández E. Development and Validation of a Personalized, Sex-Specific Prediction Algorithm of Severe Atherosclerosis in Middle-Aged Asymptomatic Individuals: The ILERVAS Study. *Front. Cardiovasc. Med.* 2022. 9. p. 895917-895917. IF:5,846. Q2.

González J, Zuñil M, Benítez ID, de Gonzalo D, Aguilar M, Santistevé S, Vaca R, Minguez O, Seck F, Torres G, de Batlle J, Gómez S, Barril S, Moncusi A, Monge A, Gort C, Ferrer R, Ceccato A, Fernández L, Motos A, Riera J, Menéndez R, García D, Peñuelas O, Labarca G, Caballero J, Barberà C, Torres A, Barbé F. One Year Overview and Follow-Up in a Post-COVID Consultation of Critically Ill Patients. *Front. Med.* 2022. 9. p. 897990-897990. IF:5,058. Q2.

Molinero M, Gómez S, Benítez ID, Vengoechea JJ, González J, Polanco D, Gort C, Moncusi A, García MC, Perez M, Belmonte T, Torres G, Caballero J, Barberà C, Ayestarán JI, Socías L, Ceccato A, Fernández L, Ferrer R, García D, Lorente JÁ, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Multiplex protein profiling of bronchial aspirates reveals disease-, mortality- and respiratory sequelae-associated signatures in critically ill patients with ARDS secondary to SARS-CoV-2 infection. *Front. Immunol.* 2022. 13. p. 942443-942443. IF:8,786. Q1.



2.6. Precision medicine in chronic diseases group

Gonzalez J, Gracia E, Gómez S, Barril S, Godoy P, Bermudez M, Betriu A, Fernandez E, Lecube A, Pamplona R, Purroy F, Farras C, Barbé F, Torres G, de Batlle J. Lung Function Impairment Is Related to Subclinical Atherosclerosis Only in Active Smokers. *Vasa*. 2022. IF:2,336. Q4.

Pengo MF, Javaheri S, Sanchez M, Schwarz EI. What cardiologists should know about sleep. *Eur Heart J*. 2022. 43. (31):p. 2911-2913. IF:35,855. D1.

González J, Carmona P, Gracia E, Benítez ID, Antón A, Balaña A, Díaz SB, Bernadich Ò, Córdoba A, Embid C, Espallargues M, Luján M, Martí S, Ortega MP, Tárrega J, Barbé F, Escarrabill J, CatCoVer G. Cluster Analysis of Home Mechanical Ventilation in COPD Patients: A Picture of the Real World and Its Impact on Mortality. *Arch Bronconeumol*. 2022. 58. (9):p. 642-648. IF:6,333. Q1.

Sánchez M, Gracia E, Benitez ID, Zapater A, Torres G, Sánchez A, Aldoma A, de Batlle J, Targa A, Abad J, Duran J, Urrutia A, Mediano O, Masdeu MJ, Ordax E, Masa JF, De la Peña M, Mayos M, Coloma R, Montserrat JM, Chiner E, Minguez O, Pascual L, Cortijo A, Martinez D, Dalmases M, Lee CH, McEvoy RD, Barbé F, Spanish N. Long-term Effect of OSA and CPAP Treatment on Blood Pressure in Patients with Acute Coronary Syndrome. *Ann. Am. Thorac. Soc*. 2022. 19. (10):p. 1750-1759. IF:8,785. Q1.

Almansa R, Eiros JM, de Gonzalo D, Postigo T, Ortega A, Lopez R, Moncusi A, Gort C, Dominguez M, Fuente A, Gonzalez L, Luis T, Garcia N, Tedim AP, Rodriguez F, Jorge N, Gonzalez J, Torres G, Gutierrez ON, Villegas MJ, Campo S, Ayllon E, Albi TR, de Frutos J, Domingo AA, Abadia J, Barquero JG, Trapiello W, Garcia LJ, Inglada L, Campo FD, Bermejo JF, Barbe F, Torres A. N-antigenemia detection by a rapid lateral flow test predicts 90-day mortality in COVID-19: a prospective cohort study. *Clin. Microbiol. Infect*. 2022. 28. (10):p. 13911-13915. IF:13,310. D1.

Faulx MD, Mehra R, Reis G, Ando SI, Arzt M, Drager L, Fu M, Hoyos C, Hai J, Hwang JJ, Karaoguz R, Kimoff J, Lee PL, Mediano O, Patel SR, Peker Y, Louis J, Sanchez M, Sériès F, Stadler S, Stollo P, Tahrani AA, Thunström E, Yamauchi M, Redline S, Phillips CL, International Collaboration of Sleep Apnea Cardiovascular Trialists I. Obstructive sleep apnea and its management in patients with atrial fibrillation: An International Collaboration of Sleep Apnea Cardiovascular Trialists (INCOSACT) global survey of practicing cardiologists. *IJC Heart Vasc*. 2022. 42. p. 101085-101085.

Garcia MC, Pelaez R, Gonzalez J, Santistevé S, Benitez ID, Molinero M, Perez M, Belmonte T, Torres G, Moncusi A, Gort C, Aguila M, Seck F, Carmona P, Caballero J, Barbera C, Ceccato A, Fernandez L, Ferrer R, Garcia D, Lorente JA, Menendez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, Larrayoz IM. Genome-wide transcriptional profiling of pulmonary functional sequelae in ARDS- secondary to SARS-CoV-2 infection. *Biomed. Pharmacother*. 2022. 154. p. 113617-113617. IF:7,419. D1.

Zapater A, Barbe F, Sanchez M. Micro-RNA in obstructive sleep apnoea: biomarker of cardiovascular outcome?. *Curr. Opin. Pulm. Med*. 2022. 28. (6):p. 559-570. IF:2,868. Q4.

Dakterzada F, Benitez ID, Targa A, Carnes A, Pujol M, Jove M, Minguez O, Vaca R, Sanchez M, Barbe F, Pamplona R, Piñol G. Blood-based lipidomic signature of severe obstructive sleep apnoea in Alzheimer's disease. *Alzheimers Res. Ther*. 2022. 14. (1):p. 163-163. IF:8,823. D1.

Castillo M, Solano E, Romero S, Viejo ME, Silgado L, Álvarez L, Mediano San Andrés R, Resano P, Garcia F, Cano I, Sánchez M, Ortigado A, López A, Fidalgo L, Rodríguez Á, Mediano O, Network SS. Prevalence of High Blood Pressure in Pediatric Patients with Sleep-Disordered Breathing, Reversibility after Treatment: The KIDS TRIAL Study Protocol. *Children-Basel*. 2022. 9. (12):1849. IF:2,835. Q2.

Garcia MC, González J, Benitez ID, Carmona P, Santistevé S, Pérez M, Moncusi A, Gort C, Rodríguez F, Molinero M, Belmonte T, Torres G, Labarca G, Nova E, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D, CIBERESUCICOVID Project (COV20/00110 I. Identification of circulating microRNA profiles associated with pulmonary function and radiologic features in survivors of SARS-CoV-2-induced ARDS. *Emerg. Microbes Infect*. 2022. 11. (1):p. 1537-1549. IF:19,568. D1.

Targa A, Benitez ID, Gonzalez J, Torres G, Santistevé S, Vaca R, Minguez O, Aguila M, Carmona P, Moncusi A, Gort C, Labarca G, Caballero J, Barbera C, Torres A, de Gonzalo D, Barbe F. Sleep and circadian health 6 months after critical COVID-19 disease. *Respirology*. 2022. 27. (12):p. 1083-1088. IF:6,175. Q1.

Sánchez E, Sánchez M, López C, Bermúdez M, Valdivielso JM, Farràs C, Pamplona R, Torres G, Mauricio D, Castro E, Fernández E, Lecube A. Is There a Link between Obesity Indices and Skin Autofluorescence? A Response from the ILERVAS Project. *Nutrients*. 2022. 15. (1):203. IF:6,706. Q1.



2.6. Precision medicine in chronic diseases group

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Barbé Illa, Ferran i Torres Cortada, Gerard	Instituto de Salud Carlos III (ISCIII)	Impacto del Manejo de los Trastornos Respiratorios Durante el Sueño en el control de la hipertensión sistémica: Proyecto ME-TASLEEP	2.344.100
Torres Cortada, Gerard i Barbé Illa, Ferran	Instituto de Salud Carlos III (ISCIII)	Pacientes Normotensos con Apnea del Sueño: Impacto Diferencial del Tratamiento con CPAP según el Patrón Circadiano de Presión Arterial. Ensayo Clínico Aleatorizado. Estudio MOISÉS	147.015
Barbé Illa, Ferran i Sánchez De La Torre, Manuel	Diputació de Lleida	Normotensive Patients with Sleep Apnea: Differential Impact of CPAP Treatment According to the Circadian Blood Pressure Pattern. A Randomized Controlled Trial. The MOISES study.	50.000

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Sánchez De La Torre, Manuel	Instituto de Salud Carlos III (ISCIII)	Caracterización de los mecanismos del daño vascular inducido por la apnea del sueño en la hipertensión nocturna y posibles dianas terapéuticas. Estudio HYPERSLEEP	275.275



Area 3. Epidemiology, infectious diseases and public health

Area coordinator: Dr. Oriol Yuguero Torres

In this area we want to respond to epidemiological challenges with clinical and basic researchers. We combine our research to see the impact on public health and the environment around us of all the pathologies we attend in our care centers.

Groups

3.1 Applied epidemiology

3.2 Genetics of complex diseases

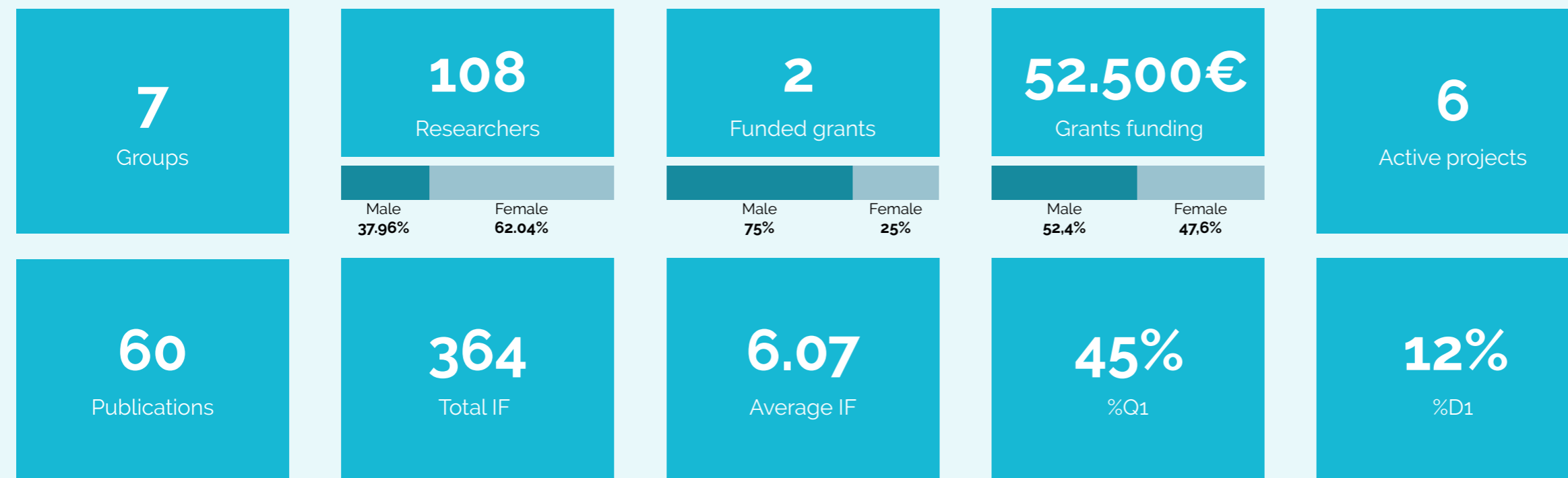
3.3 Intensive medicine

3.4 ERLab, research in emergency medicine

3.5 Indicators and specifications of the quality in the clinical laboratory

3.6 Translational research group on infectious diseases of Lleida

3.7 The pharmacoepidemiology and pharmacodynamics





3.1. Applied epidemiology

This is a multidisciplinary group set up by doctors specializing in preventive medicine and public health and specialists in family and community medicine that research the applications of epidemiology in the study of epidemic outbreaks, the investigation of risk factors for transmissible diseases, the estimation of coverage of periodic preventive activities in primary health care and pharmacoepidemiology. The main lines of research are the investigation of epidemic outbreaks for Norovirus, factors for HIV infection in immigrants, risk factors for tuberculous infection in contacts with patients and vaccines and international travel.

Publications

Godoy P, Castilla J, Astray J, Godoy S, Tuells J, Barrabeig I, Dominguez A. Hacia el control de la COVID-19 a través de la vacunación: obstáculos, desafíos y oportunidades. Informe SESPAS 2022. Gaceta Sanit. 2022. 36 Suppl 1. p. 82-86. IF:2,479. Q3.

Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. Nutrients. 2022. 14. (5):1102. IF:6,706. Q1.

Fuertes C, Ballesta P, Cruz I, Galindo G, Marsal JR, Gómez X. Prescripción potencialmente inadecuada: utilidad de los criterios STOPP/START versión 2 a nivel poblacional en Cataluña. Semergen. 2022. 48. (3):p. 163-173.

Altet N, Latorre I, Jiménez MÁ, Soriano A, Villar R, Milà C, Rodríguez P, Muriel B, Comella P, Godoy P, Millet JP, de Souza ML, Jiménez CA, Domínguez J, On Behalf Of Pii Smoking Separ Working G. Tobacco Smoking and Second-Hand Smoke Exposure Impact on Tuberculosis in Children. J Clin Med. 2022. 11. (7):2000. IF:4,964. Q2.

Torres F, Dakterzada F, Galván L, Buti M, Besanson G, Grill E, Buil R, de Batlle J, Piñol G. Benzodiazepine and Z-drug use and the risk of developing dementia. Int J Neuropsychopharmacol. 2022. 25. (4):p. 261-268. IF:5,678. Q1.

Torres F, de Batlle J, Galván L, Buti M, Barbé F, Piñol G. Evolution of the consumption trend of proton pump inhibitors in the Lleida Health Region

between 2002 and 2015. BMC PUBLIC HEALTH. 2022. 22. (1):p. 818-818. IF:4,135. Q2.

Garcia C, Pujol J, Aran L, Sol J, Ortiz S, Artigues E, Ortega M. Enhancing Night and Day Circadian Contrast through Sleep Education in Prediabetes and Type 2 Diabetes Mellitus: A Randomized Controlled Trial. Biology-Basel. 2022. 11. (6):893. IF:5,168. Q1.

Yuguero O, Companys M, Guzman M, Maciel R, Llobet C, Lopez A, Olles R, Pujol V, Ruiz MJ, Saura M, Vidal C, Godoy P. Epidemiological and clinical characteristics of SARS-CoV-2 reinfections in a Spanish region. SAGE Open Med. 2022. 10. 20503121221108556.

Godoy P, Parron I, Barrabeig I, Cayla JA, Clotet L, Follia N, Carol M, Orcau A, Alseda M, Ferrus G, Plans P, Jane M, Millet JP, Dominguez A, Transmission of Tuberculosis in Catalonia (Spain) Working G. Impact of the COVID-19 pandemic on contact tracing of patients with pulmonary tuberculosis. Eur. J. Public Health. 2022. 32. (4):p. 643-647. IF:4,424. Q2.

Miret C, Alseda M, Godoy P. COVID-19 vaccination coverage and associated factors in seasonal fruit workers in Lleida. Vacunas. 2022. 23. p. 44-51.

Florensa D, Mateo J, Spaimoc R, Miret C, Godoy S, Solsona F, Godoy P. Severity of COVID-19 cases in the months of predominance of the Alpha and Delta variants. Sci Rep. 2022. 12. (1):p. 15456-15456. IF:4,996. Q2.

Soler M, Aznar I, Basile L, Soldevila N, Godoy P, Martínez A, Serrano A, Domínguez A, The Surveillance Of Hospitalized Cases Of Severe Influenza In Catalonia W. Costs and Factors Associated with Hospitalizations Due to Severe Influenza in Catalonia (2017-2020). Int J Environ Res Public Health. 2022. 19. (22):14793. IF:4,614. Q1.

Guerrero M, Peñuelas M, Domínguez Á, Godoy P, Gómez D, Soldevila N, Izquierdo C, Martínez A, Torner N, Avellón A, Rius C, Varela C. Epidemiological Characteristics and Spatio-Temporal Distribution of Hepatitis A in Spain in the Context of the 2016/2017 European Outbreak. Int J Environ Res Public Health. 2022. 19. (24):16775. IF:4,614. Q1.

RESEARCH TEAM

Group leader

Pere Godoy Garcia

Researchers

Miquel Alseda Graells

Didac Florensa Cazorla

Josep Montserrat Capdevila

Marta Ortega Bravo

Jesús Pujol Salud

Placido Santafé Soler

Maria Catalina Serna Arnaiz

External contributors

Leonardo Galvan Santiago

Josep Ramon Marsal Mora

Laboratories

HUAV

Email

pere.godoy@gencat.cat



3.1. Applied epidemiology

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Godoy Garcia, Pere	Instituto de Salud Carlos III (ISCIII)	Factores asociados a la transmisión de SARS-CoV-2 en los convivientes de Cataluña y Navarra y efectividad de las vacunas y de las medidas no farmacológicas para reducir la transmisión	76.230
Godoy Garcia, Pere	Instituto de Salud Carlos III (ISCIII)	Incidencia y factores predictores de tuberculosis y del cumplimiento del tratamiento de la infección tuberculosa latente en una cohorte de expuestos a Mycobacterium tuberculo	62.920



3.2. Genetics of complex diseases

The group has been conducting research since January 1995 in the study of the genetic variability of the Vitamin D Receptor and its role in the susceptibility to HIV infection and the clinical progression of AIDS. To carry out this work the group has established collaborations with the Internal Medicine Service of the Arnau de Vilanova University Hospital and research groups of other hospitals and universities in Spain. The group currently coordinates an interdisciplinary research comprising by doctors and researchers from the Hospital Clínic de Barcelona, the University of Jaén and the University of Santiago de Compostela to study the role of the vitamin D receptor in HIV infection that causes AIDS. Following a strategy of "genes candidates" we are currently evaluating the role of allelic variants of different genes involved in the metabolism of vitamin D.

Publications

Gonzalez C, Lopez R, Brieva L. The efficacy of combining topiramate and 4-aminopyridine to reduce relapses and interictal progression in two cases of episodic ataxia type 2. *Neurol. Sci.* 2022. 43. (8):p. 5099-5101. IF:3,830. Q2.

Matas C, Soria X, Gonzalez M, Baradad M, Tuset N, Rius F, González M, Gatus S, Vilardell F, López R, María R. Abdominal tumors in patients with neurofibromatosis type I: Genotype-phenotype relationships. *Eur J Med Genet.* 2022. 65. (11):p. 104609-104609. IF:2,465. Q3.

RESEARCH TEAM

Group leader

Joan Fibla Palazon

Researchers

Marina Laplana Lafaja

Ricard López Ortega

Laboratories

Biomedicine I 2nd floor

973 702 299

Email

joan.fibla@udl.cat



3.3. Intensive medicine

The group's research is focused on improving safety in relation to the follow-up of patients with nosocomial infection, pulmonary disorders and/or artificial nutrition, as well as monitoring the quality of life of post-ICU patients, the assessment of the severity of the patients' conditions and the construction of models to predict outcome.

Publications

Gudelis M, Perez LT, Cabello JT, Leal DM, Monaco M, Sugimoto D. Apophysitis Among Male Youth Soccer Players at an Elite Soccer Academy Over 7 Seasons. *Orthop. J. Sports Med.* 2022. 10. (1):23259671211065063. IF:3,401. Q2.

Barea JA, Chico M, Quintana M, Pérez J, Serviá L, Molina I, Bringas M, Ruiz AL, Ballesteros MÁ, Llompart JA, On Behalf Of The Neurointensive Care And Trauma Working Group Of The Sociedad E . Risk Factors Associated with Mortality in Severe Chest Trauma Patients Admitted to the ICU. *J Clin Med.* 2022. 11. (1):266. IF:4,964. Q2.

Gonzalez J, Benitez ID, De Gonzalo D, Torres G, de Batlle J, Gomez S, Moncusi A, Carmona P, Santistevé S, Monge A, Gort C, Zuñil M, Cabo R, Manzano C, Vengoechea JJ, Vaca R, Minguez O, Aguilar M, Ferrer R, Ceccato A, Fernandez L, Motos A, Riera J, Menendez R, Garcia D, Peñuelas O, Labarca G, Caballero J, Barbera C, Torres A, Barbe F, CIBERESUCICOVID Project (COV20/00110 I. Impact of time to intubation on mortality and pulmonary sequelae in critically ill patients with COVID-19: a prospective cohort study. *Crit Care.* 2022. 26. (1):p. 18-18. IF:19,334. Q1.

Servia L, Lopez JC, Grau T, Trujillano J, Bordeje ML, Mor E, Portugal E, Lorenzo C, Montejo JC, Vera P, Macaya L, Martinez JF, Iglesias R, Monge D, Flordelis JL, Llorente B, Menor EM, Martínez de Lagrán I, Yebenes JC, ENPIC I. Evaluation of Nutritional Practices in the Critical Care patient (The ENPIC study): Does nutrition really affect ICU mortality?. *Clin. Nutr. ESPEN.* 2022. 47. p. 325-332.

Molinero M, Benítez ID, González J, Gort C, Moncusi A, Rodríguez F, García MC, Torres G, Vengoechea JJ, Gómez S, Cabo R, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Bronchial Aspirate-Based Profiling Identifies MicroRNA Signatures Associated With COVID-19 and Fatal Disease in Critically Ill Patients. *Front. Med.* 2022. 8. p. 756517-756517. IF:5,058. Q2.

Torres A, Motos A, Ceccato A, Bermejo J, de Gonzalo D, Pérez R, Barroso M, Pascual IZ, Gonzalez J, Fernández L, Ferrer R, Riera J, García D, Peñuelas O, Lorente JÁ, Almansa R, Menéndez R, Kiarostami K, Canseco J, Villar RA, Añón JM, Mariño AB, Barberà C, Barberán J, Ortiz AB, Boado MV, Bustamante

E, Caballero J, Cantón ML, Pérez CC, Carbonell N, Catalán M, de Frutos R, Franco N, Galbán C, Gumucio VD, Torre MDC, Díaz E, Estella Á, Gallego E, Garmendia JLG, Gómez JM, Huerta A, García RNJ, Loza A, Marin J, Delgado MCM, Gándara AM, Varela IM, Messa JL, Albaiceta GM, Nieto M, Novo MA, Peñasco Y, Pérez F, Pozo JC, Ricart P, Sagredo V, Sánchez Á, Chinesta SS, Serra M, Socias L, Solé J, Suárez F, Lomas LT, Trenado J, Úbeda A, Valdivia LJ, Vidal P, Barbé F, CIBERESUCICOVID Project (COV20/00110 I. Methodology of a Large Multicenter Observational Study of Patients with COVID-19 in Spanish Intensive Care Units. *Arch Bronconeumol.* 2022. 58 Suppl 1. p. 22-31. IF:6,333. Q1.

Lopez JC, Grau T, Trujillano J, García C, Mor E, Bordeje ML, Portugal E, Lorenzo C, Vera P, Macaya L, Martinez JF, Mateu L, Gero M, Gastaldo R, Vila B, Flordelis JL, Montejo JC, Servia L, The Enpic Study G. The Effect of Enteral Immunonutrition in the Intensive Care Unit: Does It Impact on Outcomes?. *Nutrients.* 2022. 14. (9):1904. IF:6,706. Q1.

Garcia MC, Gonzalez J, Benitez ID, Carmona P, Santistevé S, Moncusi A, Gort C, Rodriguez F, Molinero M, Perez M, Torres G, Caballero J, Barbera C, Tedim AP, Almansa R, Ceccato A, Fernandez L, Ferrer R, Garcia D, Menendez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, CIBERESUCICOVID Project (COV20/00110 I. Proteomic profiling of lung diffusion impairment in the recovery stage of SARS-CoV-2-induced ARDS. *Clin. Transl. Med.* 2022. 12. (5):e838. IF:8,554. Q1.

Benítez ID, de Batlle J, Torres G, González J, de Gonzalo D, Targa A, Gort C, Moncusi A, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Peñasco Y, Ricart P, Martin MC, Aguilera L, Rodríguez A, Boado MV, Suarez F, Pozo JC, Solé J, Nieto M, Novo MA, Barberán J, Amaya R, Garnacho J, García JL, Gómez JM, Lorente JÁ, Blandino A, Tamayo L, López E, Úbeda A, Catalán M, Sánchez A, Martínez I, Jorge RN, Franco N, Gumucio VD, Huerta A, Bustamante E, Valdivia LJ, Caballero J, Gallego E, Martínez de la Gándara A, Castellanos Á, Trenado J, Marin J, Albaiceta GM, de la Torre MDC, Loza A, Vidal P, Lopez J, Añón JM, Carbajales C, Sagredo V, Bofill N, Carbonell N, Socias L, Barberà C, Estella A, Villedor M, Díaz E, López A, Torres A, Barbé F, CIBERESUCICOVID Project (COV20/00110 I. Prognostic implications of comorbidity patterns in critically ill COVID-19 patients: A multicenter, observational study. *Lancet Reg Health Eur.* 2022. 18. p. 100422-100422.

Torres A, Motos A, Cilloniz C, Ceccato A, Fernandez L, Gabarrus A, Bermejo J, Ferrer R, Riera J, Perez R, Garcia D, Peñuelas O, Lorente JA, de Gonzalo D, Almansa R, Menendez R, Palomeque A, Villar RA, Añón JM, Balan A, Barbera

RESEARCH TEAM

Group leaders

Jesus Caballero Lopez
José Javier Trujillano Cabello

Principal investigator

Gabriel Jimenez Jimenez

Researchers

Mariona Badia Castello
M Begoña Balsera Garrido
Sulamita Carvalho Brugger
Silvia Iglesias Moles
Mar Miralbes Torner
Josman Monclou Palomino
Neus Montserrat Ortiz
Dulce Angelica Morales Hernández
Jose Javier Prados Chica
Andres Pujol Freire
Silvia Rodríguez Ruiz
Jorge Rubio Ruiz
Lluís Servia Goixart
Montserrat Marta Vallverdu Vidal
Judith Vilanova Corsellas

Laboratories

HUAV

973 702 406

973 705 245

Email

jjtrujillano.lleida.ics@gencat.cat
jcaballero.lleida.ics@gencat.cat



3.3. Intensive medicine

C, Barberan J, Blandino A, Boado MV, Bustamante E, Caballero J, Canton ML, Carbajales C, Carbonell N, Catalan M, de Frutos R, Franco N, Galban C, Gumucio VD, de la Torre MDC, Diaz E, Estella A, Gallego E, García JL, Gomez JM, Huerta A, García RNJ, Loza A, Marin J, Martin MC, Martínez de la Gándara A, Martínez I, López J, Albaiceta GM, Nieto M, Novo MA, Peñasco Y, Perez F, Pozo JC, Ricart P, Sagredo V, Sanchez A, Sancho S, Serra M, Socias L, Sole J, Suarez F, Tamayo L, Trenado J, Ubeda A, Valdivia LJ, Vidal P, Barbe F, CIBERESUCICOVID I. Major candidate variables to guide personalised treatment with steroids in critically ill patients with COVID-19: CIBERESUCICOVID study. *Intensive Care Med.* 2022. 48. (7):p. 1-15. IF:41,787. D1.

Ballesteros MA, Sanchez MJ, Chico M, Barea JA, Servia L, Sanchez M, Saez IG, Pino FI, Llompарт JA, Minambres E, Spanish Soc Intensive Care Med S. Chronic critical illness in polytrauma. Results of the Spanish trauma in ICU registry. *Acta Anaesthesiol. Scand.* 2022. 66. (6):p. 722-730. IF:2,274. Q4.

González J, Zuñil M, Benítez ID, de Gonzalo D, Aguilar M, Santistevé S, Vaca R, Minguez O, Seck F, Torres G, de Batlle J, Gómez S, Barril S, Moncusí A, Monge A, Gort C, Ferrer R, Ceccato A, Fernández L, Motos A, Riera J, Menéndez R, García D, Peñuelas O, Labarca G, Caballero J, Barberà C, Torres A, Barbé F. One Year Overview and Follow-Up in a Post-COVID Consultation of Critically Ill Patients. *Front. Med.* 2022. 9. p. 897990-897990. IF:5,058. Q2.

Molinero M, Gómez S, Benitez ID, Vengoechea JJ, González J, Polanco D, Gort C, Moncusí A, García MC, Perez M, Belmonte T, Torres G, Caballero J, Barberà C, Ayestarán JI, Socias L, Ceccato A, Fernández L, Ferrer R, Garcia D, Lorente JÁ, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D. Multiplex protein profiling of bronchial aspirates reveals disease-, mortality- and respiratory sequelae-associated signatures in critically ill patients with ARDS secondary to SARS-CoV-2 infection. *Front. Immunol.* 2022. 13. p. 942443-942443. IF:8,786. Q1.

Garcia MC, Pelaez R, Gonzalez J, Santistevé S, Benitez ID, Molinero M, Perez M, Belmonte T, Torres G, Moncusí A, Gort C, Aguila M, Seck F, Carmona P, Caballero J, Barbera C, Ceccato A, Fernandez L, Ferrer R, Garcia D, Lorente JA,

Menendez R, Motos A, Peñuelas O, Riera J, Bermejo JF, Torres A, Barbe F, de Gonzalo D, Larrayoz IM. Genome-wide transcriptional profiling of pulmonary functional sequelae in ARDS- secondary to SARS-CoV-2 infection. *Biomed. Pharmacother.* 2022. 154. p. 113617-113617. IF:7,419. D1.

Clemente Á, León E, Castellanos Á, Bodi M, Gordo F, Martin MC, Jorge C, Fernandez F, Igeño JC, Trenado J, Caballero J, Parraga MJ. National Survey: How Do We Approach the Patient at Risk of Clinical Deterioration outside the ICU in the Spanish Context?. *Int J Environ Res Public Health.* 2022. 19. (19):12627. IF:4,614. Q1.

García MC, González J, Benítez ID, Carmona P, Santistevé S, Pérez M, Moncusí A, Gort C, Rodríguez F, Molinero M, Belmonte T, Torres G, Labarca G, Nova E, Caballero J, Bermejo JF, Ceccato A, Fernández L, Ferrer R, Garcia D, Menéndez R, Motos A, Peñuelas O, Riera J, Torres A, Barbé F, de Gonzalo D, CIBERESUCICOVID Project (COV20/00110 I. Identification of circulating microRNA profiles associated with pulmonary function and radiologic features in survivors of SARS-CoV-2-induced ARDS. *Emerg. Microbes Infect.* 2022. 11. (1):p. 1537-1549. IF:19,568. D1.

Targa A, Benitez ID, Gonzalez J, Torres G, Santistevé S, Vaca R, Minguez O, Aguila M, Carmona P, Moncusí A, Gort C, Labarca G, Caballero J, Barbera C, Torres A, de Gonzalo D, Barbe F. Sleep and circadian health 6 months after critical COVID-19 disease. *Respirology.* 2022. 27. (12):p. 1083-1088. IF:6,175. Q1.

Montserrat N, Trujillano J, Badia M, Vilanova J, Jimenez G, Rubio J, Pujol A, Morales D, Servia L. Implementation of a major trauma team. Analysis of activation and care times in patients admitted to the ICU. *Med Intensiva (Engl Ed).* 2022.

Barea JA, Chico M, Quintana M, Servia L, Fernández A, Bringas M, Ballesteros MÁ, García Í, Pérez J, Llompарт JA, Neurointensive Care and Trauma Working Group of the Spanish Society of I. Traumatic Brain Injury and Acute Kidney Injury-Outcomes and Associated Risk Factors. *J Clin Med.* 2022. 11. (23):7216. IF:4,964. Q2.



3.4. ERLab, research in emergency medicine

ERLab is the only research group linked to emergency pathology research in Catalonia and the rest of the country. It is made up of healthcare professionals from Hospital Emergency Departments, Primary Care Emergency Departments and the out-of-hospital area.

Ours is a group made up of professionals with a great dedication to care, which is why the COVID-19 pandemic has meant that our tasks have been greatly reorganised. Even so, we have been able to carry out research and publish the results of our work. And over the years of the group's trajectory, we have been awarded various competitive projects. We have always maintained a public health vocation, since Arnau de Vilanova is the only 2nd level hospital in our health region and territory.

Our group has established working alliances with other research groups of the IRBLleida, as well as with the Department of Legal Medicine of the Faculty of Medicine of the University of Lleida or with the Chair of Social Innovation, also of the University of Lleida. With the Medical Emergency System, we work on joint projects in Catalonia.

Faced with the challenge of the situation of emergency professionals, we also collaborate with the Galatea Foundation to find solutions to improve emotional well-being and carry out research projects in this field.

We are currently carrying out two competitive projects and other small projects aimed at improving our care for the patients we attend throughout the emergency process.

Publications

Yuguero O, Blasco A, Vilela Á, Alsinet C. Happiness is related to cardiovascular risk: a cross-sectional study in Spain. *Psychol. Health Med.* 2022. 27. (3):p. 1-7. IF:3,898. Q2.

Yuguero O, Cabello I, Arranz M, Guzman JA, Moreno A, Frances P, Santos J, Esquerra A, Zarauza A, Modol JM, Jacob J. Emergency Department capacity to initiate thromboprophylaxis in patients with atrial fibrillation and thrombotic risk after discharge: URGFAICS cohort analysis. *Intern. Emerg. Med.* 2022. 17. (3):p. 873-881. IF:5,472. Q2.

Lucena A, Yuguero O. Systematic Review of Common Refractory Symptoms in the End-Of-Life Situation and Its Relation With Euthanasia. *Omega-J. Death Dying.* 2022. 302228221089123. IF:2,602. Q2.

Macip S, Yuguero O. Individual Freedom in the Initial Response to Covid-19. *Front Public Health.* 2022. 10. p. 765016-765016. IF:6,461. D1.

Yuguero O, Companys M, Guzman M, Maciel R, Llobet C, Lopez A, Olles R, Pujol V, Ruiz MJ, Saura M, Vidal C, Godoy P. Epidemiological and clinical characteristics of SARS-CoV-2 reinfections in a Spanish region. *SAGE Open Med.* 2022. 10. 20503121221108556.

Illa J, Yuguero O. An Analysis of the Ethical, Economic, and Environmental Aspects of Entomophagy. *Cureus.* 2022. 14. (7):p. 26863-26863.

Forne C, Yuguero O. Factor structure of the Maslach Burnout Inventory Human Services Survey in Spanish urgency healthcare personnel: a cross-sectional study. *BMC Med. Educ.* 2022. 22. (1):p. 615-615. IF:3,263. Q2.

Yuguero O, Inzitari M, Tolchinsky G. Clinical leaders, the first step for emotionally intelligent leadership. *BMJ Leader.* 2022. 6. (3):p. 219-221.

Yuguero O, Rius N, Soler J, Esquerda M. Increase of burnout among emergency department professionals due to emotional exhaustion during the SARS-Cov2 pandemic: Evolution from 2016 to 2021. *Medicine (Baltimore).* 2022. 101. (47):p. 31887-31887. IF:1,817. Q3.

Jover A, Ramírez M, Bellés A, Ribes E, Batlle M, Cayado J, Garrido S, Gracia MI, Gros L, Javierre MJ, Mari A, Montull L, Ortiz M, Terrer G, Vaqué P, Ichart JJ, Justribó E, Andreu E, Carrera J, Martorell R, Pallàs S, Saura M, Vena A, Albalat JM, Cano S, Chacón I, Escuin DR, Estadella MJ, Figueres AM, Minguet S, Montaña LM, Otal J, Pallerola M, Pujol F, Rodríguez A, Solé A, Toribio F, Urgelès MC, Valgañón J, Torres J, The P G, On Behalf Of Translational Research Group On Infectious Diseases Of Lleida H. Impact of a Primary Care Antimicrobial Stewardship Program on Bacterial Resistance Control and Ecological Imprint in Urinary Tract Infections. *Antibiotics-Basel.* 2022. 11. (12):1776. IF:5,222. Q1.

RESEARCH TEAM

Group leader

Oriol Yuguero Torres

Principal investigator

Rosa María Perez Perez

Researchers

Ana Belen Vena Martínez

Silvia Gros Naves

Elena Justribo Sánchez

José Daniel Lacasta García

Raquel Lain Gari

Cecilia Llobet Pina

Rita María Maciel Soares Pereira

Anna Moreno Pena

Sara Muñoz Buderus

César Pardos Molina

Violant Pujol Aymerich

Mireia Saura Codina

Silvia Tormo Gasa

Carmel Vidal Sans

María Viladrosa Montoy

PhD students

Noemí Espies Diaz

Iris Nathalie San Roman Arispe

Laboratories

HUAV

973 705 320

Email

oriolyuguero@gencat.cat



3.4. ERLab, research in emergency medicine

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Yuguero Torres, Oriol	Fundación ASISA	La narrativa escrita de quién enferma y/o acompaña	2.500

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Yuguero Torres, Oriol	Institut Català de la Salut (ICS)	Premi investigador/a jove ICS 2021	5.000
Perez Perez, Rosa Maria	Ministerio de Sanidad, Consumo y Bienestar Social	Evolución temporal de la atención hospitalaria urgente por consumo de alcohol y drogas de abuso entre mujeres y hombres. Impacto del consumo tóxico en pacientes menores de edad.	19.750
Yuguero Torres, Oriol	Fundación Investigación Mutua Madrileña	Biomarcadores séricos en el servicio de Urgencias como indicador de lesión cerebral post-TCE y pronóstico de morbimortalidad	70.000



3.5. Indicators and specifications of the quality in the clinical laboratory

Interdisciplinary group with medical specialists belonging to the Clinical Laboratories of the Catalan Institute of Health. The group's work is based on consensus and shared experience as guarantors of effectiveness and efficiency. The main objective is to establish quality indicators and specifications for the design and evaluation of strategies for the continuous improvement of processes, in order to increase patient safety. One of the lines of work of the group is the variability, adequacy and efficiency of the actions undertaken in demand.

Publications

Monclus A, Gonzalez A, Andreu F, Martin IC, Soto AB, Ibarz M, Rodriguez CG, Foncillas JP. Effects of the COVID-19 pandemic on the activity of clinical laboratories in Spain, evolution in the 2019-2021 period. *Adv. Lab. Med.-Av. Med. Lab.* 2022. 3. (4):p. 361-370.

Caballero A, Gomez R, Ventura M, Llopis MA, Bauca JM, Gomez C, Marzana I, Ibarz M. Evaluation of 18 quality indicators from the external quality assurance preanalytical programme of the Spanish Society of Laboratory Medicine (SEQC(ML)). *Adv. Lab. Med.-Av. Med. Lab.* 2022. 3. (2):p. 175-187.

Rayego S, Dolade N, Garcia A, Diaz JM, Ibarz M, Valdivielso JM. The Increase in FGF23 Induced by Calcium Is Partially Dependent on Vitamin D Signaling. *Nutrients.* 2022. 14. (13):2576. IF:6,706. Q1.

Cadamuro J, Baird G, Baumann G, Bolenius K, Cornes M, Ibarz M, Lewis T, Oliveira GL, Lippi G, Plebani M, Simundic AM, von A. Preanalytical quality improvement - an interdisciplinary journey, on behalf of the European Federation for Clinical Chemistry and Laboratory Medicine (EFLM) Working Group for Preanalytical Phase (WG-PRE). *Clin. Chem. Lab. Med.* 2022. 60. (5):p. 662-668. IF:8,490. Q1.

Crespo M, Perez A, Garcia A, Jover R, Guzman C, Dolcet X, Ibarz M, Martinez C, Eritja À, Diaz JM, Valdivielso JM. Elimination of Vitamin D Signaling Causes Increased Mortality in a Model of Overactivation of the Insulin Receptor: Role of Lipid Metabolism. *Nutrients.* 2022. 14. (7):1516. IF:6,706. Q1.

Gomez R, Ventura M, Llopis MA, Bauca JM, Caballero A, Ibarz M, Martinez D, Gomez C, Salas Gomez P, Garcia del Pino I, Delgado J, Puente JJ, Marzana I. External quality assessment of serum indices: Spanish SEQC-ML program. *Clin. Chem. Lab. Med.* 2022. 60. (1):p. 66-73. IF:8,490. Q1.

Gomez A, Olesti E, Montero B, Soldevila A, Deschamps T, Pizarro N, de la Torre R, Pozo OJ. Determination of up to twenty carboxylic acid containing compounds in clinically relevant matrices by o-benzylhydroxylamine derivatization and liquid chromatography-tandem mass spectrometry. *J Pharm Biomed Anal.* 2022. 208. p. 114450-114450. IF:3,571. Q2.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Valdivielso Revilla, José Manuel i Ibarz Escuer, María Mercedes	Diputació de Lleida	Influence of SARS-COV-2 infection in atherosclerosis development. "El BUS DE LA SALUT" study	50.000

RESEARCH TEAM

Group leader

María Mercedes Ibarz Escuer

Researchers

María Bernal Morillo

Sonia Carrasco Ignes

Blanca Montero San-martin

Oihana Ortiz Pastor

Laura Pastor Murcia

Silvia Pico Fornies

Daniel Queimaliños Perez

Ana Cristina Sopena Murillo

External contributors

Gloria Busquets Soria

María Antonia Llopis Diaz

M^a Isabel Llovet Lombarte

Merce Montesinos Costa

Nuria Serrat Orus

Laboratories

HUAV

973 705 228

Email

mibarz.lleida.ics@gencat.cat



3.6. Translational research group on infectious diseases of Lleida

The translational research group on infectious diseases of Lleida (TRIDLE) works in the following lines of research:

- Sepsis and infections of the bloodstream
- HIV
- Healthcare-related infections
- Antimicrobial administration, clinical microbiology
- Tropical diseases and imported pathology

Publications

Vega JM, Ortiz FJ, Martinez A, Castro L, Alfaya T, Carballada F, Cruz S, Marques L, Vega A, Ruiz B. Social wasps in Spain: the who and where. *Allergol. Immunopath.* 2022. 50. (2):p. 58-64. IF:2,094. Q4.

Sojo J, Lopez I, Rosso C, Morales IM, Palacios ZR, Hernandez A, Merino de Lucas E, Escola L, Bereciartua E, Garcia E, Pintado V, Boix L, Natera C, Sorli L, Borrell N, Giner L, Amador C, Shaw E, Jover A, Molina J, Martinez RM, Dueñas CJ, Calvo J, Silva JT, Cardenas MA, Lecuona M, Pomar V, Valiente de Santis L, Yague G, Lobo MA, Merino V, Pascual A, Rodriguez J, REIPI G. Effectiveness of Fosfomycin for the Treatment of Multidrug-Resistant *Escherichia coli* Bacteremic Urinary Tract Infections: A Randomized Clinical Trial. *JAMA Netw Open.* 2022. 5. (1):e2137277. IF:13,353. D1.

AM, Belles AB, Gonzalez EL, Sanchez IP, Bayo SM, Sanchez AB, Arnuelos JA, Font MF, Garcia LF, Gonzalez MG. Report of sexually transmitted infections prevalence in asymptomatic pregnant women under 25 years old in Lleida, Spain. *Rev. Esp. Quimioter.* 2022. 35. (1):p. 100-102. IF:2,515. Q3.

Lasarte C, Guijarro P, Bellés A, Vázquez JC, Arca J, Fernández C, Bou G, Beceiro A, Spanish National Study Acinetobacter 2020 Group SPP. Carbapenem Resistance in *Acinetobacter nosocomialis* and *Acinetobacter junii* Conferred by Acquisition of bla(OXA-24/40) and Genetic Characterization of the Transmission Mechanism between *Acinetobacter* Genomic Species. *Microbiol. Spectr.* 2022. 10. (1):e0273421. IF:9,043. Q1.

Ruiz A, Saez E, Martinez M, Bernet A, Porcel JM. A Simple Scoring System to Differentiate Bacterial from Viral Infections in Acute Exacerbations of COPD Requiring Hospitalization. *Int. J. Chronic Obstr. Pulm. Dis.* 2022. 17. p. 773-779. IF:2,893. Q4.

Bayo SM, Gonzalez EL, Belles AB, Sanchez AB, Arnuelos JA, de Tudela I, Sanchez IP, Gonzalez MG. Detection and pathological role of intestinal protozoa in children. *Parasitol Int.* 2022. 88. p. 102558-102558. IF:2,106. Q3.

Badia L, Peñafiel J, Lopez J, Pomar V, Martinez JA, Santana G, Cuquet J, Montero MM, Hidalgo C, Andres M, Gimenez M, Quesada MD, Vaque M, Iftimie S, Gudiol C, Perez R, Coloma A, Marron A, Barrufet P, Marimon M, Lerida A, Claros M, Ramirez MF, Pardo GG, Martinez MJ, Chamarro EL, Jimenez E, Hornero A, Limon E, Lopez M, Calbo E, Pujol M, Gasch O, Surveillance of health (. Decreased Mortality among Patients with Catheter-Related Bloodstream Infections at Catalan Hospitals (2010-2019). *J. Hosp. Infect.* 2022. 126. p. 70-77. IF:8,944. D1.

Del Turco ER, Pasquini Z, Scolz K, Amedeo A, Beci G, Giglia M, Bussini L, Carvalho S, Gutierrez L, Tedeschi S, Garcia M, Ambretti S, Pericas JM, Giannella M, Viale P, Bartoletti M. Treatment duration for central line-associated infection caused by *Enterococcus* spp.: a retrospective evaluation of a multicenter cohort. *Eur. J. Clin. Microbiol. Infect. Dis.* 2022. 41. (9):p. 1203-1206. IF:5,103. Q2.

Aguilera D, Solís G, Noguera A, González J, Román A, Baquero F, Toro C, Rodríguez P, Bloise I, Vallmanya T, Bernet A, Minguell L, Rubio A, Saavedra J, Ruiz MJ, Blázquez D, López P, Gomez D, López MD, López EM, Gil A, Martín A, Soriano A, Tórtola T, Falcon L, González V, Tebruegge M, Santiago B. Accuracy of Xpert Ultra for the diagnosis of paediatric tuberculosis in a low TB burden country: a prospective multicentre study. *Thorax.* 2022. 77. (10):p. 1023-1029. IF:9,102. Q1.

Ruiz B, Martínez San Ireneo M, de la Roca F, Arenas L, Alfaya T, Cordobés C, Marqués L, Vega A, Moreno C, Hymenoptera Allergy Committee of the Sociedad Española de Alergología e Inmunol. The Lights And The Shadows Of Controlled Sting Challenge With Hymenoptera. *J. Invest. Allergol. Clin. Immunol.* 2022. 32. (5):p. 357-366. IF:8,185. Q1.

Jover A, Ramírez M, Bellés A, Ribes E, Batlle M, Cayado J, Garrido S, Gracia MI, Gros L, Javierre MJ, Mari A, Montull L, Ortiz M, Terrer G, Vaqué P, Ichart JJ, Justribó E, Andreu E, Carrera J, Martorell R, Pallàs S, Saura M, Vena A, Albalat JM, Cano S, Chacón I, Escuin DR, Estadella MJ, Figueres AM, Minguet S, Montaña LM, Otal J, Pallerola M, Pujol F, Rodríguez A, Solé A, Toribio F, Urgelés MC, Valgañon J, Torres J, The P G, On Behalf Of Translational Research Group On Infectious Diseases Of Lleida H. Impact of a Primary Care Antimicrobial Stewardship Program on Bacterial Resistance Control and Ecological Imprint in Urinary Tract Infections. *Antibiotics-Basel.* 2022. 11. (12):1776. IF:5,222. Q1.

RESEARCH TEAM

Group leader

Eva González de la Fuente

Principal investigators

Fernando Barcenilla Gaité

Alfredo Jover Saenz

Researchers

Nadia Abdulghani Martínez

Merce Almirall Egerique

Alba Belles Belles

Albert Bernet Sanchez

Thais Comella Fiestras

Mariola Espejo Suros

Maria Jose Estadella Servalls

Mercedes Garcia Gonzalez

Jaume Garriga Masana

Antón Manonelles Fernández

Lluís Marques Amat

Francesc Pujol Aymerich

Maria Fernanda Ramirez Hidalgo

Esther Ribes Murillo

Marcos Serrano Godoy

Elena Simó Martínez de Guereño

Marina Vidal Castello

Laboratories

HUAV HUSM

Email

egonzalezf@gss.cat



3.7. The pharmacoepidemiology and pharmacodynamics

The Pharmacoepidemiology and Pharmacodynamics (P&P) Research Group is a multidisciplinary group that includes medical doctors from different specialties, pharmacists from different specialties, and graduates in nursing. The research areas include topics in basic, clinical and epidemiological Pharmacology. The group aims to evaluate the efficacy, safety and efficiency of medical technology linked to the use of drugs, either as prevention or treatment of diseases. It also focuses on the analysis of drug use patterns as a starting point to achieve their rational application.

Its objectives are focused on the following basic areas:

- Medical oncology
- Infectious diseases
- Inflammatory diseases
- Drug repurposing
- Artificial nutrition
- Neuropharmacology
- The safety and effectiveness of medications
- Pharmacoeconomics

The fundamental tool of pharmacoepidemiology is the clinical trial. For this reason, the group's is actively participating in multicenter national or international clinical trials for the development of new drugs in the different areas of interest.

The Pharmacodynamic part of the group is focused on deciphering the mechanism of action of new drugs and the identification of new, previously unnoticed, applications of the approved drugs.

Publications

Vilaltella M, Huerva V. The regression time of ocular surface squamous neoplasia using topical interferon alfa-2b does not depend on the initial tumor size. *Arq. Bras. Oftalmol.* 2022. 85. (2):p. 109-114. IF:1,033. Q4.

López JP, Martínez MJ, Bermúdez de la Vega JA, Bosch J, Lechuga AM, Villalobos T, SGA Study Investigator Collaborative G. Growth hormone treatment does not lead to insulin resistance nor excessive rise in IGF-1 levels, while improving height in patients small for gestational age A long-term observational study. *Clin. Endocrinol.* 2022. 96. (4):p. 558-568. IF:3,523. Q3.

Rodriguez AT, Viejo MN, Maradey P, Canal J, Mancilla PG, Rivero SG, Casillas IR, Abian MH, Bermudo CL. Low-dose sublingual fentanyl improves quality of life in patients with breakthrough cancer pain in palliative care. *Future Oncol.* 2022. 18. (14):p. 1717-1731. IF:3,674. Q3.

Rivera K, Fernandez D, Casanova J, Barriuso I, Zielonka M, Pueyo N, Calaf I, Worner F. Comparison between the Right and Left Distal Radial Access for Patients Undergoing Coronary Procedures: A Propensity Score Matching Analysis. *J Interv Cardiol.* 2022. 2022. p. 7932114-7932114. IF:1,776. Q4.

Cid P, Huerva V. Use of interferon alpha 2b to manage conjunctival primary acquired melanosis and conjunctival melanoma. *Surv. Ophthalmol.* 2022. 67. (5):p. 1391-1404. IF:6,197. D1.

Barriuso I, Pueo E, Gil MI, Fernandez D, Viles D, Worner F. Heart failure and pericardial mass leading to diagnosis of a rare hematologic disease. *Rev. Port. Cardiol.* 2022. 41. (12):p. 1055-1056. IF:1,651. Q4.

Luis Recuero Díaz J, Almánzar SF, Munoz CG, Sierra JL, Porras ML, Medina DM, Vicuña MN, Moreno LS, Cantalejo MG, Porcel JM. Recommendations of the Spanish Society of Thoracic Surgery for the management of malignant pleural effusion. *Cir Esp (Engl Ed).* 2022. 100. (11):p. 673-683.

Fernandez D, Casanova J, Barriuso I, Rivera K, Otaegui I, Del Blanco BG, Jimenez TG, Lopez M, Rodriguez M, Torres F, Diaz VJ, Ocaranza R, Disdier VP, Elvira GS, Worner F. Ajustando a RFR por Preditores de Discórdância, "A RFR Ajustada": Uma Metodologia Alternativa para Melhorar a Capacidade Diagnóstica dos Índices Coronarianos. *Arq. Bras. Cardiol.* 2022. 119. (5):p. 705-713. IF:2,667. Q3.

Pereyra E, Fernandez D, Gonzalez S, Almendro M, Martin A, de Miguel IM, Andres M, Duran A, Sanchez A, Worner F, Nunez IJ, RETAKO I. Antiplatelet therapy at discharge and long-term prognosis in Takotsubo syndrome: Insights from the Spanish National Registry (RETAKO). *Rev. Port. Cardiol.* 2022. 41. (11):p. 919-927. IF:1,651. Q4.

Barriuso I, Worner F, Vilahur G. Novel Antithrombotic Agents in Ischemic Cardiovascular Disease: Progress in the Search for the Optimal Treatment. *J. Cardiovasc. Dev. Dis.* 2022. 9. (11):397. IF:4,415. Q2.

RESEARCH TEAM

Group leader

Juan Antonio Schoenenberger Arnaiz

Principal investigators

Judit Ribas Fortuny
Fernando Worner Diz

Researchers

Jacint Boix Torras
Jordi Bosch Muñoz
Jaume Canal Sotelo
Marta Gilabert Sotoca
Valentin Huerva Escanilla
Santiago Manuel Cano Marron
Beatriz Martinez Castro
Mireia Martinez Sogues
Maria Nabal Vicuña
Pablo Pastor Pueyo
Eduardo Pereyra Acha
Manel Pique Gilart
Esther Querol Zamora
Judit Rius Perera
Pilar Taberner Bonastre

PhD student

Alvaro Valero Cortijo

Research technicians

Marta Agusti Fernandez
Laura Barta Sancho
Manuela Gonzalez Jimenez
Oihane Mugica Antón
Blanca Navarro Cabases

Laboratories

Biomedicine 2nd floor. Lab b2.2

HUAV

973 705 220



jas.lleida.ics@gencat.cat



3.7. The pharmacoepidemiology and pharmacodynamics

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Ribas Fortuny, Judit	Ministerio de Ciencia e Innovación	Reposicionamiento contra el Crohn: cribado de una librería de fármacos aprobados por FDA que frenen la muerte celular por TNF-a en modelos genéticos deficientes en autofagia	110.110



Area 4. Neurosciences

Area coordinator: Dr. Rosa Maria Soler Tatché

Neuroscience is a multidisciplinary area that studies the nervous system in its structure, function, development and pathology. IRBLleida groups investigate neurological and psychiatric diseases addressing molecular, cellular and clinical aspects.

Groups

4.1 Clinical neurosciences

4.2 Evolutionary developmental neurobiology

4.3 Experimental neuromuscular pathology

4.4 Molecular and developmental neurobiology

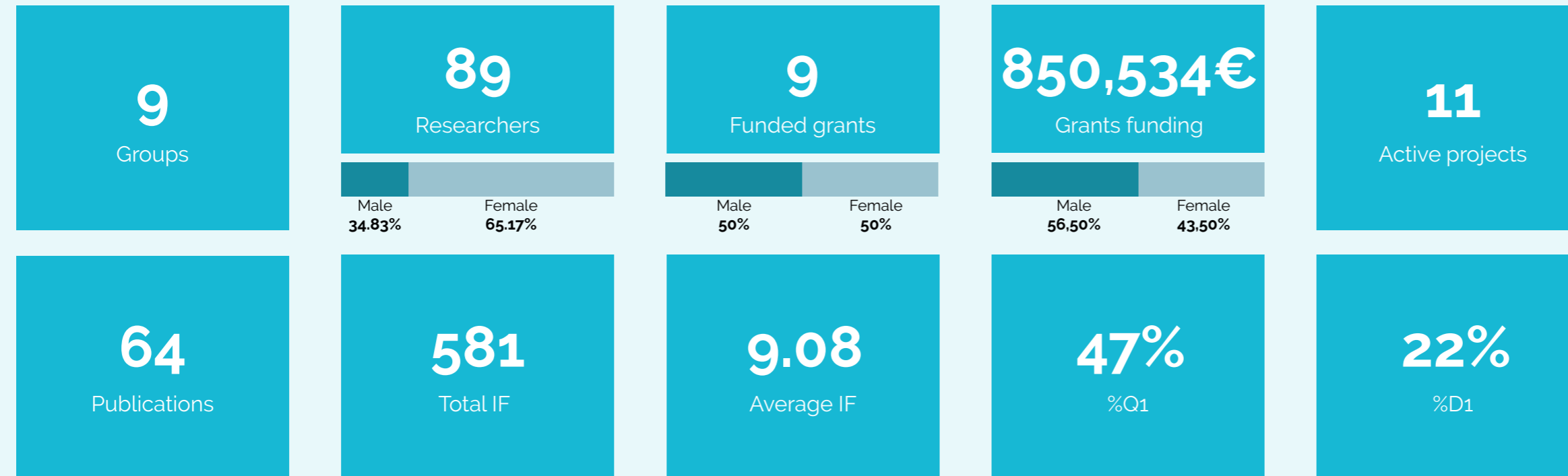
4.5 Neurocognition, psychobiology of the personality and behavioral genetics

4.6 Neuroimmunology

4.7 Neuronal signalling unit

4.8 Biological foundations of mental disorders

4.9 +Pec Proteomics





4.1. Clinical neurosciences

The Clinical Neurosciences group was created with the aim of bringing together all the neurological research carried out in the Lleida hospital setting in 2008. It is led and coordinated by Dr. Francesc Purroy. Currently, it is a translational research group made up of different professional profiles (neurologists, radiologists, psychologists, nurses, vascular surgeons, geriatricians, psychologists, clinical biochemists, biologists, biotechnologists, and biomedicians). The group is subdivided into two nodes representing research in cerebrovascular diseases and research in cognitive impairment:

- **Cerebrovascular diseases** The group aims to improve the diagnosis, prognosis and treatment of patients, through the identification of biomarkers (neuroimaging, biologics) and the understanding of the molecular mechanisms involved in strokes. It is developing a clinical trial of remote ischemic tolerance in patients with stroke code criteria (study REMOTECAT- trialsgov NCT03375762). It is part of the "Spanish Network of Cerebral Vascular Diseases" of the Carlos III Institute (INVICTUS-plus).
- **Cognitive impairment** It aims to improve the diagnosis of people with cognitive impairment through biological biomarkers and its association with sleep pathology.

Publications

Flores A, Seró L, Gomez M, Ustrell X, Pellisé A, Viñas J, Rodriguez P, Monterde A, Castilho G, Rubiera M, Amaro S, Padrós M, Cardona P, Marti J, Molina CA, Serena J, Jimenez FX, Purroy F, Zaragoza J, Cocho D, Palomeras E, Kuprinski J, Más N, Hernández M, Sanjurjo E, Carrión D, Costa X, Barceló M, Monedero J, Catena E, Rybye M, Diaz G, de la Ossa NP, Ribó M, Catalan Stroke Code and Reperfusion C. The Role of Vascular Imaging at Referral Centers in the Drip and Ship Paradigm. *J Stroke Cerebrovasc Dis.* 2022. 31. (1):p. 106209-106209. IF:2,677. Q3.

Villarejo A, Garcia E, Piñol G, Del Olmo A, Viñuela F, Boada M, Franco E, Ibañez de la Peña A, Riverol M, Puig A, Abizanda P, Arroyo R, Baquero M, Fera I, Balasa M, Berbel Á, Rodríguez E, Vieira A, García G, Rodrigo S, Terrance Á, Prefasi D, Lleó A, Maurino J. Quality of Life and the Experience of Living with Early-Stage Alzheimer's Disease. *J. Alzheimer's Dis.* 2022. 90. (2):p. 719-726. IF:4,160. Q2.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmases M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med.* 2022. 11. (5):1413. IF:4,964. Q2.

Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. *Nutrients.* 2022. 14. (5):1102. IF:6,706. Q1.

Nicolas FJ, Aróstegui JI, Piñol G, Ribes I, Nicolás FJ, Sarrat RM, Melgarejo PJ. Meningeal siderosis in a patient carrying the p.Arg92Gln variant TNFRSF1A gene. *Neurologia.* 2022. 37. (3):p. 237-237. IF:5,486. Q1.

Nicolás FJ, Aróstegui JI, Piñol G, Ribes I, Nicolás FJ, Sarrat RM, Melgarejo PJ. Meningeal siderosis in a patient carrying the p.Arg92Gln variant TNFRSF1A gene. *Neurologia (Engl Ed).* 2022. 37. (3):p. 237-239.

Bellenguez C, Küçükali F, Piñol G, Ramirez A, Lambert JC. New insights into the genetic etiology of Alzheimer's disease and related dementias. *Nature Genet.* 2022. 54. (4):p. 412-436. IF:41,307. D1.

Torres F, Dakterzada F, Galván L, Buti M, Besanson G, Grill E, Buil R, de Batlle J, Piñol G. Benzodiazepine and Z-drug use and the risk of developing dementia. *Int J Neuropsychopharmacol.* 2022. 25. (4):p. 261-268. IF:5,678. Q1.

Torres F, de Batlle J, Galván L, Buti M, Barbé F, Piñol G. Evolution of the consumption trend of proton pump inhibitors in the Lleida Health Region between 2002 and 2015. *BMC PUBLIC HEALTH.* 2022. 22. (1):p. 818-818. IF:4,135. Q2.

Perez de la Ossa N, Abilleira S, Jovin TG, Garcia A, Jimenez X, Urra X, Cardona P, Cocho D, Purroy F, Serena J, San Roman L, Vivanco RM, Salvat M, Chamorro A, Gallofre M, Molina CA, Cobo E, Davalos A, Ribo M, RACECAT I. Effect of Direct Transportation to Thrombectomy-Capable Center vs Local Stroke Center on Neurological Outcomes in Patients With Suspected Large-Vessel Occlusion Stroke in Nonurban Areas: The RACECAT Randomized Clinical Trial. *JAMA.* 2022. 327. (18):p. 1782-1794. IF:157,335. D1.

Boada M, Lopez OL, Olazarán J, Nunez L, Pfeffer M, Puente O, Pinol G, Gamez JE, Anaya F, Kiproff D, Alegret M, Grifols C, Barcelo M, Bozzo J, Szczepiorski ZM, Paez A, AMBAR GRP. Neuropsychological, neuropsychiatric, and quality-of-life assessments in Alzheimer's disease patients treated with plasma exchange with albumin replacement from the randomized AMBAR study. *Alzheimer's Dementia.* 2022. 18. (7):p. 1314-1324. IF:16,655. D1.

Le Y, Belloy ME, Grenier B, de Rojas I, Castillo A, Jansen I, Nicolas A, Bellenguez C, Dalmasso C, Küçükali F, Eger SJ, Rasmussen KL, Thomassen JQ, Deleuze JF, He Z, Napolioni V, Amouyel P, Jessen F, Kehoe PG, van C, Tsolaki M, Sánchez P, Sleegers K, Ingelsson M, Rossi G, Hiltunen M, Sims R, van der

RESEARCH TEAM

Group leader

Francisco Purroy Garcia

Principal investigator

Gerard Piñol Ripoll

Researchers

Gloria Arque Fuste

Robert Begue Gomez

Anna Carnes Vendrell

Farida Dakterzada Sedaghat

Juan Farre Pons

Cristina Garcia Vazquez

Gerard Josep Mauri Capdevila

Nuria Montala Palau

Fernando Paredes Carmona

Alejandro Quilez Martinez

Jordi Sanahuja Montesinos

Nuria Torreguitart Mirada

Daniel Vazquez Justes

Mikel Vicente Pascual

Núria Visa Reñe

PhD students

Júlia Calsina València

Amelia Peiró Riera

Cristina Pereira Priego

Ares Regue Vidart

Leila Romero El Khayat

Coral Torres Querol

Research technicians

Marc Canudes Solans

Sara Salvany Montserrat

External contributor

Raquel Mitjana Penella



4.1. Clinical neurosciences

Flier WM, Ramirez A, Andreassen OA, Frikke R, Williams J, Ruiz A, Lambert JC, Greicius MD, G, Arosio B, Benussi L, Boland A, Borroni B, Caffarra P, Daian D, Daniele A, Debette S, Dufouil C, Düzel E, Galimberti D, Giedraitis V, Grimmer T, Graff C, Grünblatt E, Hanon O, Hausner L, Heilmann S, Holstege H, Hort J, Jürgen D, Kuulasmaa T, van der Lugt A, Masullo C, Mecocci P, Mehrabian S, de Mendonça A, Moebus S, Nacmias B, Nicolas G, Olaso R, Papenberg G, Parnetti L, Pasquier F, Peters O, Pijnenburg Y, Popp J, Rainero I, Ramakers I, Riedel S, Scarmeas N, Scheltens P, Scherbaum N, Schneider A, Seripa D, Soinen H, Solfrizzi V, Spalletta G, Squassina A, van J, Tegos TJ, Tremolizzo L, Verhey F, Vyhnalek M, Wiltfang J, Boada M, García P, Puerta R, Real LM, Álvarez V, Bullido MJ, Clarimon J, García JM, Mir P, Moreno F, Pastor P, Piñol G, Molina L, Pérez J, Rodríguez E, Royo JL, Sánchez R, Dichgans M, Rujescu D. Association of Rare APOE Missense Variants V236E and R251G With Risk of Alzheimer Disease. *JAMA Neurol.* 2022. 79. (7):p. 652-663. IF:29,907. D1.

Purroy F, Vicente M, Arque G, Begue R, Farre J, Gallego Y, Gil MP, Mauri G, Montala N, Pereira C, Torres C, Vazquez D. Risk of New-Diagnosed Atrial Fibrillation After Transient Ischemic Attack. *Front Neurol.* 2022. 13. p. 905304-905304. IF:4,086. Q2.

Pallarès J, Torreguitart N, Arqué G, Portero M, Purroy F. Human atheromatous plaques expressed sensing adaptor STING, a potential role in vascular inflammation pathogenesis. *Thromb. Haemost.* 2022. 122. (9):p. 1621-1624. IF:6,681. Q1.

Villarejo A, García E, Piñol G, Del Olmo A, Viñuela F, Boada M, Franco E, de la Peña AI, Riverol M, Puig A, Abizanda P, Arroyo R, Baquero M, Fera I, Balasa M, Berbel Á, Rodríguez E, Vieira A, García G, Rodrigo S, Lleó A, Maurino J. Awareness of Diagnosis in Persons with Early-Stage Alzheimer's Disease: An Observational Study in Spain. *Neurol. Ther.* 2022. 11. (3):p. 1183-1192. IF:4,446. Q2.

Vazquez D, Aguirregoicoa I, Fernandez L, Carnes A, Dakterzada F, Sanjuan L, Mena A, Piñol G. Clinical impact of microbleeds in patients with Alzheimer's disease. *BMC Geriatr.* 2022. 22. (1):p. 774-774. IF:4,070. Q2.

Vena AB, Cabre X, Piñol R, Molina J, Purroy F. Assessment of incidence and trends in cerebrovascular disease in the healthcare district of Lleida (Spain) in the period 2010-2014. *Neurologia (Engl Ed).* 2022. 37. (8):p. 631-638.

Chino B, Rodríguez IC, Torres L, Cuesta P, Vendrell AC, Piñol G, Huerto R, Tahan N, Maestú F. Sex specific EEG signatures associated with cerebrospinal fluid biomarkers in mild cognitive impairment. *Clin. Neurophysiol.* 2022. 142. p. 190-198. IF:4,861. Q2.

Salvany S, Casanovas A, Piedrafito L, Gras S, Caldero J, Esquerda JE. Accumulation of misfolded SOD1 outlines distinct patterns of motor neuron pathology and death during disease progression in a SOD1(G93A) mouse model of amyotrophic lateral sclerosis. *Brain Pathol.* 2022. 32. (6):e13078. IF:7,611. Q1.

Font MÀ, García SM, Mengual JJ, Mena L, Avellaneda C, Serena J, Valls A, Chamorro Á, Ustrell X, Molina C, Cardona P, Guasch M, Purroy F, Rodríguez A, Palomeras E, Cocho D, Krupinski J, Cánovas D, García J, Zaragoza J, Puiggròs E, Matos N, Aragonès JM, Costa X, Sanjurjo E, Pedroza C, Monedero J, Almendros MC, Rybyeva M, Carrión D, Díaz G, Barceló M, Jiménez X, Salvat M, Elosúa R, Pérez de la Ossa N, Gómez M, Catalan Stroke Code and Reperfusion Consortium (Cat C. Determinants and Trends of the Use of Intravenous Thrombolysis for Minor Stroke: A Population-Based Study, 2016 to 2020. *Stroke.* 2022. 53. (11):p. 3289-3294. IF:10,170. D1.

Dakterzada F, Benitez ID, Targa A, Carnes A, Pujol M, Jove M, Minguez O, Vaca R, Sanchez M, Barbe F, Pamplona R, Piñol G. Blood-based lipidomic signature of severe obstructive sleep apnoea in Alzheimer's disease. *Alzheimers Res. Ther.* 2022. 14. (1):p. 163-163. IF:8,823. D1.

Sol J, Colàs L, Mauri G, Molina J, Galo JD, Torres C, Aymerich N, Ois A, Roquer J, Tur S, García MDC, Marti J, Cruz A, Segura T, Pamplona R, Portero M, Arque G, Jove M, Purroy F. Ischemia preconditioning induces an adaptive response that defines a circulating metabolomic signature in ischemic stroke patients. *J. Cereb. Blood Flow Metab.* 2022. 42. (12):p. 2201-2215. IF:6,960. Q1.

García Á, Seró L, Urrea X, Cardona P, Zaragoza J, Krupinski J, Gómez M, Sala NM, Catena E, Palomeras E, Serena J, Hernandez M, Boned S, Olivé M, Requena M, Muchada M, Tomasello A, Molina CA, Salvat M, Escudero M, Jimenez X, Davalos A, Jovin TG, Purroy F, Abilleira S, Ribo M, de la Ossa NP, RA-CECAT I. Workflow Times and Outcomes in Patients Triaged for a Suspected Severe Stroke. *Ann Neurol.* 2022. 92. (6):p. 931-942. IF:11,274. D1.

Garcia A, Millan M, Rubiera M, Bustamante A, Requena M, Dorado L, Olive M, Jimenez X, Soto A, Querol M, Hernandez M, Gomis M, Cardona P, Urrea X, Purroy F, Silva Y, Ustrell X, Esteve P, Salvat M, Gallofre M, Molina C, Davalos A, Jovin T, Abilleira S, Ribo M, Perez de la Ossa N, RACECAT I. Workflows and Outcomes in Patients With Suspected Large Vessel Occlusion Stroke Triaged in Urban and Nonurban Areas. *Stroke.* 2022. 53. (12):p. 3728-3740. IF:10,170. D1.

Laboratories

Biomedicine II 2nd floor

973 702 935



fpurroy.lleida.ics@gencat.cat



4.1. Clinical neurosciences

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Piñol Ripoll, Gerard	Instituto de Salud Carlos III (ISCIII)	Importancia del sueño y los ritmos circadianos en la biología y evolución clínica de los sujetos en el continuum de la Enfermedad de Alzheimer	32.670

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Purroy Garcia, Francisco	Instituto de Salud Carlos III (ISCIII)	RICORS-ICTUS	138.274
Portero Otin, Manuel i Purroy Garcia, Francisco	Diputació de Lleida	Perspectivas clínicas de la biología de sistemas aplicada al análisis de placas carotídeas humanas: ILER-CAROTID	50.000
Pamplona Gras, Reinald i Piñol Ripoll, Gerard	Diputació de Lleida	La vía de señalización mediada por los lípidos bioactivos diacilglicerol-ácido fosfatídico como biomarcadores para discriminar los estadios iniciales de la enfermedad de Alzheimer del envejecimiento normal	50.000
Purroy Garcia, Francisco	Instituto de Salud Carlos III (ISCIII)	Determinación del tiempo de inicio del ictus isquémico y el tejido recuperable mediante la firma ómica: OMIC IS BRAIN	185.130



4.2. Evolutionary developmental neurobiology

The group's research focuses on the study of the amygdala, a very complex brain structure involved in the control of emotions, social behavior and cognition, which is altered in all psychiatric disorders. Currently it is not possible to explain the different outcomes of distinct mental conditions, posing a real challenge on their treatment. To solve this problem, the group is trying to decipher the amygdala at molecular, cellular and circuit levels using an evolutionary development biology approach.

Previous research of the group has shown that the high complexity of the amygdala can be largely explained by the different embryonic origin of its neurons, which conditions their adult phenotype. With this vision in mind, the group is currently developing research to study the transcriptome and the connections of amygdalar neurons with different embryonic origin. Comparison of the results with public databases of genes involved in distinct mental disorders will help to understand the relation between different susceptibility genes to specific amygdalar neurons and networks regulating emotion and social behavior. This will be the first step to design more accurate therapeutic targets for distinct mental disorders and will open the venue for precision medicine in Psychiatry.

Publications

Medina L, Abellan A, Desfilis E. Evolving Views on the Pallium. *Brain Behav Evol.* 2022. 96. (4-6):p. 1-19. IF:1,919. Q2.

Pessoa L, Medina L, Desfilis E. Refocusing neuroscience: moving away from mental categories and towards complex behaviours. *Philos. Trans. R. Soc. B-Biol. Sci.* 2022. 377. (1844):p. 20200534-20200534. IF:6,671. Q1.

Morales L, Gonzalez A, Desfilis E, Medina L. Precise Mapping of Otp Expressing Cells Across Different Pallial Regions Throughout Ontogenesis Using Otp-Specific Reporter Transgenic Mice. *Front. Neural Circuits.* 2022. 16. p. 831074-831074. IF:3,342. Q3.

Adiletta A, Pross A, Taricco N, Sgado P. Embryonic Valproate Exposure Alters Mesencephalic Dopaminergic Neurons Distribution and Septal Dopaminergic Gene Expression in Domestic Chicks. *Front. Integr. Neurosci.* 2022. 16. p. 804881-804881. IF:3,213. Q2.

Metwalli AH, Abellan A, Freixes J, Pross A, Desfilis E, Medina L. Distinct Subdivisions in the Transition Between Telencephalon and Hypothalamus Produce Otp and Sim1 Cells for the Extended Amygdala in Sauropsids. *Front. Neuroanat.* 2022. 16. p. 883537-883537. IF:3,543. D1.

Pross A, Metwalli AH, Desfilis E, Medina L. Developmental-Based Classification of Enkephalin and Somatostatin Containing Neurons of the Chicken Central Extended Amygdala. *Front. Physiol.* 2022. 13. p. 904520-904520. IF:4,755. Q1.

RESEARCH TEAM

Group leaders

Ester Desfilis Barcelo
Loreta Medina Hernandez

Researcher

Antonio Abellan Rodenas

PhD students

Júlia Freixes Vidal
Alba Gonzalez Alonso
Alek Hanafi-metwalli
Alessandra Pross

Laboratories

Biomedicine II 3rd floor
973 702 961

Email

loreta.medina@udl.cat
ester.desfilis@udl.cat

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Medina Hernandez, Loreta	Ministerio de Ciencia e Innovación	Arquitectura molecular de los centros y redes del cerebro que regulan emoción y cognición: implicaciones para la Psiquiatría.	131.769



4.3. Experimental neuromuscular pathology

The group studies the cellular and molecular bases of neuromuscular disorders, particularly, motoneuron diseases such as amyotrophic lateral sclerosis (ALS) and spinal muscular atrophy (SMA). For this, we use in vitro and in vivo models, mainly chick embryo and transgenic mice. Several lines of work are currently underway to examine the role of excitotoxicity, neuroinflammation and changes in central and peripheral synapses in ALS and SMA pathogenesis, and to identify new targets for future therapies. Another important aspect of our research is the analysis of aging-related changes in the neuromuscular system.

Publications

Franco J, Gatius A, Armengol JA, Arumugam S, Moradi M, Sendtner M, Calderó J, Tabares L. SMN Is Physiologically Downregulated at Wild-Type Motor Nerve Terminals but Aggregates Together with Neurofilaments in SMA Mouse Models. *Biomolecules*. 2022. 12. (10):1524. IF: 6,064. Q2.

Salvany S, Casanovas A, Piedrafito L, Gras S, Calderó J, Esquerda JE. Accumulation of misfolded SOD1 outlines distinct patterns of motor neuron pathology and death during disease progression in a SOD1(G93A) mouse model of amyotrophic lateral sclerosis. *Brain Pathol*. 2022. 32. (6):e13078. IF: 7,611. Q1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Calderó Pardo, Jordi i Tarabal Mostazo, Olga	Ministerio de Ciencia e Innovación	Mecanismos subyacentes a la patología del circuito motor y la miopatía primaria en atrofia muscular espinal: identificación de dianas para terapias combinadas con nusinersen	226.200

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Calderó Pardo, Jordi	Fundacio La Marato de TV3	Preclinical Analysis of new combinatorial treatments for spinal muscular atrophy (SMA): Effects on motoneuron survival, synaptic integrity, and skeletal muscle preservation	198.375

RESEARCH TEAM

Group leader

Jordi Calderó Pardo

Principal investigator

Olga Tarabal Mostazo

Researchers

Anna Maria Casanovas Llorens
Josep Enric Esquerda Colell
Sara Hernández Estañol

PhD students

Alaó Gatius Puchercós
Silvia Gras Artells
Paula Guillamón Gil

Research technician

Lidia Piedrafito Llorens

Laboratories

Biomedicine I 1st floor
973 702 440

Email

jordi.caldero@udl.cat



4.4. Molecular and developmental neurobiology

Our goal is the characterization of new molecular mechanisms involved in the formation (development) and remodelling (adult neurogenesis) of the neuronal circuits in the vertebrate nervous system. Our models are genetically modified mice and we expect that our studies will help to shed some light on or understanding of the aetiology of neurological and psychiatric disorders such as schizophrenia and the autism as well as neurodegenerative diseases such as Alzheimer's disease, in humans. In our studies we use a wide spectrum of technical approaches, from in vivo (behaviour, mouse genetics, in utero electroporation and tissue processing and analysis), in vitro (primary tissue culture of explants or of dissociated neurons) to biochemistry and molecular biology.

Publications

Ruiz A, Navaridas R, Vidal M, Perramon A, Yeramian A, Felip I, Eritja N, Egea J, Encinas M, Matias X, Dolcet X. Lack of extracellular matrix switches TGF- β induced apoptosis of endometrial cells to epithelial to mesenchymal transition. *Sci Rep.* 2022. 12. (1):p. 14821-14821. IF:4,996. Q2.

Altes G, Vaquero M, Cuesta S, Anerillas C, Macia A, Espinet C, Ribera J, Bellusci S, Klein OD, Yeramian A, Dolcet X, Egea J, Encinas M. A dominant negative mutation uncovers cooperative control of caudal Wolffian duct development by Sprouty genes. *Cell. Mol. Life Sci.* 2022. 79. (10):p. 514-514. IF:9,207. Q1.

RESEARCH TEAM

Group leader

Joaquim Egea Navarro

Principal investigator

Carmen Espinet Mestre

PhD students

Nathan Nicholson Sabate

Bahira Zammou

Research technician

Sonia Rius Balcells

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Egea Navarro, Joaquim	Ministerio de Ciencia e Innovación	Estudio de la RhoGTPasa Rnd3/RhoE en la formación de pliegues corticales durante el desarrollo del cerebro mediante el uso de ratones modificados genéticamente	127.050

Laboratories

Biomedicine I 1st floor
973 702 961

Email

joaquim.egea@udl.cat

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Egea Navarro, Joaquim	Ministerio de Ciencia e Innovación	Papel de Rnd3/RhoE, uno de los efectores de las proteínas FLRT, en guía axonal y la formación de pliegues en la corteza durante el desarrollo del cerebro	108.900



4.5. Neurocognition, psychobiology of the personality and behavioral genetics

The researchers converge in the interest in the search for the biological bases of personality and their disorders. Based on biological-factorial personality research models, the relationship between personality with the endocrine system (gonadal hormones), central nervous system (neurotransmitters and genetic polymorphisms) and neurophysiology (electrophysiology) is investigated. The current research focuses on impulsive-uninhibited personality relationships and emotions with neural monoaminergic neurotransmission (norepinephrine, dopamine, serotonin and MAO), both at a biochemical level (neurotransmitters and metabolites) and at the level of molecular genetics. The biological bases of personality are also investigated through the search of techniques of computerized electrophysiology and functional infrared spectroscopy (fNIR) applied to the study of emotions, cognitive functions and the frontal lobe (Laboratory of Human Behaviour).

Publications

Urieta P, Sorrel MA, Aluja A, Balada F, Lacomba E, García LF. Exploring the relationship between personality, decision-making styles, and problematic smartphone use. *Curr. Psychol.* 2022. IF:2,387. Q2.

García LF, Aluja A, Urieta P, Gutiérrez F. High convergent validity among the five-factor model, PID-5-SF, and PiCD. *Pers. Disord. Theory Res. Treat.* 2022. 13. (2):p. 119-132. IF:4,627. Q2.

Naor R, Glicksohn J, Aluja A. Locating the Dark Triad in a Multidimensional Personality Space. *Span J Psychol.* 2022. 25. e14. IF:1,526. Q3.

Aluja A, García LF, Rossier J, Ostendorf F, Glicksohn J, Oumar B, Bellaj T, Ruch W, Wang W, Suranyi Z, Scigala D, Cekrljija Đ, Stivers AW, Blas LD, Valdivia M, Ben S, Atitsogbe KA, Hansenne M. Dark Triad Traits, Social Position, and Personality: A Cross-Cultural Study. *J. Cross-Cult. Psychol.* 2022. 53. (3-4):p. 380-402. IF:2,577. Q3.

García LF, Aluja A, Rossier J, Ostendorf F, Glicksohn J, Oumar B, Bellaj T, Ruch W, Wang W, Kövi Z, Scigala D, Cekrljija Đ, Stivers AW, Di L, Valdivia M, Ben S,

Atitsogbe KA, Hansenne M. Exploring the stability of HEXACO-60 structure and the association of gender, age, and social position with personality traits across 18 countries. *J. Pers.* 2022. 90. (2):p. 256-276. IF:5,429. Q1.

Puigarnau S, Fernández A, Obis E, Jové M, Castañer M, Pamplona R, Portero M, Camerino O. Metabolomics reveals that fittest trail runners show a better adaptation of bioenergetic pathways. *J Sci Med Sport.* 2022. 25. (5):p. 425-431.

Soto A, Camerino O, Iglesias X, Anguera MT, Castañer M. LINCE PLUS software for systematic observational studies in sports and health. *Behav Res Methods.* 2022. 54. (3):p. 1263-1271. IF:5,953. D1.

Aluja A, Sorrel MA, García LF, García O, Gutiérrez F. Factor Convergence and Predictive Analysis of the Five Factor and Alternative Five Factor Personality Models with the Five-Factor Personality Inventory for ICD-11 (FFICD). *J. Pers. Disord.* 2022. 36. (3):p. 296-319. IF:3,367. Q3.

Aluja A, Sorrel MA, García LF, García O, Gutiérrez F. Factor convergence and predictive analysis of the five factor and alternative five factor personality models with the five-factor personality Inventory for ICD-11 (FFICD). *J. Pers. Disord.* 2022. 36. (3):p. 296-296. IF:3,367. Q3.

Le Y, Aluja A, Rossi G, Lapalme M, Forget K, García LF, Rolland JP. Construct Validity of the Dutch, English, French, and Spanish LPFS-BF 2.0: Measurement Invariance Across Language and Gender and Criterion Validity. *J Pers Disord.* 2022. 36. (6):p. 662-679. IF:3,367. Q3.

Cekrljija D, Mrda P, Vujakovic L, Aluja A. Relationship between humor styles and alternative five factors of personality. *Pers. Individ. Differ.* 2022. 194. 111625. IF:3,950. Q2.

Sorrel MA, Aluja A, García LF, Gutiérrez F. Psychometric Properties of the Five-Factor Personality Inventory for ICD-11 (FFiCD) in Spanish Community Samples. *Psychol Assess.* 2022. 34. (3):p. 281-293. IF:6,083. Q1.

RESEARCH TEAM

Group leader

Anton Aluja Fabregat

Researchers

Neus Aymami Sanroma

Ferran Balada Nicolau

External contributors

Marta Castañer Balcells

Oscar Garcia Lopez

Luis Francisco Garcia Rodriguez

Laboratories

Biomedicine II 1st floor

973 702 496

973 702 498

Email

anton.aluja@udl.cat

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Aluja Fabregat, Anton	Ministerio de Ciencia e Innovación	Efecto de la personalidad en la toma de decisiones y actividad de la corteza prefrontal (cpf) mediante espectroscopia funcional por infrarrojo cercano (fnir)	95.590



4.6. Neuroimmunology

The objectives of our research team are:

- To uncover knowledge of the as yet undiscovered etiopathological processes, of multiple sclerosis.
- To identify biomarkers of clinical evolution and / or response to treatment that help the physician to be able to make a treatment personalization with the ultimate goal of improving the patient's quality of life.

Our primary focus is the study of environmental factors triggering the disease with a special interest in oxidative processes and mitochondrial function.

Publications

Sainz de la Maza S, Maurino J, Borges M, Martín J, Sotoca J, Alonso A, Caminero AB, Borrega L, Sánchez JL, Barrero FJ, Calles C, Brieva L, Blasco MR, García JD, Campo MD, Navarro L, Agüera E, Garcés M, Carmona O, Gabaldón L, Forero L, Hervás M, de Alda LR, Gómez R, Castillo T. Measuring productivity loss in early relapsing-remitting multiple sclerosis. *Mult. Scler. Relat. Disord.* 2022. 58. p. 103398-103398. IF:4,808. Q2.

Fernández JI, Monreal E, Kuhle J, Meca V, Meca J, Izquierdo G, Oreja C, Gascón F, Sainz de la Maza S, Walo PE, Lapuente P, Maceski A, Rodríguez E, Roldán E, Villarrubia N, Saiz A, Blanco Y, Diaz C, Valero G, Diaz J, Aladro Y, Brieva L, Íñiguez C, González I, Rodríguez de Antonio LA, García JM, Sabin J, Llufríu S, Masjuan J, Costa L, Villar LM. Baseline Inflammatory Status Reveals Dichotomic Immune Mechanisms Involved In Primary-Progressive Multiple Sclerosis Pathology. *Front. Immunol.* 2022. 13. p. 842354-842354. IF:8,786. Q1.

Sancho A, Gil A, Quirant B, Nogueras L, Peralta S, Solana MJ, Gonzalez C, Gallego Y, Quibus L, Ramo C, Presas S, Martinez E, Torres P, Hervas JV, Valls J, Brieva L. Seroprevalence of SARS-CoV-2 in a Cohort of Patients with Multiple Sclerosis under Disease-Modifying Therapies. *J Clin Med.* 2022. 11. (9):2509. IF:4,964. Q2.

Vermersch P, Brieva L, Fox RJ, Paul F, Ramio L, Schwab M, Moussy A, Mansfield C, Hermine O, Maciejowski M, AB07002 G. Efficacy and Safety of Masitinib in Progressive Forms of Multiple Sclerosis: A Randomized, Phase 3, Clinical Trial. *Neurol.-Neuroimmunol. Neuroinflammation.* 2022. 9. (3):e1148. IF:11,360. D1.

Brieva L, Estruch BC, Merino J, Meca V, Rio J, Rodriguez A, Agüera E, Ara JR, Luque AA, Garcia CA, Blanco Y, Castillo T, Costa L, González M, Pascual LL,

Llaneza M, Ginés MLM, Matias J, Meca JE, Bilbao MM, Sempere AP, Romero L, Saiz A, Moral E. Disease modifying therapy switching in relapsing multiple sclerosis: A Delphi consensus of the demyelinating expert group of the Spanish society of neurology. *Mult. Scler. Relat. Disord.* 2022. 63. p. 103805-103805. IF:4,808. Q2.

Castillo T, Gomez R, Borges M, Martin J, Sotoca J, Alonso A, Caminero AB, Borrega L, Sanchez JL, Barrero FJ, Calles C, Brieva L, Blasco MR, Garcia JD, del Campo M, Navarro L, Agüera E, Garcés M, Carmona O, Gabaldon L, Forero L, Hervas M, Mauriño J, Sainz de la Maza S. Long-term prognosis communication preferences in early-stage relapsing-remitting multiple sclerosis. *Mult. Scler. Relat. Disord.* 2022. 64. p. 103969-103969. IF:4,808. Q2.

Gonzalez C, Lopez R, Brieva L. The efficacy of combining topiramate and 4-aminopyridine to reduce relapses and interictal progression in two cases of episodic ataxia type 2. *Neurol. Sci.* 2022. 43. (8):p. 5099-5101. IF:3,830. Q2.

Martín L, Presas S, Rovira À, Capellades J, Massuet A, Ramió L, Tintoré M, Brieva L, Moral E, Cano A, Blanco Y, Batlle J, Carmona O, Gea M, Hervás JV, Ramo C. Gadolinium-enhanced brain lesions in multiple sclerosis relapse. *Neurologia.* 2022. 37. (7):p. 557-563. IF:5,486. Q1.

Martín L, Presas S, Rovira À, Capellades J, Massuet A, Ramió L, Tintoré M, Brieva L, Moral E, Cano A, Blanco Y, Batlle J, Carmona O, Gea M, Hervás JV, Ramo C. Gadolinium-enhanced brain lesions in multiple sclerosis relapse. *Neurologia (Engl Ed).* 2022. 37. (7):p. 557-563.

Meca JE, Fernandez M, Garcia E, Moreno S, Otero S, Rus M, Villar LM, Eichau S, Fernandez O, Izquierdo G, Álvarez JC, Arnal C, Arroyo R, Brieva L, Calles C, Garcia A, Gonzalez M, Hernandez MA, Moral E, Olascoaga J, Oliva P, Oreja C, Ortiz R, Oterino A, Prieto JM, Ramio L, Rodriguez A, Saiz A, Tintore M, Montalban X. Consensus statement on the use of alemtuzumab in daily clinical practice in Spain. *Neurologia (Engl Ed).* 2022. 37. (8):p. 615-630.

Saposnik G, Andhavarapu S, Sainz de la Maza S, Castillo T, Borges M, Baron BP, Sotoca J, Alonso A, Caminero AB, Borrega L, Sanchez JL, Barrero FJ, Calles C, Brieva L, Blasco MR, JDG, del Campo M, Navarro L, Agüera E, Garcés M, Carmona O, Gabaldon L, Forero L, Hervas M, Garcia E, Terzaghi M, Gomez R, Maurino J. Delayed cognitive processing and treatment status quo bias in early-stage multiple sclerosis. *Mult. Scler. Relat. Disord.* 2022. 68. p. 104138-104138. IF:4,808. Q2.

RESEARCH TEAM

Group leader

Luis Brieva Ruiz

Researchers

Ana Rita Gil Sanchez

Cristina Gonzalez Mingot

Silvia Peralta Moncusi

Laura Quibus Requena

Agustin Sancho Saldana

M^a Jose Solana Moga

External contributors

Hugo Gonzalo Benito

José Vicente Hervás Garcia

Laboratories

Biomedicine I ground floor

973 705 367

Email

lbrieva.lleida.ics@gencat.cat



4.6. Neuroimmunology

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Gonzalez Mingot, Cristina	Asociación Esclerosis Múltiple España	The Prognostic Value of Cholesterol Esters in the Progression of Multiple Sclerosis* (PROCOLEM)	25.000



4.7. Neuronal signalling unit

The neuronal signalling unit is a research group focused on the study of the mechanisms of cell degeneration occurring in the context of spinal muscular atrophy (SMA) disease. SMA is a genetic childhood neuromuscular disorder characterized by the loss of the spinal cord motoneurons due to the mutation of the SMN1 gene (Survival Motor Neuron). SMN1 gene codifies for a protein called SMN, which reduction causes motoneuron and muscle degeneration by molecular mechanisms still under study.

Publications

Miralles MP, Sansa A, Beltran M, Soler RM, Garcera A. Survival motor neuron protein and neurite degeneration are regulated by Gemin3 in spinal muscular atrophy motoneurons. *Front. Cell. Neurosci.* 2022. 16. p. 1054270-1054270. IF:6,147. Q1.

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Soler Tatche, Rosa Maria	Instituto de Salud Carlos III (ISCIII)	Analysis of the beneficial effects of calpain inhibitors treatment and combined therapies on Spinal Muscular Atrophy	82.280
Soler Tatche, Rosa Maria	Instituto de Salud Carlos III (ISCIII)	Nuevas terapias para el tratamiento de la Atrofia Muscular Espinal: inhibidores de la calpaina y células madre mesenquimales modificadas	81.070

RESEARCH TEAM

Group leader

Rosa Maria Soler Tatche

Principal investigator

Ana Garcera Teruel

PhD students

Maria Beltran Perelló

Maria Pilar Miralles Exposito

Alba Sansa Zaragoza

Laboratories

Biomedicine I 4th floor

973 702 264

Email

rosa.soler@udl.cat



4.8. Biological foundations of mental disorders

The group comprises mainly members of the psychiatry service of the Santa Maria University Hospital, Lleida and biomedical research is conducted by sub-teams that share a common interest in the study of the biological bases of various mental disorders, mainly bipolar disorder, psychotic disorder and personality disorder.

Publications

Sainz de la Maza S, Maurino J, Borges M, Martín J, Sotoca J, Alonso A, Caminero AB, Borrega L, Sánchez JL, Barrero FJ, Calles C, Brieva L, Blasco MR, García JD, Campo MD, Navarro L, Agüera E, Garcés M, Carmona O, Gabaldón L, Forero L, Hervás M, de Alda LR, Gómez R, Castillo T. Measuring productivity loss in early relapsing-remitting multiple sclerosis. *Mult. Scler. Relat. Disord.* 2022. 58. p. 103398-103398. IF:4,808. Q2.

Paül A, Guilera T, Lasala J, Guerrero M, Ganau J, Pifarre J. Increase in Stress Level in Public Spaces Following the Application of Measures Against COVID-19: An Exploratory Study. *Ecopsychology.* 2022. 14. (1):p. 30-36.

Palacios R, Llorca V, Arteaga G, Del Agua E. Cariprazine Use in Combination With a Mood Stabilizer in First Episode Mania. *Front Psychiatry.* 2022. 13. p. 828088-828088. IF:5,435. Q2.

Iglesias M, Díez Á, Llorca V, Núñez P, Castaño C, Bote B, Segarra R, Sanz J, Molina V. Relation between EEG resting-state power and modulation of

P300 task-related activity in theta band in schizophrenia. *Prog. Neuro-Psychopharmacol. Biol. Psychiatry.* 2022. 116. p. 110541-110541. IF:5,201. Q2.

Almodovar C, Guardiola M, Giralt M, Gallego C, Salgado P, Miret S, Salvador R, Muñoz MJ, Lazaro L, Guerrero A, Parellada M, Carrión MI, Cuesta MJ, Maristany T, Sarro S, Fañanás L, Callado LF, Arias B, Pomarol E, Fatjo M. NRN1 Gene as a Potential Marker of Early-Onset Schizophrenia: Evidence from Genetic and Neuroimaging Approaches. *Int J Mol Sci.* 2022. 23. (13):7456. IF:6,208. Q1.

Irigoyen M, Llorca V, Puigdevall M. Peculiarities and Recommendations in Suicidal Behavior in Patients with Intellectual Disabilities. *Global Journal of Intellectual & Developmental Disabilities.* 2022. 10. (3):555757.

Atienza B, Guillen V, Irigoyen M, Balanza V. Screening of substance use and mental health problems among Spanish medical students: A multicenter study. *J. Affective Disord.* 2022. 311. p. 391-398. IF:6,533. Q1.

Yuguero O, Rius N, Soler J, Esquerda M. Increase of burnout among emergency department professionals due to emotional exhaustion during the SARS-Cov2 pandemic: Evolution from 2016 to 2021. *Medicine (Baltimore).* 2022. 101. (47):p. 31887-31887. IF:1,817. Q3.

Agusti D, Guilera T, Lladós MG. Gender differences between the emotions experienced and those identified in an urban space, based on heart rate variability. *Cities.* 2022. 131. 104000. IF:6,077. D1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Mur Lain, Maria	Fundació La Marató de TV3	Disentangling clinical, neurobiological, and genetic correlates of first-episode mania in Bipolar. The NOTION Project	55.607
Vall Boada, Gemma	Fundació La Marató de TV3	Assaig clínic de fase III, aleatoritzat, controlat amb comparador actiu, per estudiar l'eficàcia i la seguretat del programa de Remediació Cognitiva Integral (INCREM) en pacients amb Depressió	62.187
Gallart Palau, Xavier i Mur Lain, Maria	European Commission	Validación de las BP-EVs como una nueva generación de nanovectores para la liberación focalizada de fármacos en el sistema nervioso central	178.650
Gallart Palau, Xavier i Batalla, Iolanda	Diputació de Lleida	Extracellular vesicles from industrial by-products: next generation nanocarriers in biomedicine	50.000

RESEARCH TEAM

Group leaders

Maria Mur Lain
Josep Pifarre Paredero

Principal investigator

Teresa Guilera Lladós

Researchers

Carla Albert Porcar
Marina Adrados Perez
Iolanda Batalla Llordes
Laura Bosa Lopez
Esther Castan Campanera
Montse Esquerda Areste
Irene Forcada Pach
Lucia Ibarra Pertusa
Maria Irigoyen Otiñano
Vicent Llorca Bofi
Salvador Miret Fallada
Eugènia Nicolau Subires
Lluís Rossello Aubach
Aurora Torrent Seto
Gemma Vall Boada

External contributors

Ester Mora Claramunt
Vanessa Pera Guardiola

Laboratories

HUSM

973 727 222

Ext1647

Email

pifarre1@comll.cat

mmur@gss.cat



4.8. Biological foundations of mental disorders

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Guilera Lladós, Teresa	Universitat de Lleida	Estats emocionals en l'espai públic - INDEST	7.000



4.9. +Pec Proteomics

+PPRG aims to apply next-generation clinical proteomics, mass spectrometry and Systems Biology to the uncovering of altered intercellular communication mechanisms associated with neuropathology and systemic pathologies. Our young research group emphasizes those research actions focused on providing further understanding on the molecular basis of neurodegeneration and dementia-associated neuropathology.

In a related vein, we prioritize bench-to-bedside research focusing on further understand the potential of extracellular vesicles (EVs), considered as basic units of an intricate intercellular communication mechanism, and their potential roles in the development of diagnostic, stratification and clinical prognostic markers, as well as highly biocompatible nanovectors in advanced therapeutic applications in the field of personalised medicine.

Publications

Lorca C, Laparra M, Cespedes MV, Casani L, Florit S, Jove M, Mota N, Vilella E, Gallart X, Serra A. Industrial By-Products As a Novel Circular Source of Biocompatible Extracellular Vesicles. *Adv. Funct. Mater.* 2022. 32. (29):2202700. IF:19,924. D1.

Giordano B, Lorca C, March J, Rábano A, Del Ser T, Serra A, Gallart X. Oral Microbiota, Its Equilibrium and Implications in the Pathophysiology of Human Diseases: A Systematic Review. *Biomedicines.* 2022. 10. (8):1803. IF:4,757. Q2.

RESEARCH TEAM

Group leader

Xavier Gallart Palau

PhD student

José Antonio Sánchez Milán

Laboratories

Biomedicine II 4th floor

973 702 224

Email

xgallart@irbllleida.cat

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Gallart Palau, Xavier	Instituto de Salud Carlos III (ISCIII)	Marcadores de pronóstico y estratificación en vesículas extracelulares cerebrales circulantes en plasma para identificar alteraciones incipientes de la unidad neurovascular en el Alzheimer	93.170
Gallart Palau, Xavier i Batalla, Iolanda	Diputació de Lleida	Extracellular vesicles from industrial by-products: next generation nanocarriers in biomedicine	50.000
Gallart Palau, Xavier i Mur Lain, Maria	European Commission	Validación de las BP-EVs como una nueva generación de nanovectores para la liberación focalizada de fármacos en el sistema nervioso central	178.650



Area 5. Nutrition and cell metabolism

Area coordinator: Dr. Joaquim Ros Salvador

We study the ageing process, myocardial differentiation, neurodegenerative diseases and cell signalling in relation to oxidative stress in various cellular, animal and human models, using experimental and theoretical methods.

Groups

5.1 Molecular biology of the yeast

5.2 Biochemistry of oxidative stress

5.3 Metabolic physiopathology

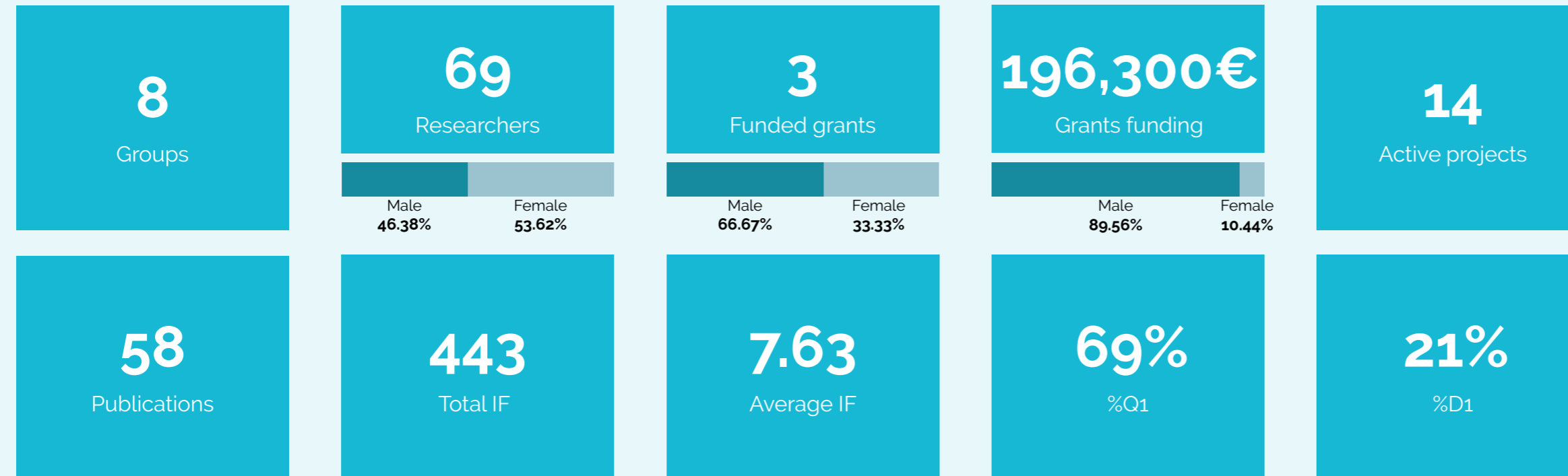
5.4 Systems biology and statistical methods for biomedical research

5.5 Clinical and experimental research in digestive and hematological pathology

5.6 Cell signalling and apoptosis group

5.7 Cell signalling in yeast

5.8 Nutrition, metabolism and microbiota in patients with heart failure (NUTRIMMIC)





5.1. Molecular biology of yeast

The group studies the effect of environmental stress conditions on cell proliferation in yeast *Saccharomyces cerevisiae*, as a model for a genetically manipulable unicellular eukaryotic organism, as well as the transduction pathways and enzymatic systems involved in the defense and repair of stress damage.

Particular emphasis is placed on oxidative stress (given its biomedical implications), and on the protective role of glutaredoxin systems, which are involved in various cellular processes, since, among other functions, they participate in the formation of proteins with Fe-S centres. Defects in these co-factors cause various cellular disorders such as mitochondrial dysfunc-

tion, alterations in iron homeostasis and genomic instability, alterations associated with numerous human diseases.

Publications

Belli G, Colomina N, Castells L, Lorite NP. Post-Translational Modifications of PCNA: Guiding for the Best DNA Damage Tolerance Choice. *J. Fungi*. 2022. 8. (6):621. IF:5,724. Q1.

Odriozola I, Belli G, Puigpinos J, Herrero E, Martin O. Screening the Antioxidant Activity of Thermal or Non-Thermally Treated Fruit Juices by In Vitro and In Vivo Assays. *Beverages*. 2022. 8. (2):36.

RESEARCH TEAM

Group leader

Gemma Belli Martinez

Laboratories

Biomedicine I 4th floor. Lab 4a

973 702 940

973 702 409

Email

gemma.belli@udl.cat



5.2. Biochemistry of oxidative stress

The Biochemistry of Oxidative Stress group analyzes the alteration of mitochondrial functions in Friedreich Ataxia (FA), a rare, cardio-neurodegenerative disease caused by deficient levels of frataxin, a mitochondrial protein. This deficit is due to mutations (mostly GAA triplet insertions) in the FXN gene. The most important features are, among others, ataxia, dysarthria, cardiac hypertrophy; some patients also develop diabetes.

To study this pathology, the group uses primary cultures of neurons -obtained from the dorsal root ganglion- and cardiomyocytes, which are the tissues most affected in this disease, and fibroblast cell lines derived from patients. We have also incorporated a new mouse model FXN151F, with a point mutation that involves a 95% reduction in normal frataxin levels and that shows functional features very close to those observed in FA patients.

At the molecular level, we have observed alterations in the mitochondrial proteome, in mitochondrial iron and calcium homeostasis that impact the redox state of proteins and levels of calcium transporters such as NCLX, mitochondrial pore opening, the function of complexes I-III of the electron transport chain that would affect the rate of respiration and ATP synthesis and, in summary, loss of mitochondrial functions. Based on the results obtained, and

since there is currently no effective cure, we design therapeutic strategies trying to improve the patients' quality of life; in this sense, we are analyzing the effects of different compounds that increase frataxin levels such as calcitriol. We have observed that this vitamin restores altered levels of the aforementioned markers and, therefore, a pilot clinical trial is being carried out in collaboration with IDIBGI. We also test molecules such as leriglitzone, in collaboration with the company Minoryx Therapeutics, focused on restoring the mitochondrial membrane potential and/or mitochondrial biogenesis.

Publications

Medina M, Sanz A, Britti E, Delaspre F, Cabiscol E, Ros J, Tamarit J. Mice harboring the FXN I151F pathological point mutation present decreased frataxin levels, a Friedreich ataxia-like phenotype, and mitochondrial alterations. *Cell. Mol. Life Sci.* 2022. 79. (2): p. 74. IF: 9,207. Q1.

Alves R, Pazos M, Medina M, Sanz A, Delaspre F, Tamarit J. Evolution of an Iron-Detoxifying Protein: Eukaryotic and Rickettsia Frataxins Contain a Conserved Site Which Is Not Present in Their Bacterial Homologues. *Int J Mol Sci.* 2022. 23. (21):13151. IF: 6,208. Q1.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
Ros Salvador, Joaquin	Ministerio de Ciencia e Innovación	Desarrollo de la leriglitzona para el Síndrome de Rett y trastornos relacionados	147.800
Delaspre, Fabien	Association Française Ataxie de Friedrich	Étude comparative de souris 151F pour discerner les premières étapes de la pathogénère de l'Ataxie de Friedreich	28.000

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Ros Salvador, Joaquim i Tamarit Sumalla, Jordi	Ministerio de Ciencia e Innovación	Mecanismos de disfuncion mitocondrial y nuevas estrategias terapéuticas en modelos celulares y animales de Ataxia de Friedreich	193.600
Ros Salvador, Joaquin	Ministerio de Ciencia e Innovación	Nuevo fármaco dirigido a la Ataxia de Friedreich	143.750
Delaspre, Fabien	Association Française Ataxie de Friedrich	Effet du Calcitriol dans un nouveau modèle murin pour l'AF de mutation ponctuelle I151F	50.000

RESEARCH TEAM

Group leader

Joaquim Ros Salvador

Principal investigators

Elisa Cabiscol Catala

Fabien Delaspre

Jordi Tamarit Sumalla

PhD students

Marta Medina Carbonero

Maria Pazos Gil

Arabela Sanz Alcázar

Research technician

Roser Pane Domenec

Laboratories

Biomedicine I 4th floor

973 702 275

Email

joaquim.ros@udl.cat



5.3. Metabolic physiopathology

The overall goal of our investigations concerned the role of metabolism and oxidative stress (including free radical chemistry, redox biology and antioxidants) in the aging process and age-associated diseases. We have investigated the role of metabolism and oxidative stress in animal models (vertebrates and invertebrates) and humans in which aging rate and longevity are different or are experimentally modified (e.g. caloric restriction, methionine restriction, and genetic manipulations) or pathologically affected (e.g. metabolic diseases, cardiovascular disease, cancer, neurodegenerative diseases). If the aging process could be slowed or even reverted the incidence of age-related diseases would diminish significantly.

Publications

Sánchez E, Sánchez M, López C, Bermúdez M, Valdivielso JM, Farràs C, Pamplona R, Torres G, Mauricio D, Castro E, Fernández E, Lecube A. Is There a Link between Obesity Indices and Skin Autofluorescence? A Response from the ILERVAS Project. *Nutrients*. 2022. 15. (1):203. IF:6,706. Q1.

Mota N, Jové M, Berdún R, Òbis È, Barja G, Pamplona R. Methionine Metabolism Is Down-Regulated in Heart of Long-Lived Mammals. *Biology-Basel*. 2022. 11. (12):1821. IF:5,168. Q1.

Sol J, Colàs L, Mauri G, Molina J, Galo JD, Torres C, Aymerich N, Ois A, Roquer J, Tur S, García MDC, Martí J, Cruz A, Segura T, Pamplona R, Portero M, Arque G, Jove M, Purroy F. Ischemia preconditioning induces an adaptive response that defines a circulating metabolomic signature in ischemic stroke patients. *J. Cereb. Blood Flow Metab*. 2022. 42. (12):p. 2201-2215. IF:6,960. Q1.

Viña J, Escudero J, Baquero M, Cebrián M, Carbonell JA, Muñoz JE, Satorres E, Meléndez JC, Ferrer J, Cózar MDP, Santabàrbara JM, Jové M, Pamplona R, Tarazona FJ, Borràs C. Genistein effect on cognition in prodromal Alzheimer's disease patients. The GENIAL clinical trial. *Alzheimers Res. Ther*. 2022. 14. (1):p. 164-164. IF:8,823. D1.

Dakterzada F, Benitez ID, Targa A, Carnes A, Pujol M, Jove M, Minguez O, Vaca R, Sanchez M, Barbe F, Pamplona R, Piñol G. Blood-based lipidomic signature of severe obstructive sleep apnoea in Alzheimer's disease. *Alzheimers Res. Ther*. 2022. 14. (1):p. 163-163. IF:8,823. D1.

del Castillo A, Moreno JM, Latorre J, Arnoriaga M, Ballanti M, Monteleone G, Alessandro O, Mingrone G, Puig J, Ramos R, Garre J, Jove M, Pamplona R, Portero M, Sol J, Lefebvre P, Staels B, Federici M, Fernández JM, Mayneris J.

DPP9 as a Potential Novel Mediator in Gastrointestinal Virus Infection. *Antioxidants (Basel)*. 2022. 11. (11):2177. IF:7,675. D1.

Pallarès J, Torreguitart N, Arqué G, Portero M, Purroy F. Human atheromatous plaques expressed sensing adaptor STING, a potential role in vascular inflammation pathogenesis. *Thromb. Haemost*. 2022. 122. (9):p. 1621-1624. IF:6,681. Q1.

Mayneris J, Arnoriaga M, Garre J, Puig J, Ramos R, Trelis M, Burokas A, Coll C, Zapata C, Pedraza S, Perez V, Ramio L, Ricart W, Moya A, Jove M, Sol J, Portero M, Pamplona R, Maldonado R, Fernandez JM. Presence of Blastocystis in gut microbiota is associated with cognitive traits and decreased executive function. *ISME J*. 2022. 16. (9):p. 2181-2197. IF:11,217. D1.

Torres P, Anerillas C, Ramirez O, Fernández A, Encinas M, Povedano M, Andres P, Ferrer I, Ayala V, Pamplona R, Portero M. The motor neuron disease mouse model hSOD1-G93A shows a non-canonical profile of senescence biomarkers. *DNM Dis. Models Mech*. 2022. 15. (8):dmm049059. IF:5,732. Q1.

Mota N, Jové M, Pamplona R. mTOR Complex 1 Content and Regulation Is Adapted to Animal Longevity. *Int J Mol Sci*. 2022. 23. (15):8747. IF:6,208. Q1.

Parameswaran J, Goicoechea L, Planas L, Pastor A, Ruiz M, Calingasan NY, Guilera C, Aso E, Boada J, Pamplona R, Portero M, de la Torre R, Ferrer I, Casasnovas C, Pujol A, Fourcade S. Activating cannabinoid receptor 2 preserves axonal health through GSK-3 β /NRF2 axis in adrenoleukodystrophy. *Acta Neuropathol*. 2022. 144. (2):p. 241-258. IF:15,887. D1.

Bermúdez M, Martí M, Castro E, Bretones MDM, Farràs C, Torres G, Pamplona R, Lecube A, Mauricio D, Valdivielso JM, Fernández E. Development and Validation of a Personalized, Sex-Specific Prediction Algorithm of Severe Atherosclerosis in Middle-Aged Asymptomatic Individuals: The ILERVAS Study. *Front. Cardiovasc. Med*. 2022. 9. p. 895917-895917. IF:5,846. Q2.

Gatius S, Jove M, Megino C, Albertí M, Yeramian A, Bonifaci N, Piñol M, Santacana M, Pradas I, Llobet D, Pamplona R, Matias X, Eritja N. Metabolomic Analysis Points to Bioactive Lipid Species and Acireductone Dioxygenase 1 (ADI1) as Potential Therapeutic Targets in Poor Prognosis Endometrial Cancer. *Cancers*. 2022. 14. (12):2842. IF:6,575. Q1.

Bauer KC, Littlejohn PT, Ayala V, Creus A, Finlay BB. NAFLD and the Gut-Liver Axis: Exploring an Undernutrition Perspective. *Gastroenterology*. 2022. 162. (7):p. 1858-1858. IF:33,883. D1.

RESEARCH TEAM

Group leader

Reinald Pamplona Gras

Principal investigators

Mariona Jove Font
Manuel Portero Otin

Researchers

Victoria Ayala Jove
Jordi Boada Pallas
Anna Fernandez Bernal
Natàlia Mota Martorell
Pascual Torres Cabestany

PhD students

Miriam Ceron Codorniu
Jose Daniel Galo Licon
Laia Fontdevila Olivé
Santiago Rico Rios

Research technician

David Argiles Baulo

Laboratories

Biomedicine 3rd floor

973 702 442

Email

reinald.pamplona@udl.cat



5.3. Metabolic physiopathology

Mayneris J, Castells A, Arnoriaga M, Martin M, de la Vega L, Zapata C, Burokas A, Blasco G, Coll C, Escrichs A, Biarnes C, Moreno JM, Puig J, Garre J, Ramos R, Pedraza S, Brugada R, Vilanova JC, Serena J, Gich J, Ramio L, Perez V, Moya A, Pamplona R, Sol J, Jove M, Ricart W, Portero M, Deco G, Maldonado R, Fernandez JM. Microbiota alterations in proline metabolism impact depression. *Cell Metab.* 2022. 34. (5):p. 681-681. IF:31,373. D1.

Beà A, García J, Irazoki A, Lana C, López G, Portero M, Pérez P, Inserte J, Ruiz M, Zorzano A, Llovera M, Sanchis D. Cardiac fibroblasts display endurance to ischemia, high ROS control and elevated respiration regulated by the JAK2/STAT pathway. *FEBS J.* 2022. 289. (9):p. 2540-2561. IF:5,622. Q2.

Puigarnau S, Fernández A, Obis E, Jové M, Castañer M, Pamplona R, Portero M, Camerino O. Metabolomics reveals that fittest trail runners show a better adaptation of bioenergetic pathways. *J Sci Med Sport.* 2022. 25. (5):p. 425-431.

Bauer KC, York EM, Cirstea MS, Radisavljevic N, Petersen C, Huus KE, Brown EM, Bozorgmehr T, Berdun R, Bernier LP, Lee A, Woodward SE, Krekhno Z, Han J, Hancock R, Ayala V, MacVicar BA, Finlay BB. Gut microbes shape microglia and cognitive function during malnutrition. *Glia.* 2022. 70. (5):p. 820-841. IF:8,073. Q1.

Sancho A, Gil A, Quirant B, Nogueras L, Peralta S, Solana MJ, Gonzalez C, Gallego Y, Quibus L, Ramo C, Presas S, Martinez E, Torres P, Hervas JV, Valls J, Brieva L. Seroprevalence of SARS-CoV-2 in a Cohort of Patients with Multiple Sclerosis under Disease-Modifying Therapies. *J Clin Med.* 2022. 11. (9):2509. IF:4,964. Q2.

Lorca C, Laparra M, Cespedes MV, Casani L, Florit S, Jove M, Mota N, Vilella E, Gallart X, Serra A. Industrial By-Products As a Novel Circular Source of Bio-compatible Extracellular Vesicles. *Adv. Funct. Mater.* 2022. 32. (29):2202700. IF:19,924. D1.

Pradas I, Jove M, Huynh K, Ingles M, Borrás C, Mota N, Galo JD, Puig J, Viña J, Meikle PJ, Pamplona R. Long-lived humans have a unique plasma sphingolipidome. *J. Gerontol. Ser. A Biol. Sci. Med. Sci.* 2022. 77. (4):p. 728-735. IF:6,591. Q1.

Caon M, Prinelli F, Angelini L, Carrino S, Mugellini E, Orte S, Serrano J, Atkinson S, Martin A, Adorni F. PEGASO e-Diary: User Engagement and Dietary Behavior Change of a Mobile Food Record for Adolescents. *Front. Nutr.* 2022. 9. p. 727480-727480. IF:6,590. Q1.

- Sánchez E, Kerkeni M, Hernández M, Gavalda R, Rius F, Sauret A, Torres G, Bermúdez M, Fernández E, Castro E, Purroy F, Mauricio D, Farràs C, Buti M, Godoy P, Pamplona R, Lecube A. Weak Association between Skin Autofluorescence Levels and Prediabetes with an ILERVAS Cross-Sectional Study. *Nutrients.* 2022. 14. (5):1102. IF:6,706. Q1.

Sanchez E, Sapiña E, Gavalda R, Barbe F, Torres G, Sauret A, Dalmases M, Lopez C, Gutierrez L, Bermudez M, Fernandez E, Purroy F, Castro E, Farràs C, Pamplona R, Mauricio D, Hernandez C, Simo R, Lecube A, On Behalf Of The Ilervas Project C. Prediabetes Is Associated with Increased Prevalence of Sleep-Disordered Breathing. *J Clin Med.* 2022. 11. (5):1413. IF:4,964. Q2.

Ranea P, Galino J, Espinosa L, Schlüter A, Ruiz M, Calingasan NY, Villarroya F, Naudí A, Pamplona R, Ferrer I, Beal MF, Portero M, Fourcade S, Pujol A. Modulation of mitochondrial and inflammatory homeostasis through RIP140 is neuroprotective in an adrenoleukodystrophy mouse model. *Neuropathol Appl Neurobiol.* 2022. 48. (1):e12747. IF:6,250. Q1.

Pinilla L, Benítez ID, Santamaria F, Targa A, Moncusí A, Dalmases M, Mínguez O, Aguilà M, Jové M, Sol J, Pamplona R, Barbé F, Sánchez M. Plasma profiling reveals a blood-based metabolic fingerprint of obstructive sleep apnea. *Bio-med. Pharmacother.* 2022. 145. p. 112425-112425. IF:7,419. D1.

Granado AB, Martin M, Sanchez V, Riart M, Lafarga A, Berdun R, Vilapriño E, Portero M, Serrano JCE. Colonic Microbiota Profile Characterization of the Responsiveness to Dietary Fibre Treatment in Hypercholesterolemia. *Nutrients.* 2022. 14. (3):525. IF:6,706. Q1.

Rodríguez AG, Talamonti E, Naudi A, Kalinovich AV, Pauter AM, Barja G, Bengtsson T, Jacobsson A, Pamplona R, Shabalina IG. Elovl2-Ablation Leads to Mitochondrial Membrane Fatty Acid Remodeling and Reduced Efficiency in Mouse Liver Mitochondria. *Nutrients.* 2022. 14. (3):559. IF:6,706. Q1.



5.3. Metabolic physiopathology

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Pamplona Gras, Reinald i Piñol Ripoll, Gerard	Diputació de Lleida	La vía de señalización mediada por los lípidos bioactivos diacilglicerol-ácido fosfatídico como biomarcadores para discriminar los estadios iniciales de la enfermedad de Alzheimer del envejecimiento normal	50.000
Portero Otin, Manuel i Purroy Garcia, Francisco	Diputació de Lleida	Perspectivas clinicas de la biología de sistemas aplicada al análisis de placas carotídeas humanas: ILER-CAROTID	50.000
Jove Font, Mariona	Fundacion Bancaria Caixa d'Estalvis i Pensions de Barcelona	From GFAP mutations in astrocytes to neurodegeneration: exploring a lipid-protein oxidation pathway (ASTROMAD)	275.000
Portero Otin, Manuel	Instituto de Salud Carlos III (ISCIII)	Metabolismo lipidico intracelular, procesamiento de ARNm y estrés celular en la encrucijada de la fisiopatología de la esclerosis lateral amiotrófica	214.170
Portero Otin, Manuel	Departament de Salut Generalitat Catalunya	Identification of compounds for inhibition of ACE2 membrane expression	137.264
Pamplona Gras, Reinald	Fundacion Bancaria Caixa d'Estalvis i Pensions de Bar- celona	Dynamics of the neuronal, metabolomic and neuropsychological signatures underlying the adptations for motherhood during pregnancy	101.750
Portero Otin, Manuel	Instituto de Salud Carlos III (ISCIII)	Estrés celulares y alteraciones en los lipidomas neuronales, gliales y extracelulares en la fisiopatología de la esclerosis lateral amiotrófica	153.670



5.4. Systems biology and statistical methods for biomedical research

This multidisciplinary group is itself composed of multidisciplinary researchers, with expertises ranging from biostatistics to systems and synthetic biology. While we also do research in biomedicine, we are currently widening our focus to include food and environmental security as well as effects of climate change on human activities, as these field will have a very strong medium term impact on human health, via the One Health concept.

Publications

Alves R, Pazos M, Medina M, Sanz A, Delaspre F, Tamarit J. Evolution of an Iron-Detoxifying Protein: Eukaryotic and Rickettsia Frataxins Contain a Conserved Site Which Is Not Present in Their Bacterial Homologues. *Int J Mol Sci.* 2022. 23. (21):13151. IF:6,208. Q1.

Lucido A, Basallo O, Sorribas A, Marin A, Vilapriño E, Alves R. A mathematical model for strigolactone biosynthesis in plants. *Front. Plant Sci.* 2022. 13. p. 979162-979162. IF:6,627. D1.

Laza C, Martínez M, Forné C, Vilaplana J, Cruz I, Sánchez I, Reñé M, Cazorla C, Hernández M, Galindo G, Llorens M, Pons A, Rué M, DECIDO G. Feasibility and Acceptability of Personalized Breast Cancer Screening (DECIDO Study): A Single-Arm Proof-of-Concept Trial. *Int J Environ Res Public Health.* 2022. 19. (16):10426. IF:4,614. Q1.

Magrans R, Ferreira F, Sarlabous L, López J, Gomà G, Fernandez S, Navarra G, Fernández R, Montanya J, Kacmarek R, Rué M, Forné C, Blanch L, de Haro C, Aquino J, ASYNICU G. The Effect of Clusters of Double Triggering and Ineffective Efforts in Critically Ill Patients. *Crit. Care Med.* 2022. 50. (7):e619-e629. IF:9,296. Q1.

Burgos A, Miranda E, Vilapriño E, Meza ID, Alves R. CAM Models: Lessons and Implications for CAM Evolution. *Front. Plant Sci.* 2022. 13. p. 893095-893095. IF:6,627. D1.

Pons A, Marzo M, Cruz I, Galindo G, Hernandez MJ, Rue M. Avances hacia el cribado personalizado del cáncer de mama: el papel de la Atención Primaria. *Aten Primaria.* 2022. 54. (5):p. 102288-102288. IF:2,206. Q3.

Perez L, Alves R, Perez L, Albacete A, Farre G, Soto E, Vilapriño E, Martinez C, Basallo O, Fraser PD, Medina V, Zhu CF, Capell T, Christou P. Multilevel interactions between native and ectopic isoprenoid pathways affect global metabolism in rice. *Transgenic Res.* 2022. 31. (2):p. 249-268. IF:3,145. Q3.

Laza C, Codern N, Cardona À, Hernandez MJ, Perez MJ, Carles M, Rue M, DECIDO G. Views of health professionals on risk-based breast cancer screening and its implementation in the Spanish National Health System: A qualitative discussion group study. *PLoS One.* 2022. 17. (2):e0263788. IF:3,752. Q2.

Laza C, Hernández MJ, Carles M, Pérez MJ, Cruz I, Rué M, DECIDO G. Barriers and Facilitators to the Implementation of a Personalized Breast Cancer Screening Program: Views of Spanish Health Professionals. *Int J Environ Res Public Health.* 2022. 19. (3):1406. IF:4,614. Q1.

Granado AB, Martin M, Sanchez V, Riart M, Lafarga A, Berdun R, Vilapriño E, Portero M, Serrano JCE. Colonic Microbiota Profile Characterization of the Responsiveness to Dietary Fibre Treatment in Hypercholesterolemia. *Nutrients.* 2022. 14. (3):525. IF:6,706. Q1.

Hernández MJ, Pérez MJ, Cardona A, Codern N, Vidal C, Rue M, Forné C, Carles M, Pro G. Women's preference to apply shared decision-making in breast cancer screening: a discrete choice experiment. *Bmj Open.* 2022. 12. (11):e064488. IF:3,007. Q2.

RESEARCH TEAM

Group leaders

Montserrat Rué Monné

Albert Sorribas Tello

Rui Carlos Vaqueiro de Castro Alves

Principal investigator

Ester Vilapriño Terre

Researcher

Alberto Marin Sanguino

PhD students

Oriol Basallo Clariana

Abel Lucido Garbulo

Research technician

Abderrahmane Eleiwa

Laboratories

Biomedicine II | 4th floor

973 702 441

Email

rui.alves@udl.cat

montserrat.rue@udl.cat

albert.sorribas@udl.cat

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Albert Sorribas Tello i Vilapriño Terre, Ester	Instituto de Salud Carlos III (ISCIII)	Development of a simulation environment as a tool to support the design of studies and clinical trials	43.318
Rué Monné, Montserrat	Fundacio La Marato de TV3	Liquid biopsies for the identification of mechanisms of resistance to PARP inhibitors in BRCA1/2-associated cancers	68.910
Rué Monné, Montserrat	Instituto de Salud Carlos III (ISCIII)	Personalización del cribado del cáncer de mama: Evaluación de su viabilidad y aceptabilidad en el Sistema Nacional de Salud	56.870



5.5. Clinical and experimental research in digestive and hematological pathology

Our group's research deals with colorectal carcinogenesis and with hematologic diseases. It has a clinical and experimental. We are also interested in teaching investigation in our fields. The group was formed and registered in 1995 and is a consolidated research group at the University of Lleida.

Publications

Díaz J, Rodríguez R, Coll R, Osca G, Pratcorona M, Gonzalez M, Garrido A, Angona A, Talarn C, Tormo M, Arnan M, Vives S, Salamero O, Tuset E, Lloveras N, Díez I, Zamora L, Bargay J, Sampol A, Cruz D, Vila J, Sitges M, Garcia A, Vall F, Esteve J, Sierra J, Gallardo D, Cooperativo Estudio Tratamiento GRP. 5'-nucleotidase, cytosolic II genotype, and clinical outcome in patients with acute myeloid leukemia with intermediate-risk cytogenetics. *Eur. J. Haematol.* 2022. 109. (6):p. 755-764. IF:3,674. Q3.

Bassegoda O, Rivera J, Serra I, Morillas R, Broquetas T, Vergara M, Rodríguez A, Aracil C, Virolés S, Carrión JA, Pardo A, Rodríguez S, Serra M, Pericàs JM, Augustin S, Ginès P, Graupera I. High frequency of acute decompensation and cancer in patients with compensated cirrhosis due to nonalcoholic fatty liver disease: A retrospective cohort study. *Hepatol. Commun.* 2022. 6. (11):p. 3212-3222. IF:5,701. Q2.

Gonzalez J, Jatem E, Roig J, Valtierra N, Ostos E, Abo A, Santacana M, Garcia A, Segarra A. Usefulness of urinary biomarkers to estimate the interstitial fibrosis surface in diabetic nephropathy with normal kidney function. *Nephrol Dial Transplant.* 2022. 37. (11):p. 2102-2110. IF:7,186. Q1.

Montoro M, Cucala M, Lanás A, Villanueva C, Hervas AJ, Alcedo J, Gisbert JP, Aisa AP, Bujanda L, Calvet X, Mearin F, Murcia O, Canelles P, Lopez SG, de Argila CM, Planella M, Quintana M, Jerico C, Erce J, Spanish Assoc Gastroenterology A. Indications and hemoglobin thresholds for red blood cell transfusion and iron replacement in adults with gastrointestinal bleeding: An algorithm proposed by gastroenterologists and patient blood management experts. *Front. Med.* 2022. 9. 903739. IF:5,058. Q2.

Moreno DF, Clapes V, Soler JA, Gonzalez Y, Gironella M, Motllo C, Granell M, Abella E, Garcia M, Garcia A, Cabezudo E, Blade J, Rosinol L. Real-World Evidence of Daratumumab Monotherapy in Relapsed/Refractory Multiple Myeloma Patients and Efficacy on Soft-Tissue Plasmacytomas. *Clin. Lymphoma Myeloma Leuk.* 2022. 22. (8):p. 635-642. IF:2,822. Q3.

Bars D, Sakhawat A, Piñol C, Motilva MJ. Chemopreventive effects of anthocyanins on colorectal and breast cancer: A review. *Semin. Cancer Biol.* 2022. 81. p. 241-258. IF:17,012. D1.

Encinas C, Hernandez JA, Oriol A, Rosinol L, Blanchard MJ, Bellon JM, Garcia R, de la Rubia J, de la Guia AL, Jimenez A, Jarque I, Inigo B, Dourdil V, de Arriba F, Perez CC, Gonzalez Y, Hernandez MT, Bargay J, Granell M, Rodriguez P, Silvent M, Cabrera C, Rios R, Alegre A, Gironella M, Gonzalez MS, Sureda A, Sampol A, Ocio EM, Krsnik I, Garcia A, Garcia A, Soler JA, Martin J, Arguinano JM, Mateos MV, Blade J, San JF, Lahuerta JJ, Martinez J, GEM PETHEMA Espanol Mieloma GRPPR. A simple score to predict early severe infections in patients with newly diagnosed multiple myeloma. *Blood Cancer J.* 2022. 12. (4):68. IF:9,812. Q1.

Fuertes C, Ballesta P, Cruz I, Galindo G, Marsal JR, Gómez X. Prescripción potencialmente inadecuada: utilidad de los criterios STOPP/START versión 2 a nivel poblacional en Cataluña. *Semergen.* 2022. 48. (3):p. 163-173.

Catalan U, Pedret A, Yuste S, Rubio L, Piñol C, Sandoval BA, Companys J, Foguet E, Herrero P, Canela N, Motilva MJ, Sola R. Red-Fleshed Apples Rich in Anthocyanins and White-Fleshed Apples Modulate the Aorta and Heart Proteome in Hypercholesterolaemic Rats: The AppleCOR Study. *Nutrients.* 2022. 14. (5):1047. IF:6,706. Q1.

Bataller A, Garrido A, Guijarro F, Oñate G, Diaz M, Arnan M, Tormo M, Vives S, de Llano MPQ, Coll R, Gallardo D, Vall F, Escoda L, Garcia A, Salamero O, Sampol A, Merchan BM, Bargay J, Castaño S, Esteban D, Oliver A, Rivero A, Mozas P, Lopez M, Pratcorona M, Zamora L, Costa D, Rozman M, Nomdedeu JF, Colomer D, Brunet S, Sierra J, Esteve J. European LeukemiaNet 2017 risk stratification for acute myeloid leukemia: validation in a risk-adapted protocol. *Blood Adv.* 2022. 6. (4):p. 1193-1206. IF:7,637. Q1.

Oñate G, Bataller A, Garrido A, Hoyos M, Arnan M, Vives S, Coll R, Tormo M, Sampol A, Escoda L, Salamero O, Garcia A, Bargay J, Aljarilla A, Nomdedeu JF, Esteve J, Sierra J, Pratcorona M, C. Prognostic impact of DNMT3A mutation in acute myeloid leukemia with mutated NPM1. *Blood Adv.* 2022. 6. (3):p. 882-890. IF:7,637. Q1.

Gutierrez A, Zapater P, Ricart E, Gonzalez M, Gordillo J, Olivares D, Vera I, Manosa M, Gisbert JP, Aguas M, Sanchez E, Bosca M, Laredo V, Camps B, Marin I, Zabana Y, Martin MD, Munoz R, Navarro M, Sierra E, Madero L, Vela M, Perez JL, Sainz E, Calvet X, Arias L, Morales V, Bermejo F, Fernandez L, Van M, De

RESEARCH TEAM

Group leader

Josep Maria Reñé Espinet

Principal investigators

Javier Gómez Arbonés
M. Carmen Piñol Felis

Researchers

Carlos Aracil Blanch
Juan Buenestado Garcia
Carlos Eduardo Chávez Parada
Tomas Garcia Cerecedo
Antonio Garcia Guiñon
Jordi Garreta Mesegue
Patricia Huelin Alvarez
Armando Luaña Galan
Miquel Marquès Camí
Maria Cristina Marzo Alonso
Josep Maria Miñana Calafat
Montserrat Planella de Rubinat
Eva Puy Vicente Pascual
Consuelo Ramirez Salazar
Tamara Revuelto Artigas
Juan Armando Rodríguez Oballe
Maria Eugenia Rivero Arango
Eva Sese Abizanda
Elisabeth Talavera Ramos
Montserrat Teixido Amoros
Albert Tugues Peiro
Natividad Zaragoza Velasco

Research technician

Sarata Sall Sall

Laboratories

HUAV

Email

jmrene.lleida.ics@gencat.cat



5.5. Clinical and experimental research in digestive and hematological pathology

Castro L, Rodriguez C, Munoz C, Lorente R, Rivero M, Iglesias E, Herreros B, Busquets D, Riera J, Martinez MP, Roldon M, Roncero O, Hinojosa E, Sierra M, Barrio J, De Francisco R, Huguet J, Merino O, Carpio D, Ginard D, Munoz F, Marta P, Almela P, Argueelles F, Alcain G, Luis B, Mancenido N, Lucendo AJ, Varela P, Rodriguez I, Ramos L, Laura S, Sese E, Acosta MBD, Domenech E, Frances R, ENEIDA Project of G. Immigrant IBD Patients in Spain Are Younger, Have More Extraintestinal Manifestations and Use More Biologics Than Native Patients. *Front. Med.* 2022. 9. 823900. IF:5,058. Q2.

Jimenez V, Alvarez MT, Bravo AP, Galmes BJ, Hernandez MDN, Hidalgo OB, Alonso CM, Gonzalez NFP, Coll J, Nunez R, Carrasco M, Candel FG, Gonzalez JR, Garcia CH, Castro MJV, Mir R. Clinical Efficacy and Safety of Fandidi(R), a Plasma-Derived VWF/Factor VIII Concentrate, in von Willebrand Disease in Spain: A Retrospective Study. *Clin. Appl. Thromb.-Hemost.* 2022. 28. 10760296221074348. IF:3,512. Q3.

Zabana Y, Marin I, Rodriguez I, Vera I, Martin MD, Guerra I, Gisbert JP, Mesoneiro F, Benitez O, Taxonera C, Ponferrada A, Piqueras M, Lucendo AJ, Caballol B, Manosa M, Martinez P, Bosca M, Gordillo J, Bujanda L, Mancenido N, Martinez T, Lopez A, Rodriguez C, Garcia S, Vega P, Rivero M, Melcarne L, Calvo M,

Iborra M, de MB, Sicilia B, Barrio J, Perez JL, Busquets D, Perez I, Navarro M, Hernandez V, Argueelles F, Estesos FR, Mejjide S, Ramos L, Gomollon F, Munoz F, Suris G, de Zarate JO, Huguet JM, Llao J, Garcia MF, Sierra M, Dura M, Estrecha S, Coronel AF, Hinojosa E, Olivan L, Iglesias E, Gutierrez A, Varela P, Rull N, Gilabert P, Hernandez A, Brotons A, Ginard D, Sese E, Carpio D, Aceituno M, Cabriada JL, Gonzalez Y, Jimenez L, Chaparro M, Roman A, Alba C, Plaza R, Mena R, Tamarit S, Ricart E, Calafat M, Olivares S, Navarro P, Bertolotti F, Alonso H, Pajares R, Olcina P, Manzano P, Domenech E, Esteve M, ENEIDA G. Nationwide COVID-19-EII Study: Incidence, Environmental Risk Factors and Long-Term Follow-Up of Patients with Inflammatory Bowel Disease and COVID-19 of the ENEIDA Registry. *J Clin Med.* 2022. 11. (2):421. IF:4,964. Q2.

Lucendo AJ, Santander C, Savarino E, Guagnozzi D, Perez I, Perello A, Guardiola A, Barrio J, Betore ME, Gutierrez C, de los Rios CC, Racca F, Fernandez S, Blas L, Krarup AL, de la Riva S, Naves JE, Carrion S, Oballe J, Garcia N, Tamarit S, Navarro P, Arias A, Laserna EJ, EUREOS EoE CONNECT GRP. EoE CONNECT, the European Registry of Clinical, Environmental, and Genetic Determinants in Eosinophilic Esophagitis: rationale, design, and study protocol of a large-scale epidemiological study in Europe. *Ther. Adv. Gastroenterol.* 2022. 15. 17562848221074204. IF:4,802. Q2.



5.6. Cell signalling and apoptosis group

The group began research at the University of Lleida in 2001 when Dr. Marta Llovera and Dr. Daniel Sanchis joined to conduct studies on the signaling of survival, differentiation, and death of cells of the nervous system and myocardium. Our research has provided information on relevant aspects of the roles of Calcium / Calmodulin (J Neurochem, 2004; J Biol Chem, 2008) and Tyr-kinase Trk receptors (J Neurochem, 2008; J Neurochem, 2011) in the differentiation process, and neuronal survival, as well as the potential of histone deacetylases as therapeutic tools for the treatment of glioblastoma (Cell Death Dis, 2014). At the same time, we pioneered the loss of apoptotic genes during myocardial development, where they play an important role in the division and differentiation of myocytes (J Cell Sci, 2013; PLoSOne, 2014), and the change of an apoptotic cell death to necrotic cell death during this process, identifying relevant proteins such as EndoG (J Biol Chem, 2006). Deepening the characterization of ENDOG led to the discovery of its involvement in the process of cardiac hypertrophy (Nature, 2011; Redox Biol, 2017) and in the control of cell proliferation (Redox Biol, 2020). Recently, the group has focused an important part of its effort on investigating key and differential aspects of cardiac fibroblasts as cells essential for the proper functioning of the myocardium (FEBS J, 2022).

Our research is possible thanks to the continuous funding obtained mainly from competitive public calls of Organizations such as La Marató de TV3, the Spanish Ministries of Health (ISCIII) and Science (MICINN) and the Agency for the Management of University Grants (AGAUR), of the Generalitat de Catalunya. Our research work has involved the establishment of collaborations, both international (Eric Olson, UTSouthWestern Medical Center, Dallas, TX, USA; Chris Smith, University of Cambridge, UK; Junmei Ye, China Pharmaceutical University, Nanjing, China), as nationals, mainly with groups from Madrid (CNIC) and Barcelona (Vall d'Hebron Research Institute, IDIBAPS, IRB Barcelona), as well as from IRBLLEIDA itself (groups led by Xavier Dolcet, Marnel Portero, Joaquim Ros and Andreu Casali). This has led to the publication of more than 40 articles in indexed international scientific journals and the production of 11 doctoral theses in the last 20 years.

Publications

Beà A, García J, Irazoki A, Lana C, López G, Portero M, Pérez P, Inserte J, Ruiz M, Zorzano A, Llovera M, Sanchis D. Cardiac fibroblasts display endurance to ischemia, high ROS control and elevated respiration regulated by the JAK2/STAT pathway. FEBS J. 2022. 289. (9);p. 2540-2561. IF:5,622. Q2.

RESEARCH TEAM

Group leaders

Marta Llovera Tomàs
Daniel Sanchis Morales

Researcher

Carlos Lana Castilla

Research technician

Sandra Garcia Carpi

Laboratories

Biomedicine I 2nd floor. Lab b2.10

973 702 949

Email

daniel.sanchis@udl.cat

marta.llovera@udl.cat

Active projects in 2022

PI	Funding agency	Project	Budget (€)
Sanchis Morales, Daniel	Ministerio de Ciencia e Innovación	Mechanisms involved in the role of EndoG in the development and metabolism of the heart. Relationship of ENDOG and other apoptotic genes with cardiac pathophysiology	96.800



5.7. Cell signalling in yeast

Our current research areas have both a basic and applied orientation:

Basic orientation:

1. Responses to stress mediated by signal transduction pathways (TOR, Ras / PKA, AMPK/Snf1, Pkc1-MAPK, GCN2, PDK1/YPK1 ...).
2. Study of the mechanisms of iron homeostasis, its relationship with the recycling of nutrients through autophagy and its impact on aging and mortality in *saccharomyces cerevisiae*, with a traslational objective towards studies related to iron deficiency anemia and breast cancer.
3. Humanization of yeast with human ferritins in order to delve into the mechanisms of iron homeostasis and cell survival.

Applied orientation:

1. Design of strategies to increase endogenous iron levels for use as a nutritional supplement.
2. Design strategies for directed evolution to obtain improved of yeast for use in food production.

Funded grants in 2022

PI	Funding agency	Project	Budget (€)
De la Torre Ruiz, M ^a Angeles	Institut Recerca Biomedica De Lleida (IRBLleida)	Weaning pigs an animal model to resolve iron deficiency anaemia based on biotechnologically-modified yeast	20.500

Publications

Belli G, Colomina N, Castells L, Lorite NP. Post-Translational Modifications of PCNA: Guiding for the Best DNA Damage Tolerance Choice. *J. Fungi*. 2022. 8. (6):621. IF:5,724. Q1.

Pujol N, Gonzalez A, Puig S, de la Torre MA. Both human and soya bean ferritins highly improve the accumulation of bioavailable iron and contribute to extend the chronological life in budding yeast. *Microb Biotechnol*. 2022. 15. (5):p. 1525-1541. IF:6,575. Q1.

RESEARCH TEAM

Group leader

M^a Angeles de la Torre Ruiz

Researchers

Laia Castells Roca
Nuria Pujol Carrion

PhD student

Sandra Montellà Manuel

Laboratories

Biomedicine I 4th floor

973 702 941

973 702 410

Email

mariaangeles.delatorre@udl.cat



5.8. Nutrition, metabolism and microbiota in patients with heart failure (NUTRIMMIC)

The group is composed of basic and clinical researchers, our research focuses on the field of Heart Failure (HF), a disease with growing prevalence in developed countries. Our research aims to know how the nutritional factors and intestinal microbiota affect the development and prognosis of heart failure. Patients with heart failure show an inflammatory status associated with iron deficit. It is hypothesized that malnutrition and alteration of the gut microbiota are responsible for perpetuating inflammation.

The objective of the clinical line is to determine the nutritional status, adherence to the Mediterranean diet and composition of the gut microbiota of patients with heart failure. The basic line aims to generate a murine experimental model of heart failure and analyze the relationships between microbiota and inflammation.

The observations obtained in the basic line about the relationships between microbiota and inflammation, will allow us to transfer knowledge from basic to the clinical line to design specific nutritional and supplementation strategies in order to modify the composition of the intestinal flora and reduce inflammation.

Publications

Jover A, Ramírez M, Bellés A, Ribes E, Batlle M, Cayado J, Garrido S, Gracia MI, Gros L, Javierre MJ, Mari A, Montull L, Ortiz M, Terrer G, Vaqué P, Ichart JJ,

Justribó E, Andreu E, Carrera J, Martorell R, Pallàs S, Saura M, Vena A, Albalat JM, Cano S, Chacón I, Escuin DR, Estadella MJ, Figueres AM, Minguet S, Montaña LM, Otañal J, Pallerola M, Pujol F, Rodríguez A, Solé A, Toribio F, Urgelés MC, Valgañón J, Torres J, The P G, On Behalf Of Translational Research Group On Infectious Diseases Of Lleida H. Impact of a Primary Care Antimicrobial Stewardship Program on Bacterial Resistance Control and Ecological Imprint in Urinary Tract Infections. *Antibiotics-Basel*. 2022. 11. (12):1776. IF:5,222. Q1.

Roso A, Serra X, Cos FX, Palleja M, Mateu L, Rosell A, Almirante B, Ferrer J, Gasa M, Gudiol C, Moreno AM, Morales JL, Rexach M, Sabater G, Auguet T, Vidal F, Lerida A, Rebull J, Khunti K, Argimon JM, Paredes R. Evolving mortality and clinical outcomes of hospitalized subjects during successive COVID-19 waves in Catalonia, Spain. *Glob Epidemiol*. 2022. 4. p. 100071-100071.

Altes G, Vaquero M, Cuesta S, Anerillas C, Macia A, Espinet C, Ribera J, Bellusci S, Klein OD, Yeramian A, Dolcet X, Egea J, Encinas M. A dominant negative mutation uncovers cooperative control of caudal Wolffian duct development by Sprouty genes. *Cell. Mol. Life Sci*. 2022. 79. (10):p. 514-514. IF:9,207. Q1.

RESEARCH TEAM

Group leaders

Jose Luis Morales Rull
Amalia Zapata Rojas

Researchers

Cristina Sole Felip
Pilar Vaqué Castilla

External contributor

Sara Cuesta Sancho

Laboratories

Biomedicine I ground floor. Lab 0.3
973 703 748

Email

jlmorales.lleida.ics@gencat.cat
amalia.zapata@udl.cat



Area 6. Other research areas

Other lines of research includes those researchers that, without being part of a specific research group at IRBLleida, have a relevant scientific production in areas such as family medicine, ophthalmology, fibromyalgia, internal medicine, traumatology, etc.

Publications

Molló À, Vlachó B, Gratacòs M, Mata M, Rubinat E, Berenguera A, Real J, Puig R, Cos X, Franch J, Khunti K, Mauricio D, INTEGRA G, Montero L, Carbonell M, Solanes M, Porté M, Costa A, de la Puente JFB, Arnau C, Benito B, de la Iglesia PP, Buil ME, Martínez D, Franco P, Ledesma M, Hernandez E, Partegàs X, Martínez D, Peligros J, Lafarga A, Millera SM, Rodríguez R, Fernández MJ. Impact of a Multicomponent Healthcare Intervention on Glycemic Control in Subjects with Poorly Controlled Type 2 Diabetes: The INTEGRA Study. *Diabetes Obes. Metab.*

Jover A, Ramírez M, Bellés A, Ribes E, Batlle M, Cayado J, Garrido S, Gracia MI, Gros L, Javierre MJ, Mari A, Montull L, Ortiz M, Terrer G, Vaqué P, Ichart JJ, Justribó E, Andreu E, Carrera J, Martorell R, Pallàs S, Saura M, Vena A, Albalat JM, Cano S, Chacón I, Escuin DR, Estadella MJ, Figueres AM, Minguet S, Montaña LM, Otal J, Pallerola M, Pujol F, Rodríguez A, Solé A, Toribio F, Urgelés MC, Valgañón J, Torres J, The P G, On Behalf Of Translational Research Group

On Infectious Diseases Of Lleida H. Impact of a Primary Care Antimicrobial Stewardship Program on Bacterial Resistance Control and Ecological Imprint in Urinary Tract Infections. *Antibiotics-Basel.* 2022. 11. (12):1776. IF:5,222. Q1.

Yuguero O, Rius N, Soler J, Esquerda M. Increase of burnout among emergency department professionals due to emotional exhaustion during the SARS-Cov2 pandemic: Evolution from 2016 to 2021. *Medicine (Baltimore).* 2022. 101. (47):p. 31887-31887. IF:1,817. Q3.

Julve J, Rossell J, Correig E, Rojo MI, Amigó N, Hernández M, Traveset A, Carbonell M, Alonso N, Mauricio D, Castelblanco E. Predictive Value of the Advanced Lipoprotein Profile and Glycated Proteins on Diabetic Retinopathy. *Nutrients.* 2022. 14. (19):3932. IF:6,706. Q1.

Giordano B, Lorca C, March J, Rábano A, Del Ser T, Serra A, Gallart X. Oral Microbiota, Its Equilibrium and Implications in the Pathophysiology of Human Diseases: A Systematic Review. *Biomedicines.* 2022. 10. (8):1803. IF:4,757. Q2.

Otal A, Celada F, Chimeno J, Vijande J, Pellejero S, Perez MJ, Villafranca E, Fuentemilla N, Blazquez F, Rodriguez S, Perez J. Review on Treatment Planning Systems for Cervix Brachytherapy (Interventional Radiotherapy): Some Desirable and Convenient Practical Aspects to Be Implemented from Radiation Oncologist and Medical Physics Perspectives. *Cancers.* 2022. 14. (14):3467. IF:6,575. Q1.

RESEARCH TEAM

Researchers

Antonio Alcantara Tadeo
 Ramon Aldabo Gimeno
 Ana Rosa Calvo Redol
 Jose Antonio Carceller Vidal
 Miquel Falguera Sacrest
 Francisco Javier Gonzalez Tallada
 Maria Lourdes Hernandez Gimeno
 Ramon Jové Talavera
 Maria Carmen Jurjo Campo
 Alba Mari Lopez
 Jaume Mas Atance
 Jaume March Llanes
 Jordi Mele Olive
 Maria Merce Matute Crespo
 Maria Angels Mollo Iniesta
 Alba Muñoz Santa
 Antonio Otal Palacin
 Teresa Pedrol Aige
 Violant Pujol Aymerich
 Oscar Ripol Valentin
 Maria Carmen Roig Garcia
 Eloisa Seto Gort
 Jose Maria Sistac Ballarin
 Jordi Soldevila Estape
 Pau Sole Florensa
 Eduard Sole Mir
 Jorge Soler Gonzalez
 Alicia Traveset Maeso



GRUP VOLTTES

Fundraising





Collaborating companies and organizations



The contributions made by companies and organizations that work with IRBLleida have the mission of promoting, developing, managing and disseminating biomedical research in our region. Donations allow us to investigate in our 5 research areas. IRBLleida has the support of 179 companies and organizations from Lleida.

Why make a donation to IRBLleida?

- To promote health research and have an impact on the quality of life of the population.
- To improve the treatment of many diseases to benefit the health of future generations.
- To collaborate with the scientific community, patients and the public.
- To promote Lleida and the region.
- To share the values of the IRBLleida: responsibility, respect, rigour, generosity in synergy, independence of judgement, fairness in the distribution of resources, social commitment, leadership and enthusiasm.

Information 2022

179
TOTAL COLLABORATING
COMPANIES

27
NEW
COLLABORATORS

222.784€
CONTRIBUTION
TO IRBLLEIDA



Fundraising

	2018	2019	2020	2021	2022
Number of companies and organizations	157	166	135	157	179
Donations	190.939	210.056	179.379	202.561	222.784

Table 18. Total number of collaborating companies and organizations.

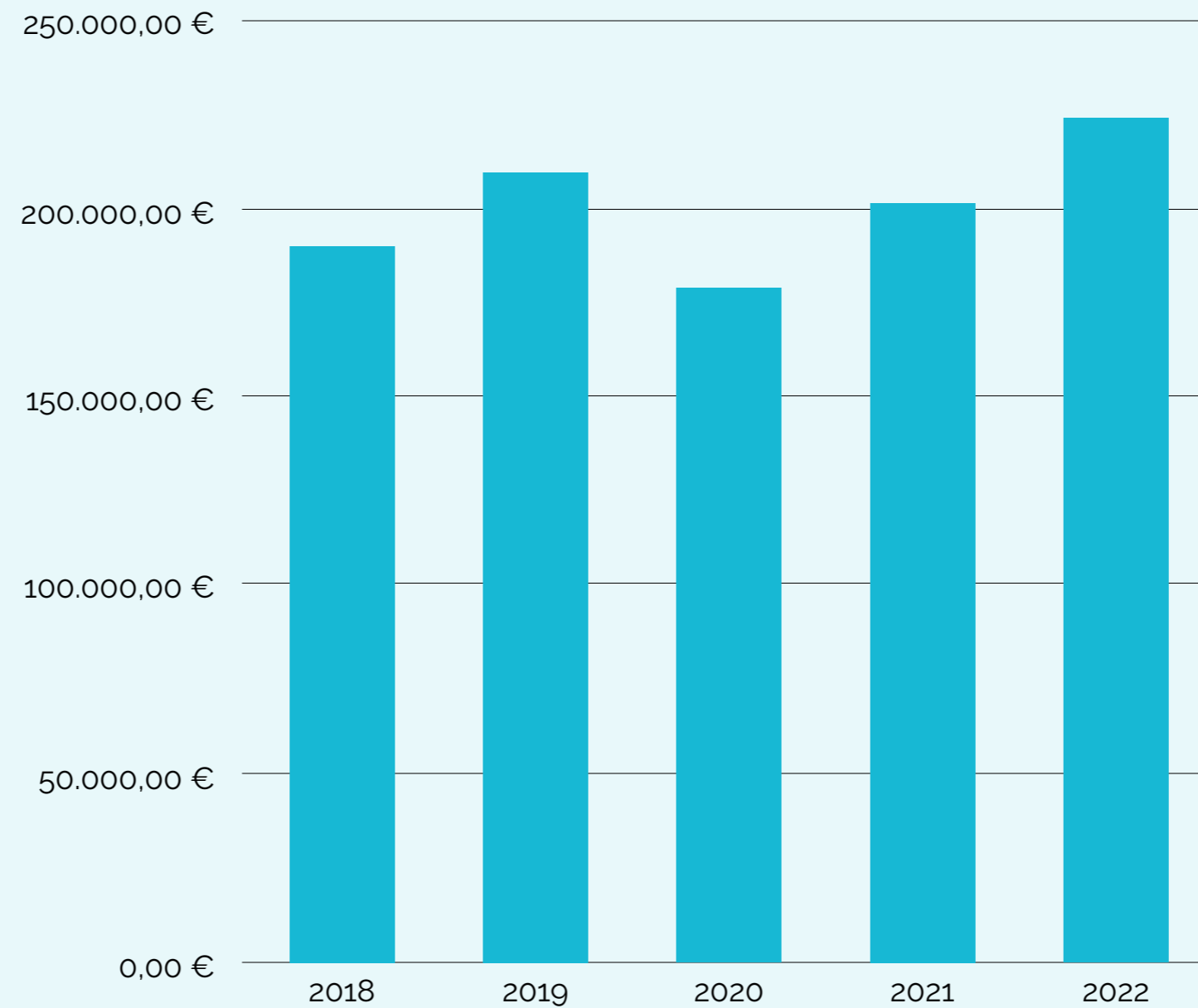


Figure 23. Donations made by companies and organizations since 2018.



Collaborating companies and organizations 2022



Collaborating companies and organizations 2022





Main funders



Acknowledgements to the main funders










**Biomedical Research Institute
of Lleida**

Av. Alcalde Rovira Roure, 80

25198 Lleida

Tel. 973 70 22 01

info@irblleida.cat

-  @IRBlleida_info
-  /IRBlleida
-  @irblleida
-  company/irblleida
-  canal IRBlleida



Diputació de Lleida

La força dels municipis