

Annual Report 2025

*30 years of IGTP
transforming knowledge into health*





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Message from the director general



Dr Jordi Barretina

Director general, Germans Trias i Pujol Research Institute (IGTP)

This year marked the 30th anniversary of our institute, a milestone that reflects its sustained growth and the consolidation of its role in the biomedical research ecosystem.

Over these three decades, IGTP has built a solid model of translational research, closely connected to the Germans Trias i Pujol University Hospital and the broader North Metropolitan Health Region. This proximity between research and clinical practice continues to be a defining feature of the institute, enabling the generation of knowledge with a direct impact on patient care. IGTP's strength lies in a collaborative model that connects research, clinical practice and innovation to generate real impact on health.

During 2025, we continued the implementation of the 2023–2027 Strategic Plan, reinforcing key priorities such as the development of transversal programs and the strengthening of clinical research. The institute also continued to harness the potential of its innovation ecosystem, with the second year of the Innomed program and the growth of its pipeline contributing to the translation of research into tangible applications.

The year also reflected a strong institutional commitment to responsible and sustainable practices, as well as to equality and talent development, essential elements to ensure long-term impact and competitiveness.

Celebrating 30 years has provided an opportunity to appreciate its journey, recognise the collective effort that has shaped IGTP and to reaffirm its future direction. In a context of increasing complexity in health and research, continued collaboration, strategic investment and the capacity to translate knowledge into solutions remain key priorities.

The progress achieved would not be possible without the dedication of the institute's professionals and collaborators, whose work continues to reinforce IGTP's position in the research and healthcare system.

Message from the scientific director



Dr Julia García Prado

Scientific director, Germans Trias i Pujol Research Institute (IGTP)

In 2025, IGTP reached an important milestone, marking 30 years of scientific activity. This anniversary provides an opportunity to reflect on institutional advances and reinforce its commitment to high-quality, impactful research.

The institute's scientific activity is grounded on a multidisciplinary model that integrates basic, translational, clinical and population-based research, supported by strong collaboration across the Can Ruti Campus to ensure impact. This approach enables IGTP to address complex health challenges and advance knowledge across research areas.

During the year, research activity continued to grow, supported by the consolidation of scientific platforms and the strengthening of transversal scientific programs such as CARE and CORE. These initiatives play a key role in promoting collaboration, optimising resources and enhancing the translational dimension of our research.

IGTP maintained a strong presence in competitive research and collaborative networks, contributing to national and international initiatives and generating high-quality scientific output. At the same time, the integration of innovation processes into research activity has continued to advance, reinforcing the pathway from discovery to application.

Training and talent development remain central to the institute's mission, alongside a commitment to inclusive, responsible and sustainable research practices. Creating an environment that supports researchers at all stages of their careers is essential to ensure continuity and excellence.

Looking ahead, IGTP will continue to strengthen its scientific strategy by fostering collaboration and promoting research that addresses societal needs, while maintaining a clear focus on impact to solve health challenges.



Three decades of research and innovation

Three decades of research and innovation

Our journey



Over the past 30 years, the Germans Trias i Pujol Research Institute (IGTP) has evolved from early research initiatives linked to the Can Ruti Campus into a consolidated biomedical research institute within the Catalan and Spanish research systems.

This trajectory has been **defined by a strong commitment to translational research**, fostering close collaboration between researchers, clinicians and institutional partners, and contributing to improved health outcomes and knowledge generation.

Today, IGTP is recognised as a CERCA centre and an Instituto de Investigación Sanitaria accredited by the Instituto de Salud Carlos III (ISCIII), reflecting its scientific excellence and impact.

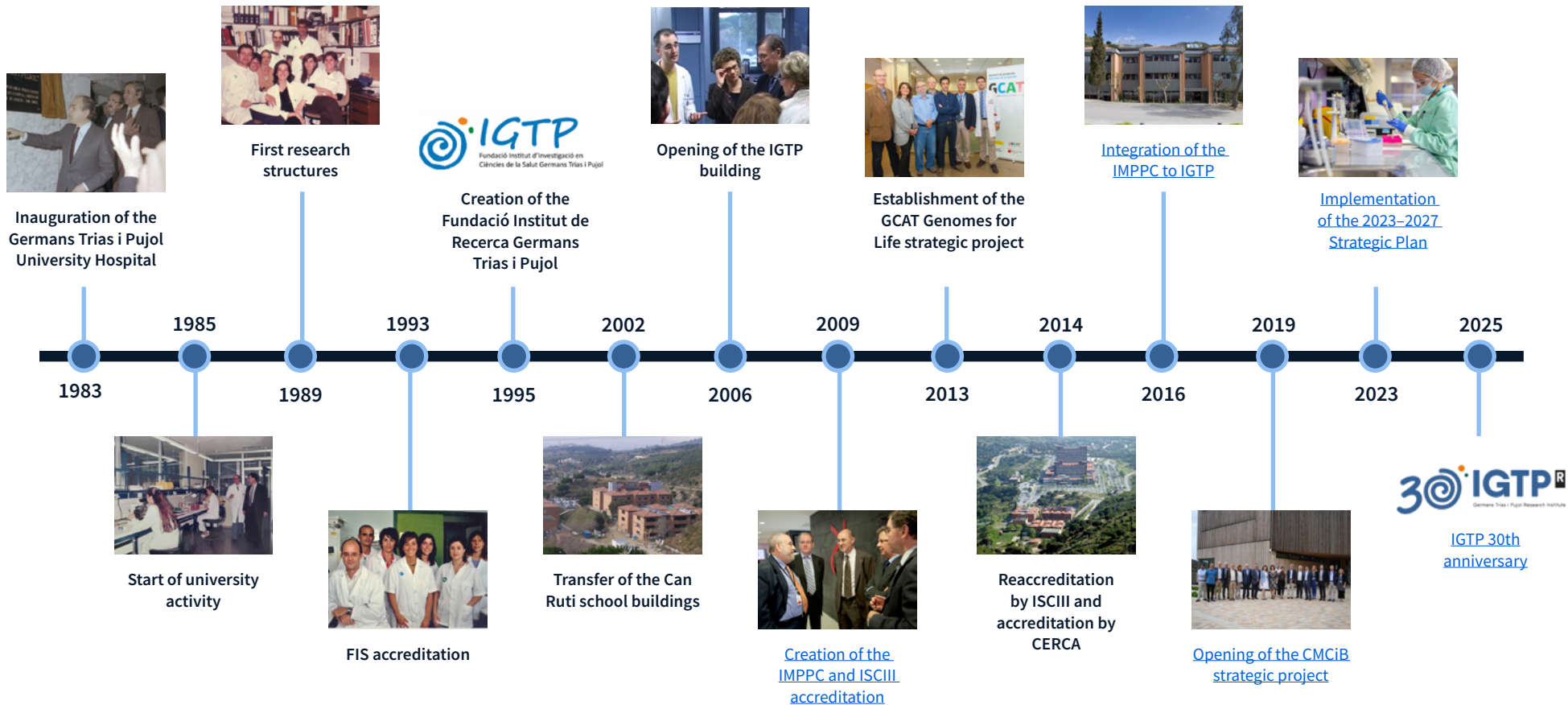
[Learn more](#)

30th anniversary video of IGTP

A retrospective of the institute's evolution, featuring past and current leadership together with members of the scientific and professional community, highlighting the shared vision, key milestones and institutional values that have shaped IGTP over three decades.



Timeline of key milestones



[View the images in high resolution](#)

30th anniversary celebration



In 2025, **IGTP marked its 30th anniversary through a program of institutional and community-oriented activities**, aimed at recognising its trajectory and reinforcing its future positioning within the research and innovation ecosystem.

These initiatives brought together the institute's community and collaborators, highlighting the collective dimension of its achievements and its ongoing commitment to translational research.

Annual Symposium

Held on 5 November, the symposium brought together more than 200 researchers from the IIS IGTP community, providing a space for scientific exchange, reflection on the institute's trajectory and discussion of future challenges in biomedical research and innovation at the Can Ruti Campus.

The program included scientific sessions, institutional interventions and networking activities that highlighted the multidisciplinary and collaborative nature of the campus research ecosystem, while also reinforcing the role of translational research as a core element of IGTP's mission.

Image gallery



Christmas celebration

On 11 December, IGTP staff gathered for a special Christmas event that combined the traditional internal awards with commemorative activities marking the 30th anniversary, recognising the contribution of professionals across the organisation.

Image gallery



Congratulatory video

A compilation of messages from institutional partners and collaborators, acknowledging IGTP's role in advancing biomedical research and its contribution to the research ecosystem.

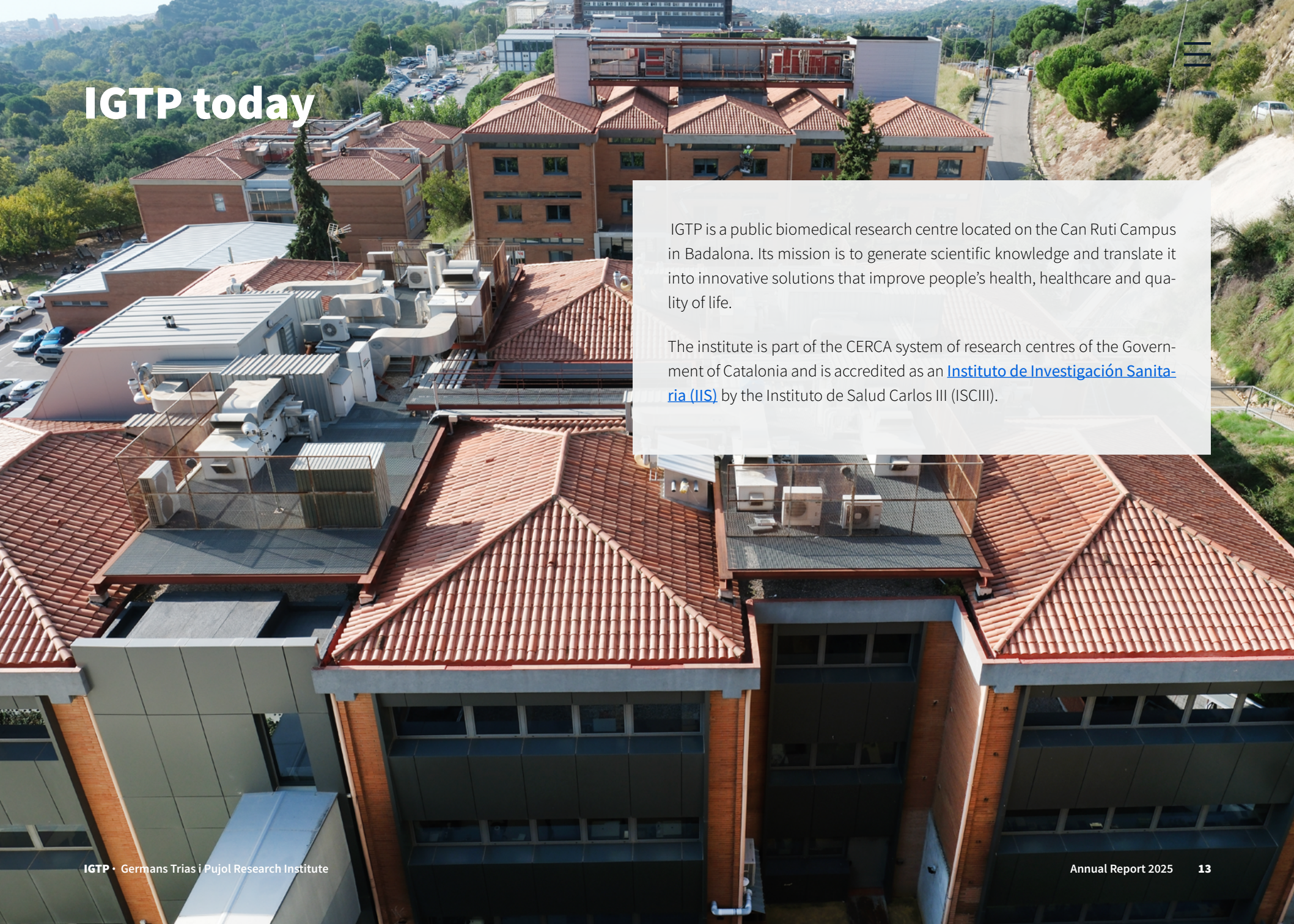


The institutional closing event of the anniversary, held in April 2026, will be featured in the next Annual Report.



IGTP today

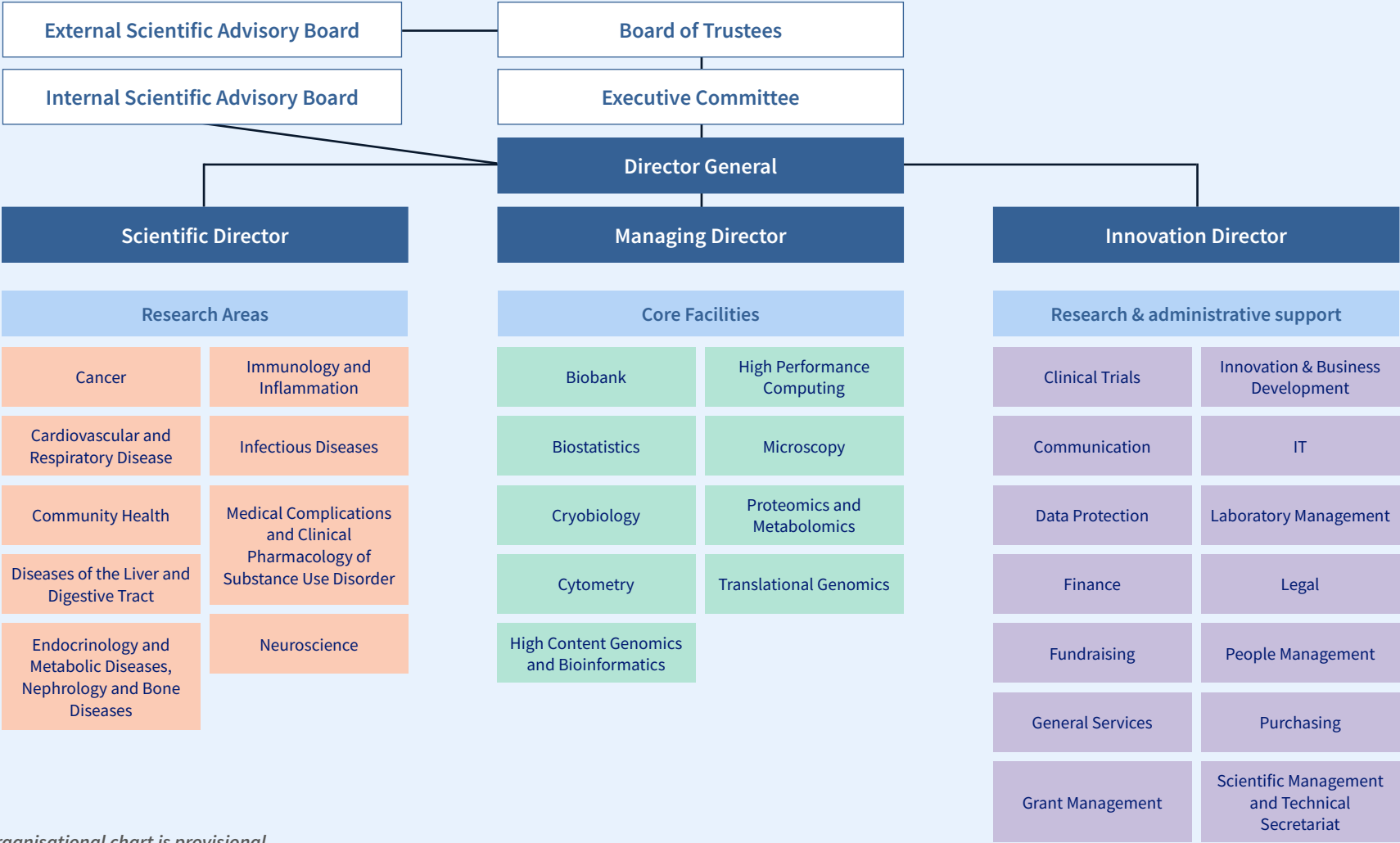
IGTP today



IGTP is a public biomedical research centre located on the Can Ruti Campus in Badalona. Its mission is to generate scientific knowledge and translate it into innovative solutions that improve people's health, healthcare and quality of life.

The institute is part of the CERCA system of research centres of the Government of Catalonia and is accredited as an [Institut de Investigació Sanitària \(IIS\)](#) by the Instituto de Salud Carlos III (ISCIII).

Organisational chart



This organisational chart is provisional.

Governing bodies

The positions outlined here refer to the year 2025.

Management committee



[Jordi Barretina](#)
Director general



[Carles Esquerré](#)
Managing director



[Julia García Prado](#)
Scientific director
direccio@igtp.cat



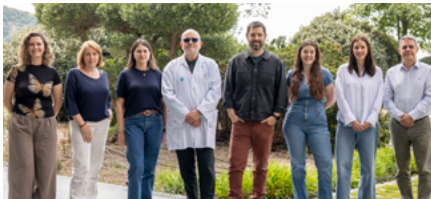
[Raül Zurita](#)
Innovation director
innovation@igtp.cat



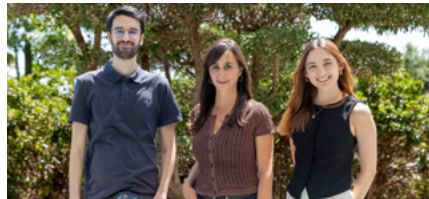
Meritxell Nevado
Director secretary
mnevado@igtp.cat
T. (+34) 93 033 05 00

Jessica Soria
Managing director secretary
jsoria@igtp.cat
T. (+34) 93 554 30 51

Research support



Clinical Research Support Area
Head: Sebastià Videla



Communications Unit
Head: Tamara Gutiérrez



Core Facilities
*Coordinator: Carolina Gálvez (until March),
David Izquierdo (from April)*



Data Protection
Head: Iris Bargalló

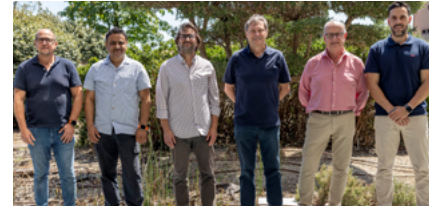
The positions outlined here refer to the year 2025.



Finance Unit
Head: Eva García



Fundraising Unit
Head: Anna Duran



General Services Unit
Head: Francesc Velarde



Innovation & Business Development
Head: Raül Zurita



IT Unit
Head: Ruben Cobo



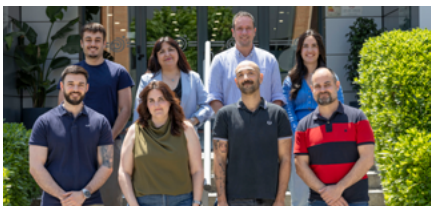
Laboratory Management Unit
Head: David Izquierdo



Legal Unit
Head: Lourdes Gaig



People Management Unit
Head: Montserrat González



Project Management Unit
Head: Oscar Fraile



Purchasing Unit
Head: Juan Giardini



Scientific Management and Technical Secretariat
Head: Julia García Prado

Board of trustees

The positions outlined here refer to the year 2025.

PRESIDENT

Olga Pané
Minister of Health,
Government of Catalonia

FIRST VICE-PRESIDENT

Núria Montserrat
Minister of Research and Universities,
Government of Catalonia

SECOND VICE-PRESIDENT

Francisco Javier Lafuente
Vice-chancellor,
Universitat Autònoma de Barcelona (UAB)

MEMBERS

Jordi Ara
Clinical director of Nephrology and Urology
and director of Research, Germans Trias i
Pujol Hospital (HUGTiP) (from August)

Montserrat Bernabeu
Assistant director and co-director,
Fundació Institut Guttmann

Joan Brunet
Director general,
Institut Català d'Oncologia (ICO)

Bonaventura Clotet
Director general, IrsiCaixa

Evarist Feliu
President of the Management Commission,
Josep Carreras Leukaemia Research
Institute

Xavier García Albiol
Mayor of Badalona, Badalona City Council

Joan Gómez

Director general of Research of the Ministry
of Research and Universities,
Government of Catalonia

Montserrat Llavayol

Deputy director of Research and Innovation
of the Department of Governance and
Institutional Relations, Department of
Health of the Government of Catalonia

Assumpció Malgosa

Vice-rector of Research and Knowledge
Transfer, Universitat Autònoma de
Barcelona

Anna Millán

Director general, Banc de Sang i Teixits

Josep M^a Mòdol

Managing director, HUGTiP

Laia Pellejà

Director general, CERCA

Antoni Plasència

Director general of Research and Health
Innovation of the Department of Health,
Government of Catalonia (from March)

Marc Vilar

Managing director, Logaritme Serveis
Logístics AIE

SECRETARY

Josep M. Alcobarro
CERCA

The positions outlined here refer to the year 2025.

Executive committee

PRESIDENT

Montserrat Llavyol

Deputy director of Research and Innovation of the Department of Governance and Institutional Relations, Department of Health of the Government of Catalonia

MEMBERS

Jordi Ara

Clinical director of Nephrology and Urology and director of Research, HUGTiP (from August)

Joan Brunet

Director general, ICO

Assumpció Malgosa

Vice-rector for Research, UAB

Josep M^a Mòdol

Managing director, HUGTiP

Laia Pellejà

Director general, CERCA

SECRETARY (not a trustee)

Josep M Alcobarro

CERCA

External scientific advisory board

CHAIR

Justo Castaño

Professor of Cell Biology at the Department of Cell Biology, Physiology and Immunology, University of Cordoba, and head of the Hormones and Cancer Research Group, IMIBIC - Maimónides Biomedical Research Institute of Córdoba

MEMBERS

Amaia Calderón

Principal researcher at the Aging Research Center, Karolinska Institutet

Angel Pellicer

Adjunct professor, Department of Pathology, New York University School of Medicine

Eva Tolosa

Director of Immunology, University Medical Center Hamburg-Eppendorf

Alfonso Valencia

Director of the Life Sciences Department, Barcelona Super Computing Centre, ICREA Research Professor, IMPACT data coordinator

Laura Parkkinen

Professor of Translational Neuropathology, director of the Oxford Brain Bank, Nuffield Department of Clinical Neurosciences, University of Oxford

Internal scientific advisory board

PRESIDENT

Julia García Prado

IGTP & IrsiCaixa

SECRETARY

Eva Martínez Balibrea

ICO & IrsiCaixa

MEMBERS

Iris Bargalló

IGTP

Julia Blanco

IrsiCaixa

Magí Farré

HUGTiP

Montserrat González

IGTP

Raquel Guillamat

IGTP

Ariadna Huertas

HUGTiP

Eva Martínez Cáceres

HUGTiP

Anna Martínez Cardús

ICO & IGTP

Mònica Millán

HUGTiP

Omar Ortega

Consorci Sanitari del Maresme

Carlos Rodrigo

HUGTiP

Santi Roura

IGTP

Maria Saigí

ICO - IGTP

Javier Solana

Fundació Institut Guttmann

Pere Torán

Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina (IDIAPJGol)

Laura Torres

IGTP

Mireia Vera

IGTP

Raül Zurita

IGTP

Strategy and purpose

IGTP's purpose is to improve people's health and quality of life through impactful, collaborative and sustainable biomedical research and innovation.

The [2023–2027 Strategic Plan](#) translates this purpose into institutional priorities and objectives aligned with the Sustainable Development Goals of the 2030 Agenda.



Strategic Plan 2023-2027 Summary



GROWTH AND INSTITUTIONAL ALLIANCES

SCIENTIFIC MODEL AND FOSTERING
TRANSVERSAL RESEARCH PROGRAMS

DRIVING CLINICAL RESEARCH

RESOURCE MANAGEMENT,
PROFESSIONAL CAPACITATION
AND DEVELOPMENT

FLOOR SPACE, INFRASTRUCTURE
AND CORE FACILITIES

INNOVATION AND IMPACT

Responsible and sustainable practices

IGTP continues to integrate environmental responsibility into its daily operations and research activities. In 2025, efforts focused on **consolidating measures already in place while taking further steps towards a more structured and measurable sustainability strategy.**



KEY MILESTONES



Electricity consumption reduced by 4.5% despite increased activity



Energy performance certificates obtained for the Mar and Muntanya buildings



Integration into the Sustainable Research of Catalonia (SuRe-Cat) network

Energy and infrastructure

Key actions focused on improving energy performance and extending the lifespan of infrastructure:

- Replacement of fluorescent lighting with LED systems and installation of presence-based controls.
- Adjustment of operating schedules and temperature settings.
- Upgrades and repairs of climate control systems, including chillers and fan coil units.
- Preventive maintenance also accounted for a significant share of building maintenance activity.

Sustainable practices in research

Sustainability efforts were also progressively embedded in research environments. Across laboratories and scientific platforms, actions included:

- Adjusting ultra-low temperature freezers to -75°C to reduce energy consumption.
- Promoting reuse through washable materials and redistribution of unused reagents.
- Encouraging repair and preventive maintenance over replacement.
- Providing training to improve waste segregation and management.

Community and shared responsibility

Beyond infrastructure and laboratories, sustainability at IGTP is supported by collective action and initiatives across the institute, contributing to a broader culture of environmental responsibility.

- Reuse and donation of materials, including packaging and laboratory supplies.
- Book exchange initiatives and promotion of reusable bottles and cups.
- Informal initiatives such as staff-led reuse initiatives and redistribution of materials.
- Measures to reduce impact on local biodiversity, such as installing bird-safe window markings on building façades (image from the previous page).

Looking ahead

Building on the progress achieved in 2025, IGTP will continue strengthening its environmental sustainability strategy through a more coordinated framework, focused on reducing energy consumption and emissions, advancing decarbonisation measures, reinforcing sustainable practices in research environments, and improving monitoring and community engagement.



Equality, diversity and inclusion

Equality at IGTP

Women for Equity (W4E)

Alongside their participation in science communication events and communities of practice to promote greater equity in healthcare, [Women for Equity's](#) most notable activity in 2025 was the organisation of their **7th Symposium**, titled [“Exploring a Wider Gender Perspective”](#).

Celebrated in the context of the International Day for Women and Girls, the event addressed the limitations of binary sex categories in healthcare and research and the need for more inclusive approaches to sex and gender representation in health data. Contributions from Dr Rosa Almirall (Transit Service for the Promotion of Health in Trans People in Catalonia) and Dr Robert Ellis (University of Exeter) helped frame the discussion, which concluded with an interactive round table exploring challenges and possible solutions from both professional and patient perspectives.



IGTP's Equality Committee

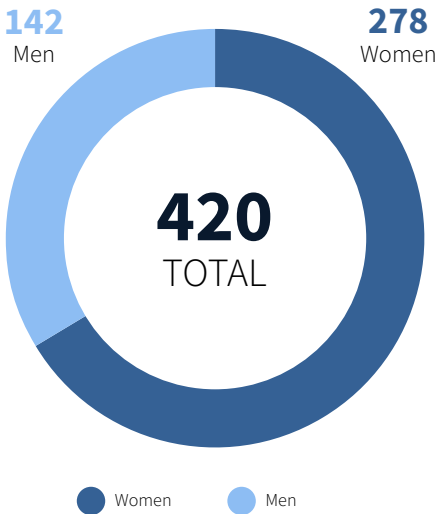
In 2025, the Equality Committee closed the 2021-2025 Gender Equality Plan (GEP) and worked on preparing the new one for 2026-2030. Focus was also on incorporating new legislation for the protection of employees into IGTP procedures.

In this context, the Committee administered a questionnaire to gather qualitative data to inform the new GEP, adapted the protocols for the prevention of harassment to include specific protection for the LGBTQ+ community, and incorporated the whistleblower channel into IGTP procedures, including staff training on its use in line with Spanish legislation.

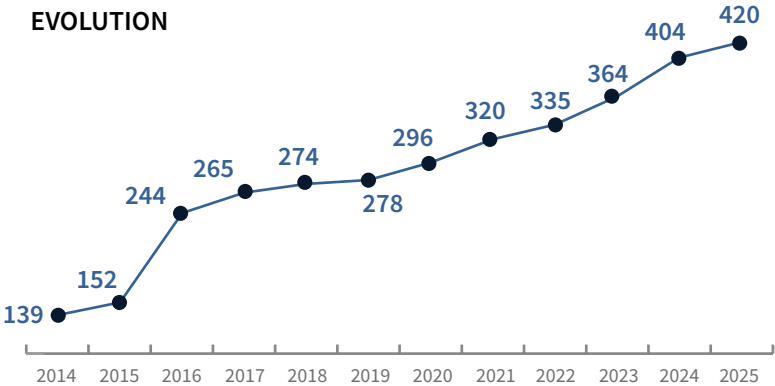
Staff

More than 1,000 people form part of the IGTP community, including affiliated researchers connected to the institute through its partner organisations. This multidisciplinary environment reflects the collaborative spirit of the Can Ruti Campus and supports the advancement of translational research, innovation and knowledge transfer.

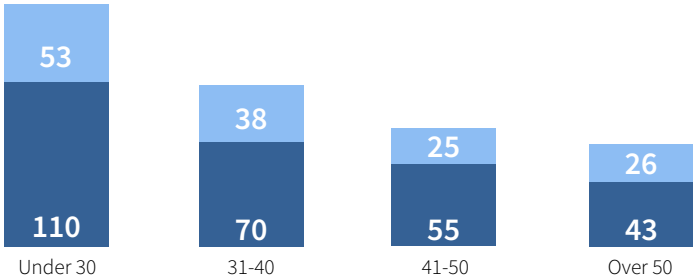
CONTRACTED STAFF



EVOLUTION



AGE



PROFESSIONAL CATEGORIES



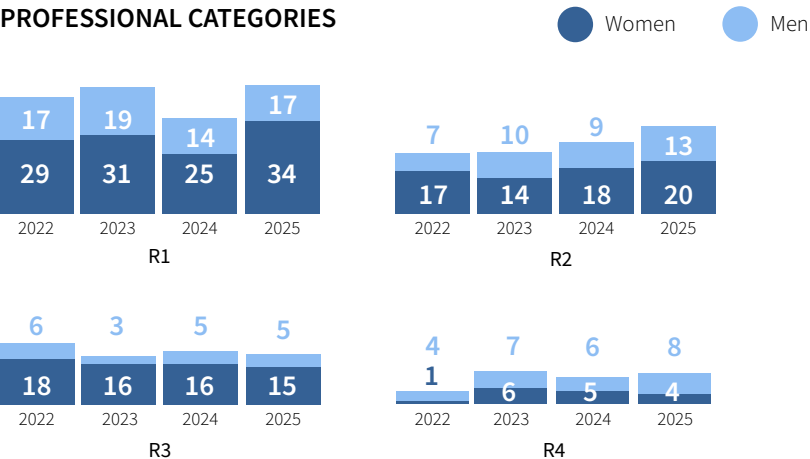
European recognition for HR excellence



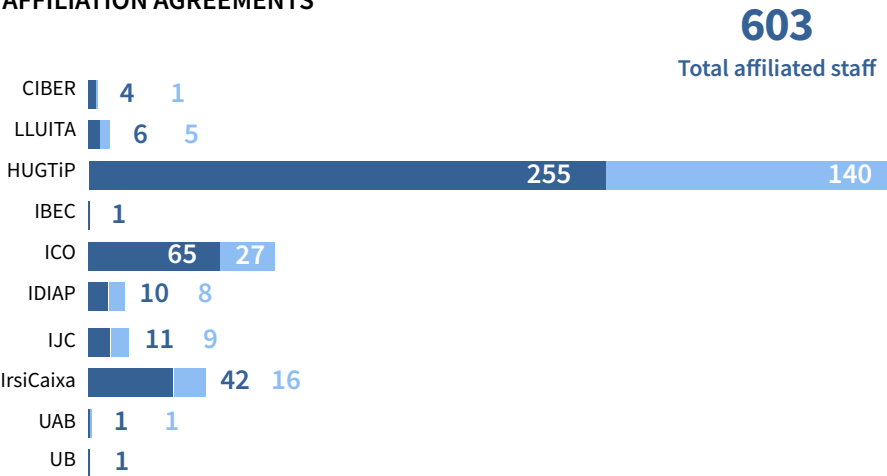
Since 2019, IGTP has held the European Commission’s “HR Excellence in Research” accreditation, a recognition of the institute’s commitment to fair, transparent and merit-based recruitment, as well as to the continuous improvement of working conditions and career development for researchers. The distinction aligns IGTP’s human resources policies with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

Researchers

PROFESSIONAL CATEGORIES



AFFILIATION AGREEMENTS



RESEARCHERS FUNDED BY FELLOWSHIPS





Research and innovation

Research and innovation

Research areas and groups

9

AFFILIATED INSTITUTIONS

- [Banc de Sang i Teixits](#)
- [Consorci Sanitari del Maresme \(CSdM\)](#)
- [Fundació Institut Guttmann](#)
- [Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina \(IDIAPJGol\)](#)
- [Germans Trias i Pujol University Hospital \(HUGTiP\)](#)
- [Institut Català d'Oncologia \(ICO\)](#)
- [IrsiCaixa](#)
- [Josep Carreras Leukaemia Research Institute \(IJC\)](#)
- [Universitat Autònoma de Barcelona \(UAB\)](#)

These institutions are affiliated within the framework of the institute's accreditation as an Instituto de Investigación Sanitaria (IIS).

45

RESEARCH GROUPS

The total number of research groups includes both those directly contracted by IGTP and those affiliated from HUGTiP, ICO, ISGlobal, Fundació Lluïta contra les Infeccions and CSdM. See the corresponding pages for further details on their activity.

9

RESEARCH AREAS

Cancer	Cardiovascular and Respiratory Disease	Community Health
Diseases of the Liver and Digestive Tract	Endocrinology and Metabolic Diseases, Nephrology and Bone Diseases	Immunology and Inflammation
Infectious Diseases	Medical Complications and Clinical Pharmacology of Substance Use Disorder	Neuroscience

Learn more

Transversal programs

Translational Program in Cancer Research (CARE)



12 RESEARCH GROUPS

2 CLINICAL SERVICES

CARE
Translational Program
in CANCER RESEARCH



Scope and aim

The program aims to cover all forms of cancer developed by patients at the Can Ruti Campus, with the goal of accelerating the transfer of cutting-edge knowledge and technologies to the clinic, for the prevention, diagnosis and treatment of cancer. The program is meant to enhance the quality of cancer research and maximise its impact on clinical practice by:

- Fostering the interaction among cancer researchers to establish a collaborative and transversal network of clinical, translational and basic research.
- Promoting the use and translation of advanced technology and methodologies, including genomic and computational resources.
- Advancing translational research towards innovation and technology transfer.
- Developing and implementing precision and personalised medicine.
- Contributing to disseminate this knowledge to society, especially to patients, by actively promoting their involvement.

The CARE Program is a multidisciplinary network of researchers from the Can Ruti Campus who share common interests and resources in the field of cancer research.

Structure of the program

Institutions

Core members: Germans Trias i Pujol Research Institute (IGTP), Germans Trias i Pujol University Hospital (HUGTiP), Institut Català d'Oncologia (ICO)

Associate institutions: Josep Carreras Leukaemia Research Institute (IJC), Irsi-Caixa, Universitat Autònoma de Barcelona (UAB)

Coordination group

- Mireia Margelí, clinical research director
- Miguel A Peinado, basic research director
- Anna Martínez-Cardús, networking coordinator
- Eduard Serra, scientific coordinator
- Arola Fortian, training & communications coordinator

CARE Program nodes

The CARE program articulates its research activity in transversal nodes, focused on shared technologies or methodological areas, and in multidisciplinary groups, oriented towards specific pathologies and formed by clinical, translational and basic professionals:

- Preclinical Models (Coordinator: Meritxell Carrió)
- Immunology/Immunotherapy (Coordinators: Esther Ballana, Joan Climent)
- Tumour Heterogeneity & Liquid Biopsy (Coordinators: Sofia España, Berta Martín)
- Bioinformatics (Coordinators: Sergio Alonso, Bernat Gel)

Pathology-focused multidisciplinary groups

- Taskforce for Colorectal Cancer (Coordinators: Eva Martínez-Balibrea, Núria Mulet)
- Can Ruti Sarcoma Group (Coordinator: Eduard Serra)
- Gastric Cancer Working Group (Co-coordinators: Cinta Hierro and Sergio Alonso)
- Melanoma Working Group (Coordinator: Anna Martínez-Cardús)

Highlights

1

CARE Annual Meeting

6

Oncology courses and scientific meetings

5

Training capsules

4

Outreach activities

18

CARE translational seminars

243

Publications

57

National projects

6

International projects

62%

Q1 journals

€6.4M

Funding

€2.1M

Funding

During 2025, the already well-established CARE program was further strengthened through the incorporation and development of the new Bioinformatics node, the creation of new multidisciplinary working groups focused on specific diseases, such as the Gastric Cancer and Melanoma Working Groups, and the reorganisation of the coordinating group's structure and activities.

The different CARE nodes continued to meet regularly and organised specialised training capsules and seminars. In addition, the CARE Translational Seminars continued to be held fortnightly, attracting high levels of participation.

CARE also devoted part of its activity to raising awareness of cancer research and bringing it closer to patients and society as a whole. The program featured in a new episode of IGTP's podcast [Un bri de ciència](#); several CARE researchers took part in the [8th edition of #científiques](#), helping to bring science into schools; and the Can Ruti Campus welcomed patients and families from across Europe as part of the [Neurofibromatosis Academy 2025](#).

In the field of innovation, members of the program once again participated in GrowInn, the project incubator promoted within the framework of the [Innomed Program](#).

In addition, the program began its activities as part of the Northern Catalonia Comprehensive Cancer Centre (CCC Nord-Catalunya), contributing to its consolidation within the European pilot program.

Featured publications

Ortega-Bertran S, Fernández-Rodríguez J, Magallón-Lorenz M, Zhang X, Creus-Bachiller E, Diazgranados AP, Uriarte-Arrazola I, Mazuelas H, Blanco I, Valverde C, Carrió M, Villanueva A, De Raedt T, Romagosa C, Gel B, Salvador H, Ferrer M, Lázaro C, Serra E. **Triple Combination of MEK, BET, and CDK Inhibitors Significantly Reduces Human Malignant Peripheral Nerve Sheath Tumors in Mouse Models.** *Clin Cancer Res.* 2025 Mar 3;31(5):907-920. DOI: [10.1158/1078-0432.CCR-24-2807](#).

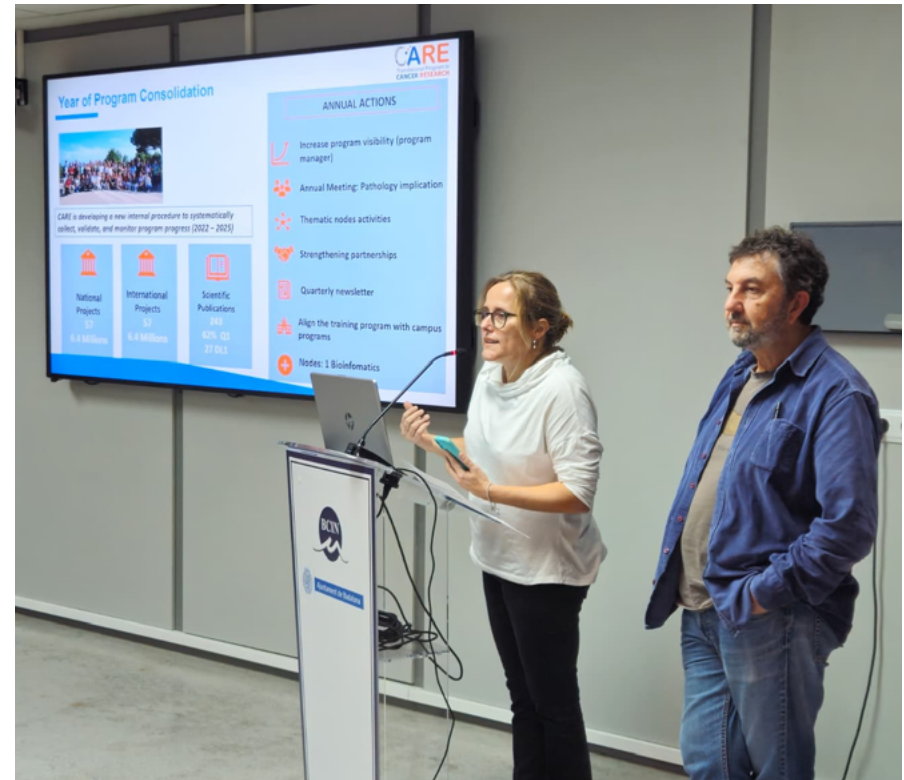
Rodríguez-Lloveras H, Zafon C, Iglesias C, Marcos-Ruiz J, Gil J, Rueda-Pujol A, González L, Mayor R, Klein Hesselink EN, van Hemel BM, Carrato C, Perelló-Fabregat C, Hernández-Losa J, Somoza R, Pluvinet R, Sánchez-Herrero JF, Sumoy L, Seoane J, Riesco-Eizaguirre G, Montero-Conde C, Robledo M, Hernando J, Capdevila J, Reverter JL, Puig-Domingo M, Links TP, Jordà M. **DNA Methylation Dynamics and Prognostic Implications in Metastatic Differentiated Thyroid Cancer.** *Thyroid.* 2025 May;35(5):494-507. DOI: [10.1089/thy.2024.0303](#). [News story](#)

Pons L, Hernandez L, Urbizu A, Arnaldo L, Rodriguez-Martinez P, Sanz C, Muñoz-Mármol AM, Fernandez E, Felip E, Quiroga V, Margelí M, Fernandez PL. **Molecular Landscape, Genomic Shift, and Prediction in the Neoadjuvant Setting of Human Epidermal Growth Factor Receptor 2-Positive Breast Cancer.** *Mod Pathol.* 2025 Sep;38(9):100787. DOI: [10.1016/j.modpat.2025.100787](#).

Pera J, Romero-Moya D, Torralba-Sales E, Andersson R, García-Hernández V, Magallon-Mosella M, Distefano M, Berenguer Balaguer C, Castaño J, De Giorgio F, Qiu Z, Iglesias A, Spurk P, Montserrat-Vazquez S, Pasquali L, Liang Z, Català A, Florian MC, Wlodarski MW, Bigas A, Marin-Bejar O, Giorgetti A. **Human iPSCs-based modeling unveils SETBP1 as a driver of chromatin rewiring in GATA2 deficiency.** *Nat Commun.* 2025 Nov 17;16(1):10035. DOI: [10.1038/s41467-025-65806-9](#). [News story](#)

Navarro-Jiménez M, González B, Mulet N, Hierro C, Alonso S. **KRAS-targeted therapies in colorectal cancer: a systematic analysis of mutations, inhibitors, and clinical trials.** *NPJ Precis Oncol.* 2025 Nov 26;9(1):380. DOI: [10.1038/s41698-025-01166-3](https://doi.org/10.1038/s41698-025-01166-3). [News story](#)

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Program in Public Health and Primary Healthcare (CORE)



29

RESEARCH
GROUPS

2

CLINICAL
SERVICES



The CORE Program is a multidisciplinary network of researchers united by shared interests and resources in population research on the Can Ruti Campus. As one of the transversal programs of the IIS IGTP, CORE is part of IGTP's strategy for promoting research with a positive impact on the health of citizens.

Scope and aim

The main objectives of the CORE Program are:

- Visualisation of population-based research conducted at the Can Ruti Campus.
- Creation of a multidisciplinary research framework that facilitates synergies to design and implement applied research at the population level.

- Generation of knowledge to promote management and public health policies based on scientific evidence.
- Strengthening of primary care as the core pillar of the health system.

The program pursues these aims through activities that:

- Encourage population based collaborative multidisciplinary research between the different actors on the Can Ruti Campus, including Primary Healthcare, and other primary care and public health units.
- Promote and visualise action-oriented program-based and participatory research.
- Facilitate the integration of research results into primary care clinical practice, hospital care and public health policies.
- Facilitate the integration of talent into research groups of the program and implement strategies to assure their sustainability and competitiveness.
- Facilitate the use of shared technological platforms, facilities and analytical skills.
- Act as a hub for training and teaching to improve the population research abilities of its investigators and those on the Can Ruti Campus.
- Strengthen emerging groups.

Structure of the program

Institutions

Promoters: Centre for Epidemiological Studies on HIV/AIDS and STI of Catalonia (CEEISCAT) – Germans Trias i Pujol Research Institute (IGTP) / Fundació Institut Universitari per a la Recerca a l'Atenció Primària de Salut Jordi Gol i Gurina (IDIAPJGol)

Associate institutions: IDIAPJGol / Germans Trias i Pujol University Hospital (HUGTiP) / Institut Català de la Salut (ICS), Barcelona Metropolitana Nord (BMN) / Health Department of the Government of Catalonia

Steering Committee

- Directors: Jordi Casabona (CEEISCAT-IGTP) and Pere Toran (IDIAPJGol-USR-MPN)
- Scientific coordinators: Cinta Folch and Rosa García
- Education & training coordinators: Evelin López and Noemí Lamonja
- Internal operational working group coordinators: Cristina Agustí and Guillem Pera
- Administration: Montse Galdón and Sandra Sanchez
- Communications: Sara Castillo
- Support: Raquel Rionegro

Executive Committee

- Jordi Casabona, CEEISCAT-IGTP
- Pere Toran, IDIAPJGol-USR-MPN
- Esteve Fernández, secretary of Public Health, Department of Health
- Jordi Barretina, director general, IGTP
- Julia García, scientific director, IGTP
- Josep Basora, director, IDIAPJGol
- Oriol Estrada, director of Healthcare Strategy and Innovation, HUGTiP
- Jordi Ara, clinical research coordinator and clinical director of Nephrology and Urology, HUGTiP
- Josep Maria Mòdol, managing director, HUGTiP
- Iolanda Lejardi, director of Primary Health Care BMN
- Bonaventura Clotet, clinical territorial director BMN HUGTiP, director of IrsiCaixa and president of Fundació Lluita contra les Infeccions

Highlights

6

Douglas Altman
Biostatistics Sessions

3

Susie Bayarri
Biostatistics Sessions

4

STI Sessions

2

CORE
Seminars

1

CORE Scientific
Conference

In 2025, the CORE Program consolidated its scientific and training activities. The biostatistics program progressed with the completion of the Douglas Altman cycle (2024–2025) and the launch of the new Susie Bayarri cycle (2025–2026). In parallel, STI sessions and thematic seminars strengthened a multidisciplinary approach to population-based research.

The most notable event of the year was the [1st CORE Scientific Conference](#) (June, BCIN), which brought together around one hundred professionals and became a key platform for networking and the development of new collaborations. As a result of this meeting, new lines of work were initiated and will be formalised during 2026, including areas such as population and molecular biology, community-based public health interventions, clinical research and population-level translation, the application of new technologies such as artificial intelligence in population research and shared data, and the use of databases in the primary care setting.

Core facilities



The Scientific-Technical Platforms (ICTS) at IGTP provide **centralised access to specialised equipment and expertise, supporting both internal research groups and external academic and private partners**. These platforms are supported by Fundació I-CERCA through the CERCAGINYS program, funded by the Spanish Ministry of Science, Innovation and Universities. Through this initiative, the ICTS contribute to improving access to high-level facilities across the research community while also fostering collaboration with the private sector and promoting the use of their services by industry.

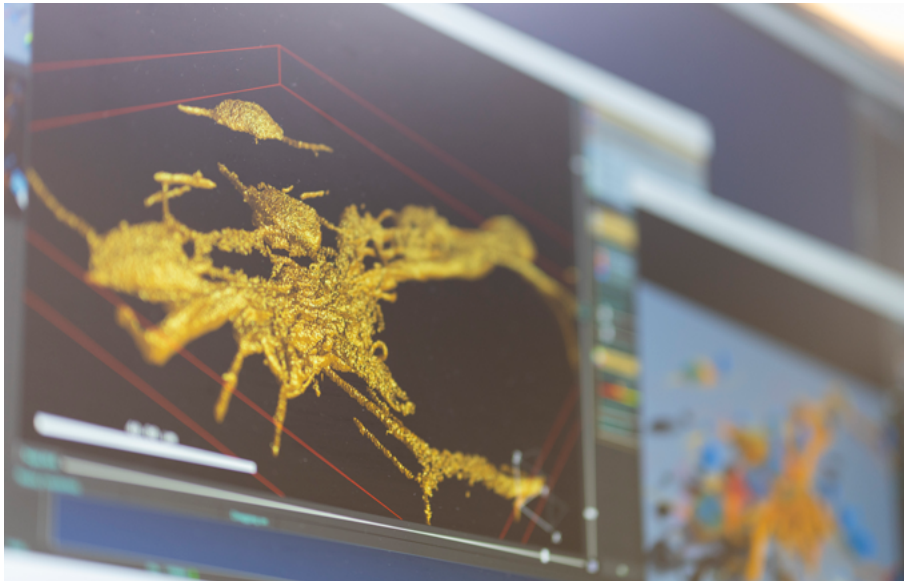
Technology
and services at IGTP



2nd edition of the Campus Can Ruti Core Facilities Infoday

Held on 20 November, the event brought together the campus research community to showcase the scientific services and support offered by the core facilities of the Josep Carreras and Germans Trias i Pujol research institutes, both for on-campus and external research. The program also included the presentation of the new IGTP–IJC Joint Flow Cytometry Unit, featuring one of the most advanced infrastructures in Europe, as well as the IJC Translational-PATH2CURE hub, aimed at accelerating the translation of scientific discoveries into patient treatments.

	30	466	403	79
	Staff	Projects served	PIs served	Customers served
	STAFF	PIs SERVED	PROJECTS SERVED	
Biobank	7	65	84	
Biostatistics	7	39	39	
Cryobiology	1	64	71	
Cytometry	4	89	104	
High Content Genomics and Bioinformatics	4	22	22	
High Performance Computing	1	21	26	
Microscopy	1	29	36	
Proteomics and Metabolomics	2	6	7	
Translational Genomics	3	68	77	



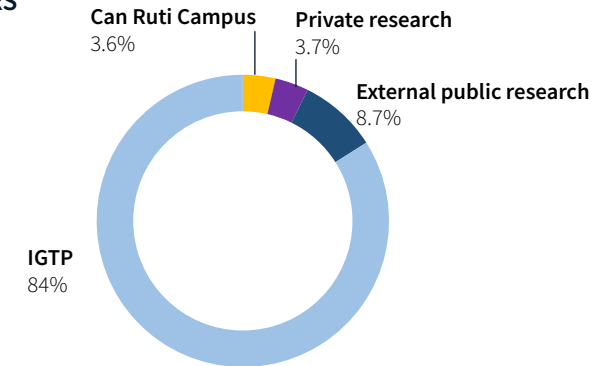
BIOBANK



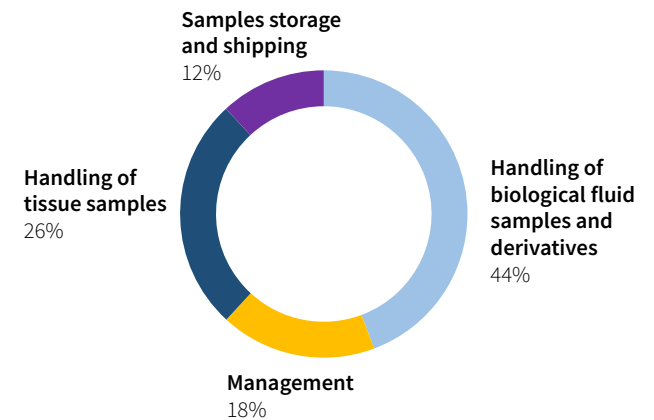
7
MEMBERS

- Record number of samples collected for research: 36,255 samples from 4,214 donors.
- Presentation of the international ASSET project (Digital tools for the management and exchange of research animal samples) at the III ISCIII Platforms Conference.
- Contribution to the review and Spanish translation of the [5th edition of the ISBER Best Practices](#), an international reference guide for sample and biobank management.
- Participation in the Postgraduate Programme in Research and Innovation in Health Sciences at the Universitat Autònoma de Barcelona, as well as in Science Week - Campus Open Days.
- Staff training in data protection, including a module on good research practices.

USERS



SERVICES



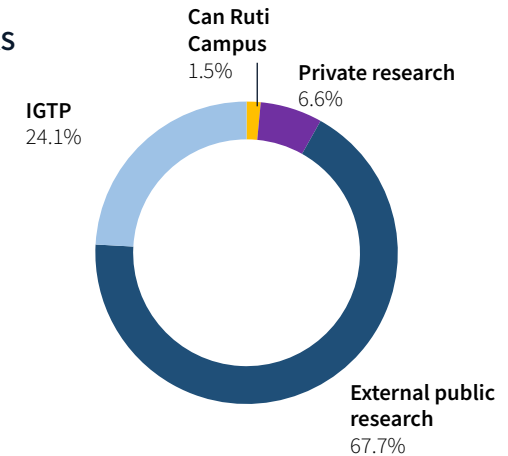
BIostatISTICS



7
MEMBERS

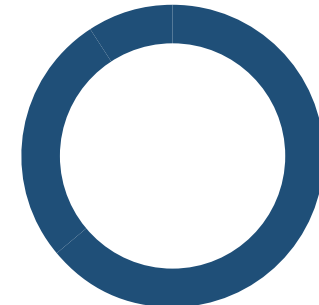
- Participation in 63 research projects, 90% of which were led by researchers from the IGTP campus.
- Co-authorship of 14 peer-reviewed scientific articles, including one as first or corresponding author.
- Organisation of an 18-hour course on applied biostatistics in R and a 12-hour course on REDCap at IGTP.
- Contribution to seven oral or poster presentations at national and international conferences, including the 2025 meetings of Sociedad Española de Bioestadística (SEB) and the International Society for Clinical Biostatistics (ISCB 2025).
- Participation in five scientific sessions and seminars organised by IGTP and the GRBIO research group in biostatistics, including co-leadership in the organisation of the Susie Bayarri Biostatistics Methodology Seminars at IGTP.

USERS



SERVICES

Data analysis
100%



CRYOBIOLOGY

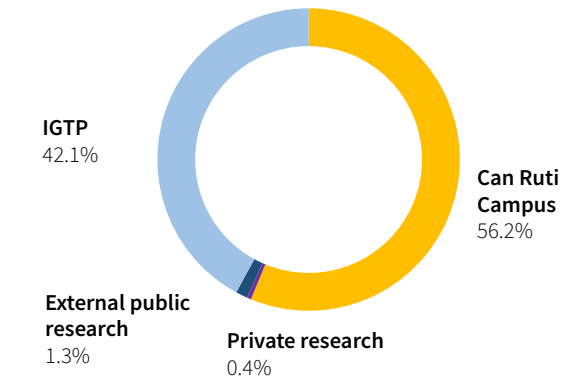


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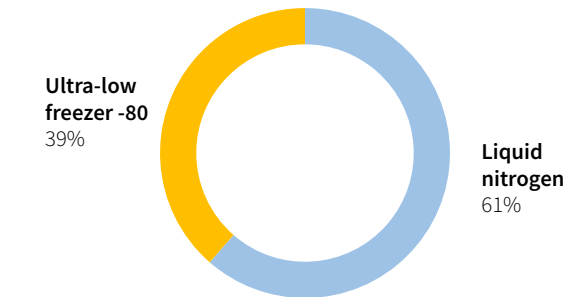
MEMBER

- Continued improvement of equipment and facilities to enhance user support.
- Replacement of up to five ultra-low temperature freezers with more energy-efficient units with greater storage capacity, despite space limitations.
- Promotion of the acquisition of a new liquid nitrogen tank with capacity for 80,000 samples to consolidate the Josep Carreras Leukaemia Research Institute collections.

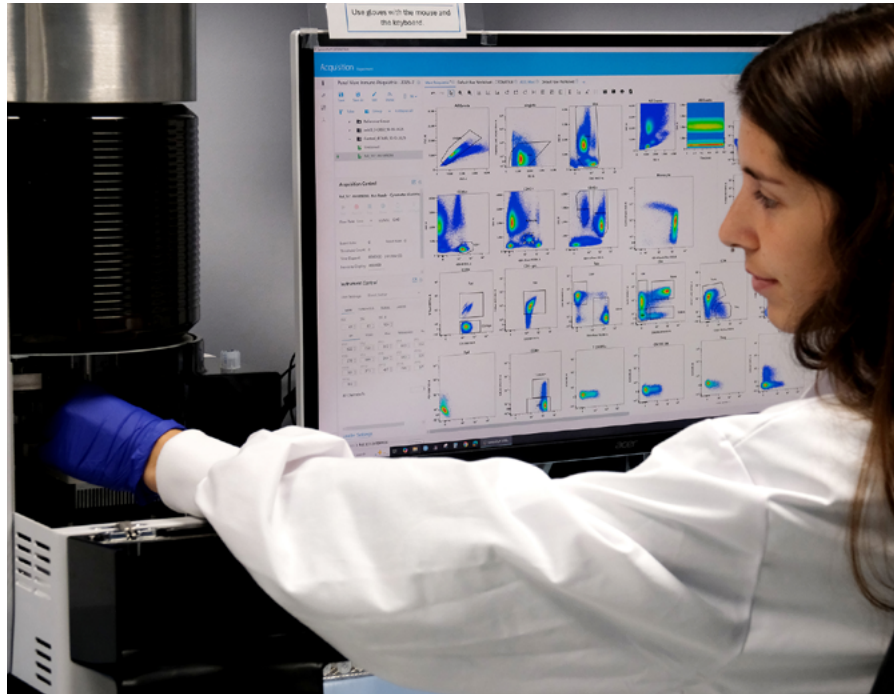
USERS



SERVICES



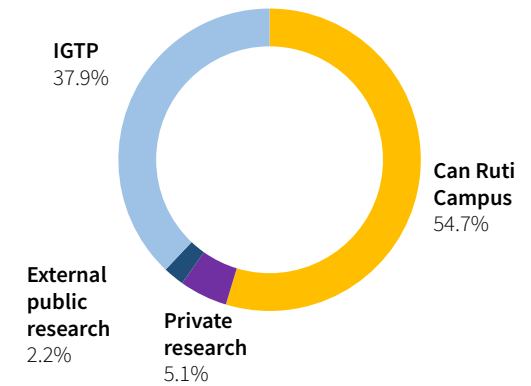
CYTOMETRY



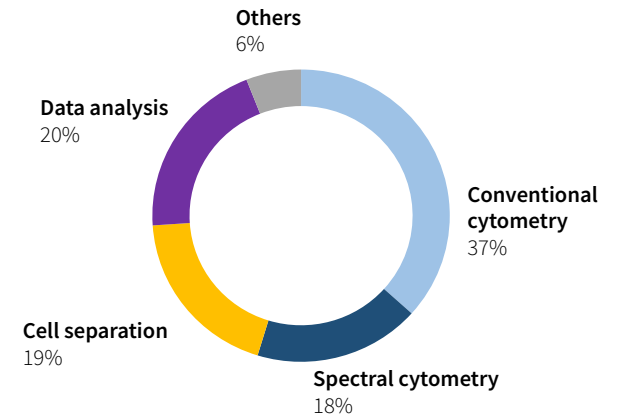
4
MEMBERS

- Signing of an agreement for the [creation of the IGTP-IJC Joint Cytometry Unit](#), with expansion in both staff and equipment.
- Award of a PTA grant to support technical personnel.
- Award of an AES grant for a bioinformatician position, shared with the Translational Genomics platform.
- Agreement with BD for the provision of new equipment at IGTP (Symphony A1).

USERS



SERVICES

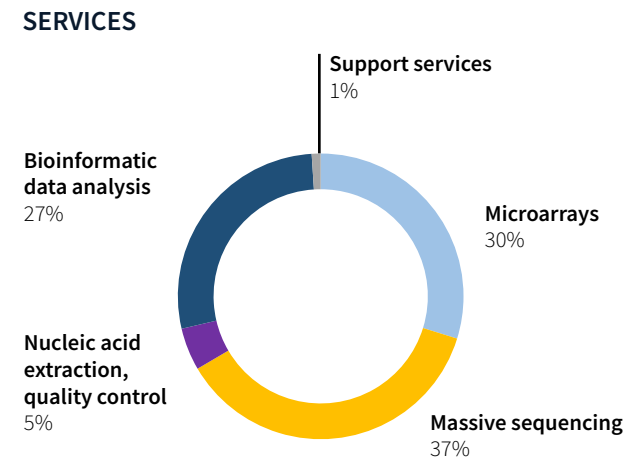
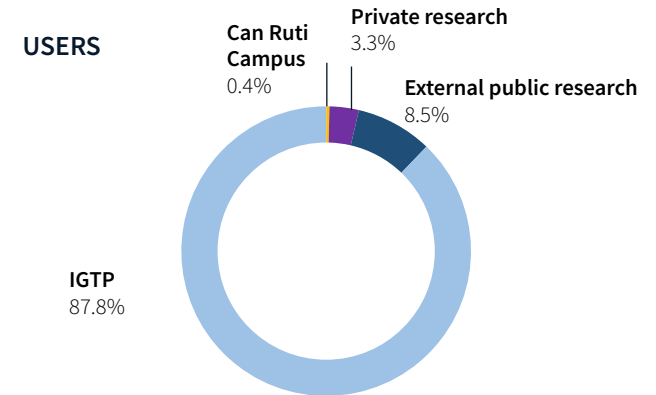


HIGH CONTENT GENOMICS AND BIOINFORMATICS



4
MEMBERS

- Participation in large-scale epigenomic profiling of individuals from the GCAT cohort, in preparation for EWAS studies.
- Co-authorship of four peer-reviewed articles in *World Journal of Gastroenterology*, *Cell Reports Medicine*, *Obesity*, and *Thyroid*.
- Optimisation of laboratory procedures and analytical methods, including automated total RNA-seq library preparation for FFPE samples, and development of bioinformatic pipelines for single-cell RNA-seq, metagenomics, small RNA-seq, RNA-seq NGS data, methylation arrays, and integrative functional analyses.
- Application of data science, machine learning and AI techniques to extract and analyse electronic health records, including bilingual (Catalan and Spanish) free-text emergency room reports, with adaptation to multilingual datasets.



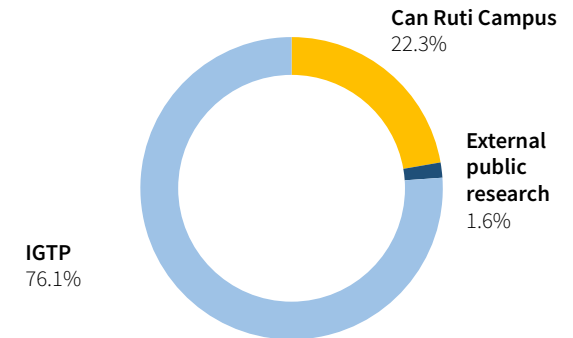
HIGH PERFORMANCE COMPUTING



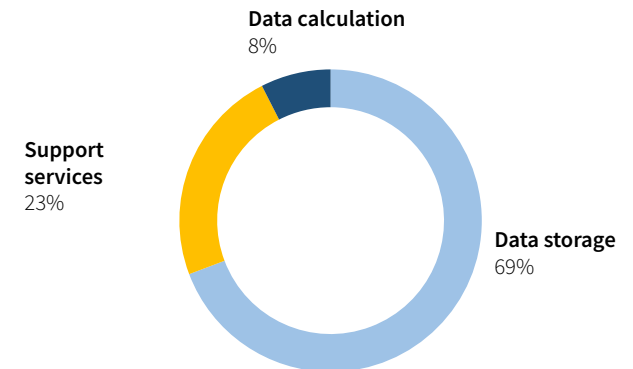
1
MEMBER

- Consolidation and optimisation of the HPC infrastructure, with increased usage by research groups and significant improvements in system stability and efficiency. Resource management mechanisms (CPU/GPU) were optimised, and enhanced monitoring and diagnostic systems were implemented, reducing incidents and downtime.
- Provision of advanced support for data-intensive research projects, including genomics, bioinformatics and imaging, with extensive use of high-performance GPUs. Close collaboration with research groups enabled the optimisation and adaptation of analytical pipelines to the HPC environment.
- Promotion of efficient resource usage and best practices, including optimisation of parallelisation strategies and prioritisation of cluster use over workstations, helping to minimise bottlenecks and maximise overall platform performance.

USERS



SERVICES



MICROSCOPY

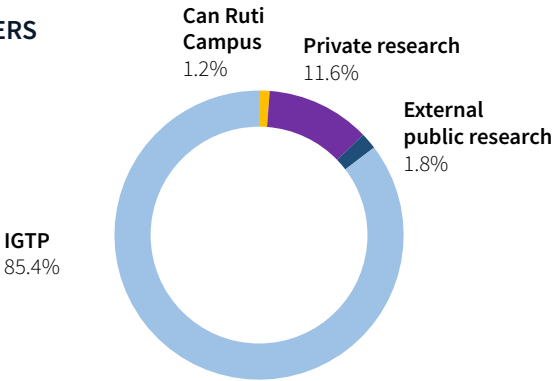


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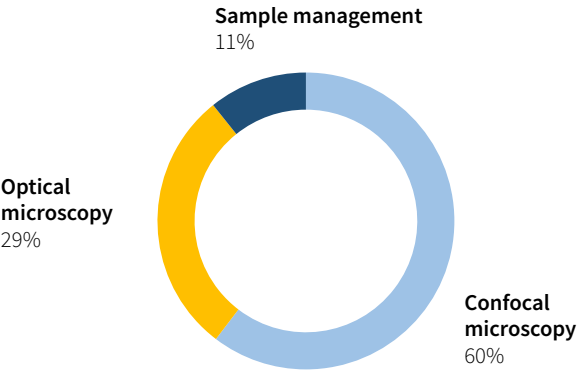
MEMBER

- Launch of a microscopy image post-processing course (October), with a second edition already confirmed due to high demand.
- Participation in well-received public engagement activities, including Can Ruti Open Days (as part of Science Week) and visits organised by the Fundació La Marató de 3Cat.
- Development of new training and engagement resources, including microscopy tutorial materials published on YouTube, a regular newsletter, and the continuation of the Image of the Month and Year competitions to engage platform users.

USERS



SERVICES



PROTEOMICS AND METABOLOMICS

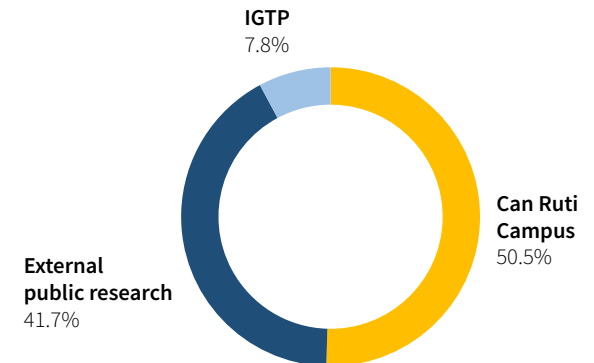


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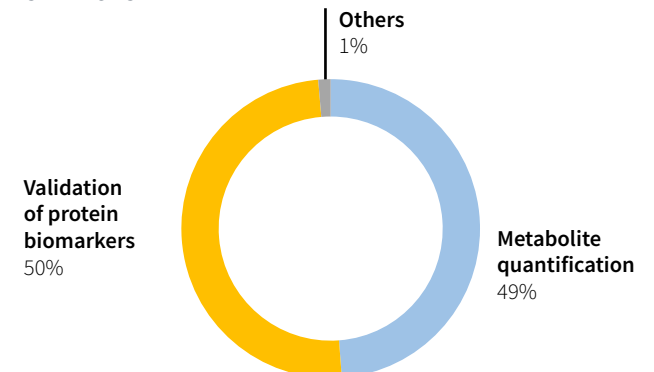
MEMBERS

- Development and optimisation of a new methodology based on sugar analysis in urine samples using LC-MS/MS, enabling the initiation of upcoming collaborations with three research groups at VHIR.
- Expansion of routine service activities, including ongoing work with HUGTiP to incorporate two new methodologies that will broaden the current service portfolio, with an expected increase in the number of analysed samples and overall platform revenue.

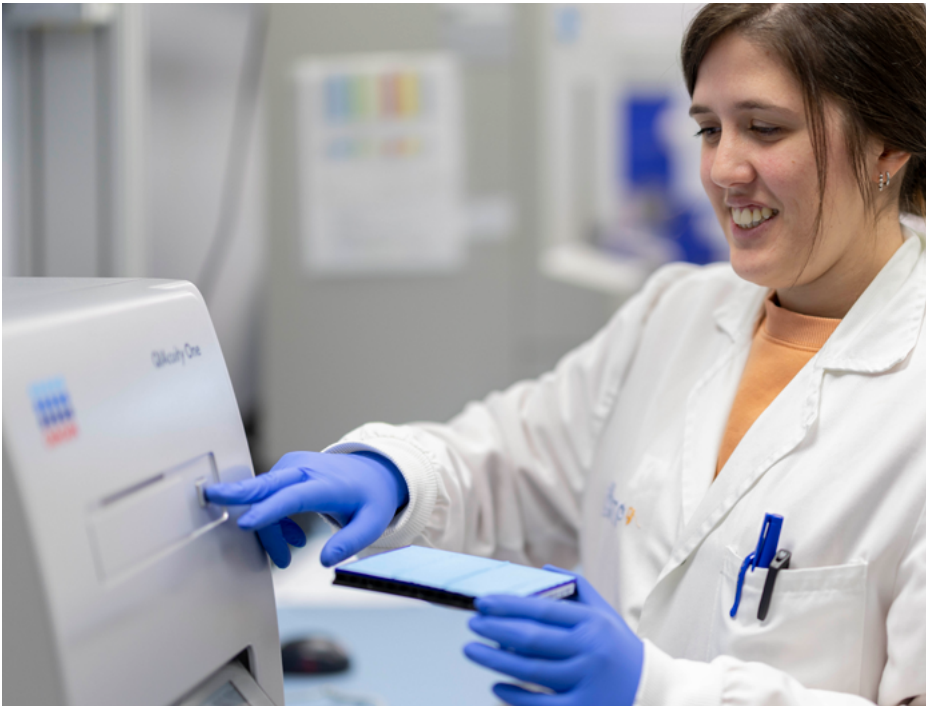
USERS



SERVICES



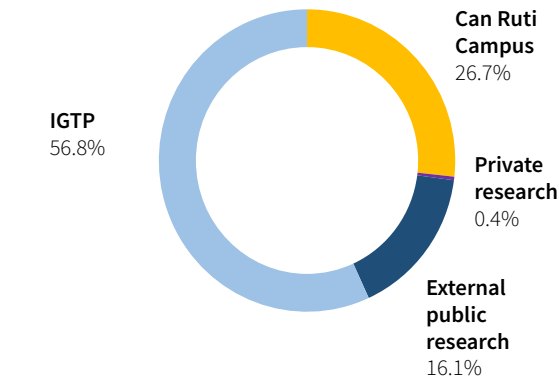
TRANSLATIONAL GENOMICS



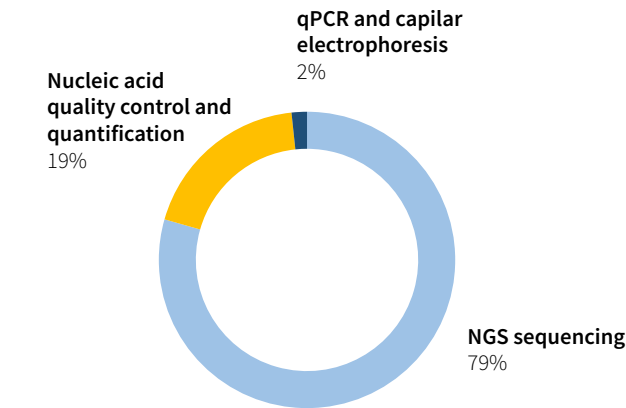
3
MEMBERS

- Award of an AES grant for a bioinformatician position, shared with the Cytometry platform.
- Agreement with BD for the provision of new equipment at IGTP (Rhapsody).
- Co-authorship in a peer-reviewed publication through the contribution of Maria del Pilar Armengol (Bisbal F et al., *JACC Clinical Electrophysiology*, 2025).

USERS



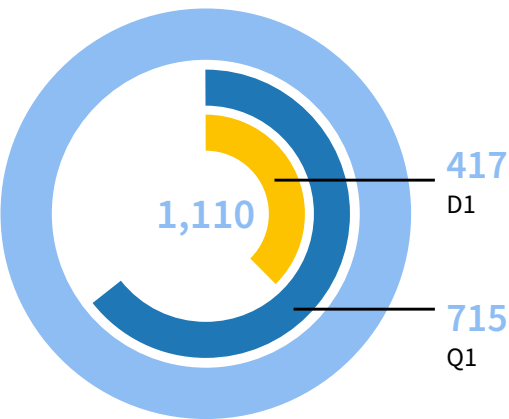
SERVICES



Scientific publications

2025 PUBLICATIONS

Articles, reviews, editorial material and letters



7.52
AVERAGE IMPACT FACTOR

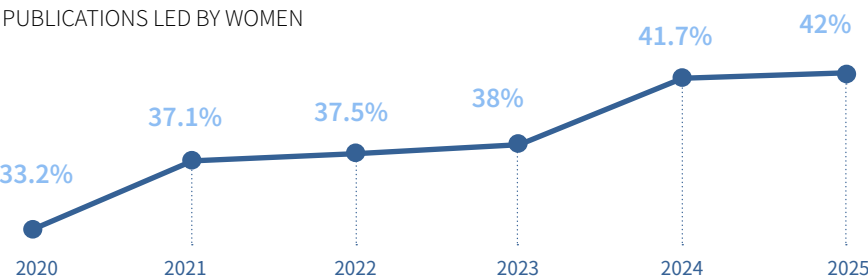
8,350
TOTAL IMPACT FACTOR

67.30%
OPEN ACCESS

LEADERSHIP

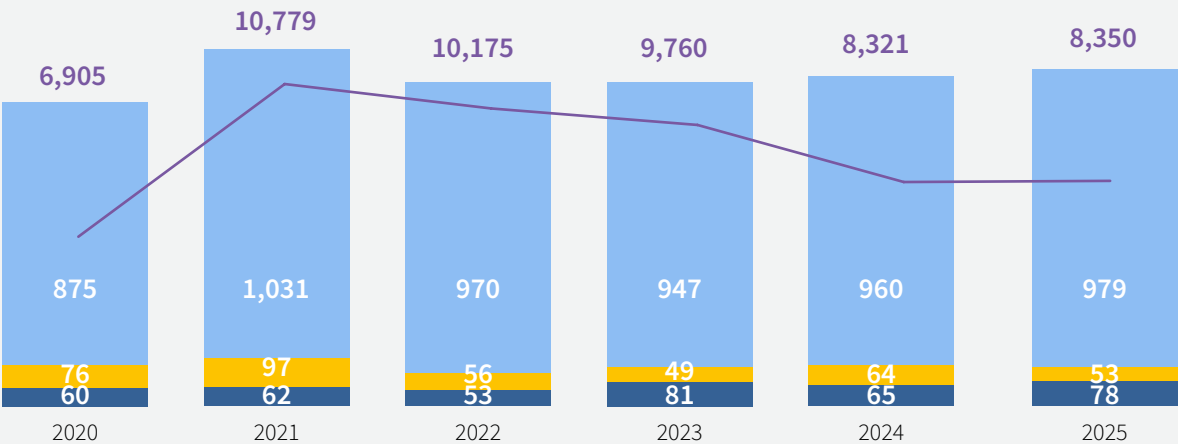
300 led publications in 2025

Articles and reviews



EVOLUTION (2020-2025)

- Total Impact Factor
- Articles and reviews
- Letters
- Editorial material



Innovation and technology transfer

Innovation is a core pillar of IGTP's strategy, guiding efforts to advance technology transfer and embed an innovation-driven mindset across its research community.

In 2025, IGTP consolidated its innovation ecosystem through the second year of the [Innomed program](#) and the GrowInn project incubator, including a new edition of the [Innomed Awards](#). The institute also strengthened its corporate engagement activities, organising visits to the facilities of [Leitat](#) and [Werfen](#) with Innomed partners.

The year was marked by [strong performance in securing funding](#) for innovation-driven projects, as well as by the consolidation of strategic collaborations with partners such as [Digital Health Hub](#), [Qualud](#), [Boehringer Ingelheim](#) and [Fisabio](#). IGTP also maintained an active presence at major international events, including [Mobile World Congress \(MWC\)](#) and [BIOSPAIN](#).

A key milestone was the achievement of [ISO 56001 certification in Innovation Management](#), reinforcing IGTP's commitment to structured and high-quality innovation processes.

Check innovation-oriented news on the IGTP website



Innovation pipeline and intellectual property

During 2025, the institute generated a total of **17 innovations** and raised **€2,945,001 in funding for innovation activities**. The innovation pipeline continued to expand, with:

18

NEW IDEAS

68

ACTIVE PROJECTS

35

ACTIVE PATENT
FAMILIES

3

PATENT
APPLICATIONS

5

PATENTS GRANTED

19

LICENCE
AGREEMENTS

Since its launch (2024–2025), the **Innomed program** also contributed to strengthening innovation **capacity** across the institute and the Can Ruti Campus, with the following results:

30

INCUBATED
PROJECTS

>100

PARTICIPANTS

14

TRAINING SESSIONS
WITH EXPERTS

2

DEMO DAYS

€50K

AWARDS GRANTED

3

PATENTS
GENERATED



Spin-offs

IGTP currently supports **nine active spin-offs, which translate scientific knowledge into innovative products and services.** These companies play a key role in transferring research results to the healthcare system and the market, contributing to the institute's social and economic impact.

These spin-offs presented their work at several conferences throughout the year, with a particularly strong presence at [Mobile World Congress](#) and [BIOSPAIN](#).



Founded in 2013



Founded in 2014



Founded in 2014



Founded in 2017



Founded in 2018



timeisbrain

Founded in 2020



Founded in 2022



Founded in 2025



Founded in 2025



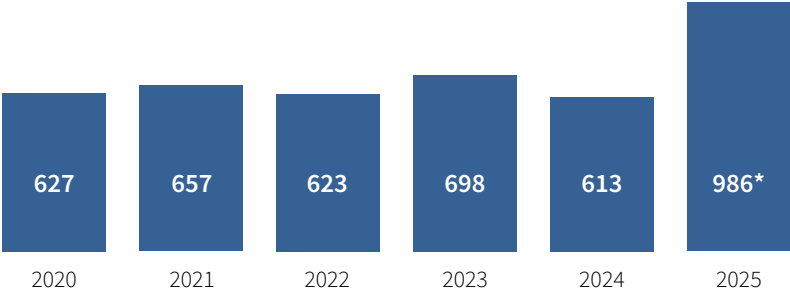
Clinical trials



In 2025, the **Germans Trias i Pujol Research Institute and University Hospital established the Clinical Research Support Area (ASIC)**, a joint structure created to strengthen and streamline the development of clinical research across the Can Ruti Campus. The area was set up to provide integrated support for both academic and industry-sponsored studies, including clinical trials and observational studies, covering all stages from study conception and regulatory preparation to execution, monitoring and quality management.

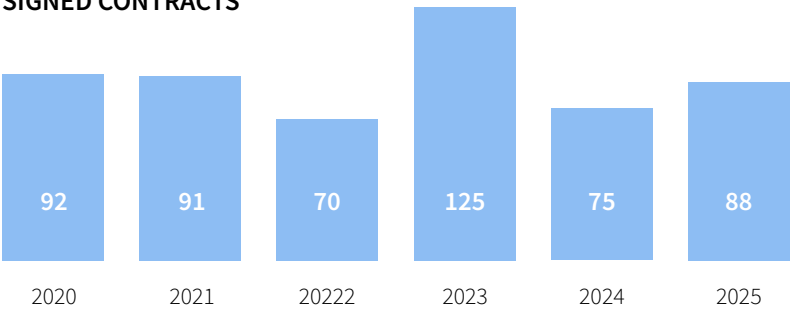
The ASIC brings together specialised platforms that provide scientific, methodological, logistical, regulatory, legal, financial and operational support to investigators and sponsors. Through this coordinated structure, the area facilitates study start-up processes, contract negotiation, data management, monitoring, pharmacovigilance and investigational drug management, while ensuring compliance with Good Clinical Practice (GCP), applicable regulations and participant safety standards. The creation of ASIC represents a significant step forward in consolidating a more efficient, coordinated and high-quality clinical research ecosystem at IGTP.

ACTIVE CLINICAL STUDIES



**This increase is due to a change in the criteria used to define active studies, following the Ministry's recommendations. Studies are now considered active from the moment the agreement is signed, whereas previously only those that had started invoicing for trial/study-related activity were counted.*

SIGNED CONTRACTS



The active clinical studies account for those of HUGTiP and ICO.

Signed contracts are in reference to HUGTiP.



Strategic projects

Strategic projects

COMPARATIVE MEDICINE AND BIOIMAGE CENTRE OF CATALONIA (CMCiB)

The CMCiB is IGTP's translational medicine centre, affiliated with the Germans Trias i Pujol University Hospital on the Can Ruti Campus in Badalona. This state-of-the-art biomedical facility has been designed and equipped to support a wide range of research and technological development projects, while adhering to high standards of sustainability and the principles of the 3Rs (Replacement, Reduction and Refinement).



GCAT|GENOMES FOR LIFE

GCAT is a population-based, multi-purpose cohort aimed at identifying genomic, epigenomic and environmental factors involved in the development of complex chronic diseases. The research team contributes to national and European consortia across a range of areas, including diabetes, stroke, long COVID, the urban exposome and occupational health.



Strategic projects

COMPARATIVE MEDICINE AND BIOIMAGE CENTRE OF CATALONIA (CMCib)

2025 in numbers

36

Approved animal model procedures by the Ethics Committee

80

Preclinical projects with animal models

> 20

Accumulated GLP studies

> 600

Registered users

> 2,000

National and international surgeons trained

376

Visitors

13

New collaborations

3

New success stories

1,430,609

DICOM files

6

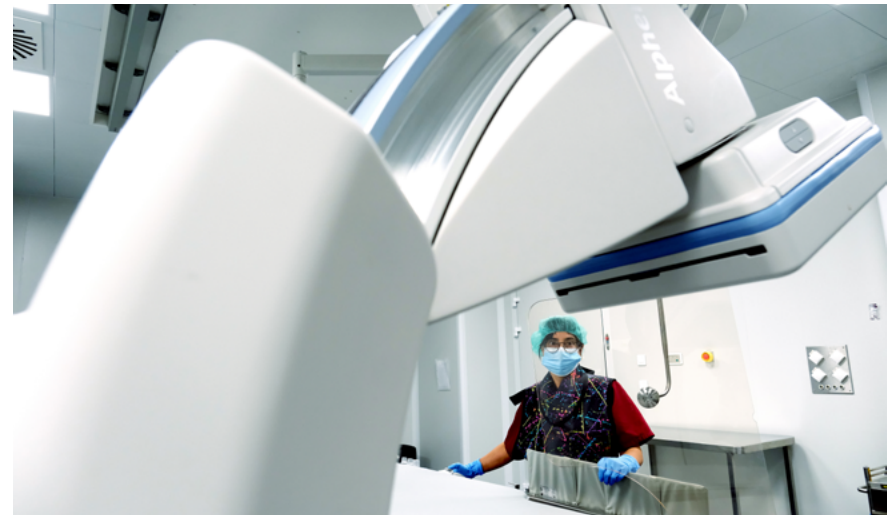
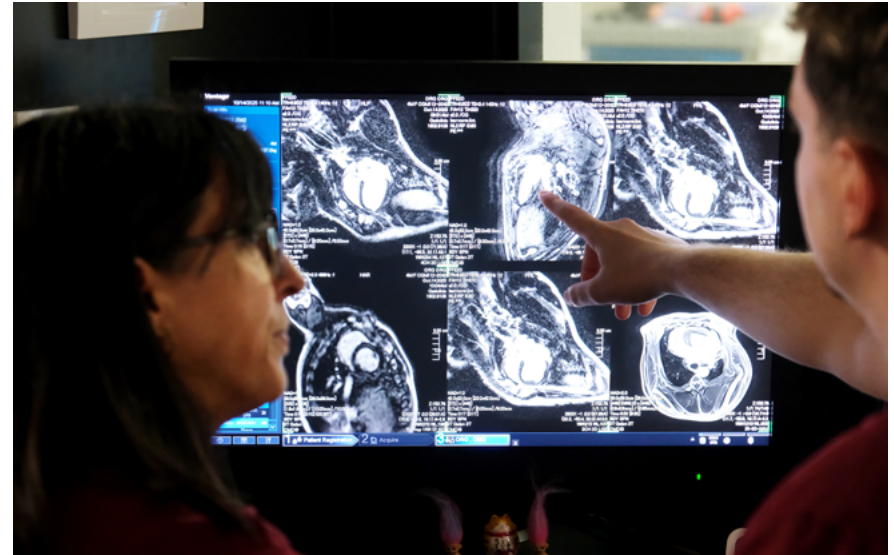
Showcases at national & international conferences

7

MRI clinical studies

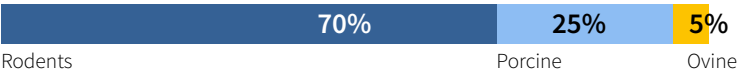
27

Participants in clinical MRI studies

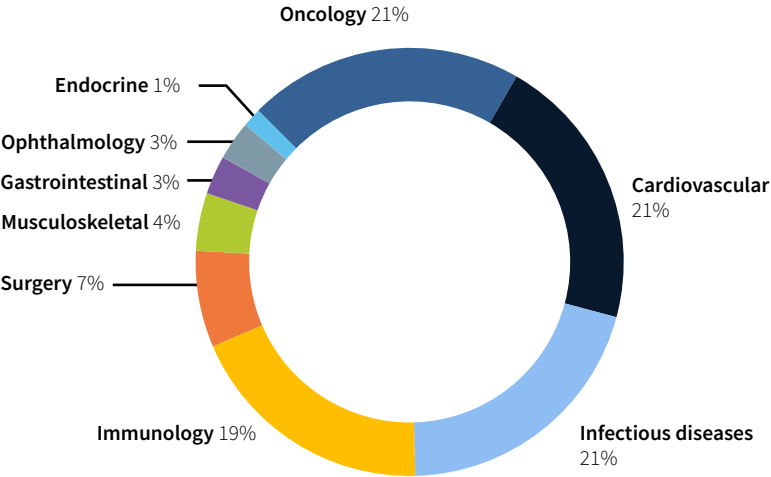


78 ACTIVE TRANSLATIONAL STUDIES

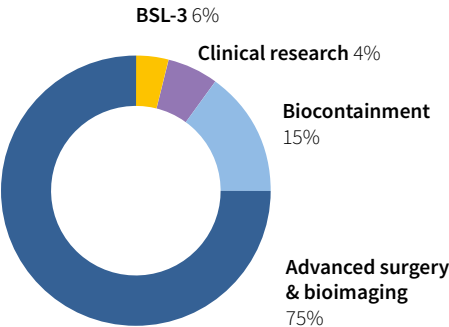
MODEL ORGANISM



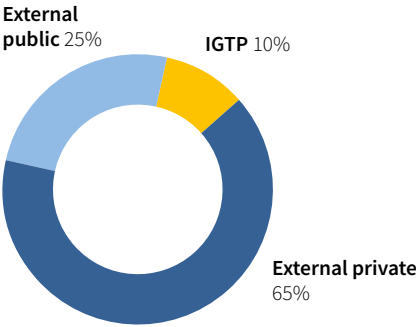
RESEARCH AREA



REVENUES PER ACTIVITY



REVENUE STREAMS



Strategic projects / CMCiB

Main highlights

- Expansion of cage capacity and bioimaging equipment in the biocontainment facility.
- Increased activity involving humanised and GMO mouse models, alongside expanded in vitro and in vivo infectious disease research.
- Growth in activities related to advanced surgical training and research, including the development of new models.
- [First IGTP medical device validation study conducted under GLP standards.](#)
- Full operation of the Computational Anatomy Unit services.
- [Framework agreement signed between Fisabio and IGTP](#) to lead pioneering studies using artificial intelligence to improve medical diagnostics.
- Institutional visits from the [Catalan Minister for Research and Universities, Dr Núria Montserrat](#), the [mayor of Badalona, Xavier García Albiol](#), and representatives from the CaixaResearch Institute and ACCIÓ.
- Launch of a [LinkedIn profile](#).
- Celebration of the centre's 6th anniversary.

Accreditations

- New accreditation to conduct GMO biosafety level 3 activities for SARS-COV-2 and monkeypox (BSL-3 facility).
- Third GLP Inspection by competent bodies.



3R program

7

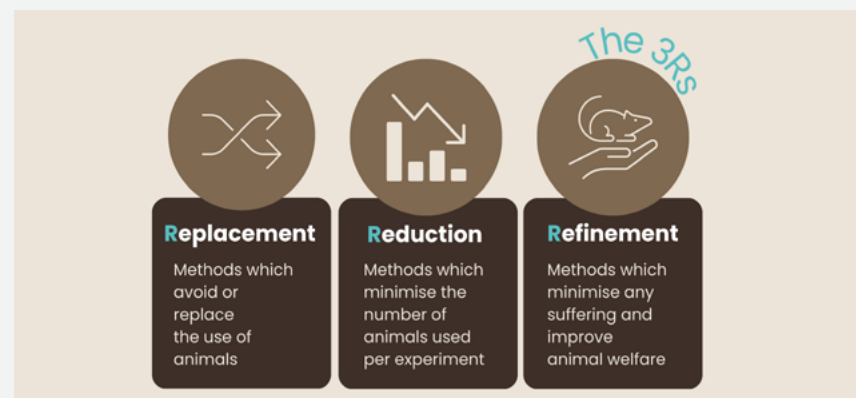
Seminars on the 3Rs

14

Researchers trained in
Laboratory Animal Science

165

Certificates



GCAT|GENOMES FOR LIFE



Strategic project leader: Rafael de Cid Ibeas



RESEARCH LINES

- Multimorbidity
- Environmental health
- COVID-19
- Digital ecosystems for health research
- Medical genomics and precision medicine for Type 2 Diabetes

THE PROJECT IN NUMBERS

20,000

Volunteers

1.9M

Medical data points
accumulated

320,000

Biological samples

1,467

Proteins analysed

12M

Genetic variants

70

Publications

12

Publications in 2025

34

New projects in 2025

Featured publications

Kogevinas M, Karachaliou M, Espinosa A, Iraola-Guzmán S, Castaño-Vinyals G, Delgado-Ortiz L, Farré X, Blay N, Pearce N, Bosch de Basea M, Nogués EA, Dobaño C, Moncunill G, de Cid R, Garcia-Aymerich J. **Risk, determinants, and persistence of long-COVID in a population-based cohort study in Catalonia.** *BMC Med.* 2025 Mar 14;23(1):140. DOI: [10.1186/s12916-025-03974-7](https://doi.org/10.1186/s12916-025-03974-7).

Lammi V, Nakanishi T, Jones SE, Andrews SJ, Karjalainen J, Cortés B, O'Brien HE, Ochoa-Guzman A, Fulton-Howard BE, Broberg M, Haapaniemi HH, Kanai M, Pirinen M, Schmidt A, Mitchell RE, Mousas A, Mangino M, Huerta-Chagoya A, Sinnott-Armstrong N, Cirulli ET, Vaudel M, Kwong ASF, Maiti AK, Marttila MM, Posner DC, Rodriguez AA, Batini C, Minnai F, Dearman AR, Warmerdam CAR, Sequeros CB, Winkler TW, Jordan DM, Reščenko R, Miano L, Lane JM, Chung RK, Guillen-Guio B, Leavy OC, Carvajal-Silva L, Aguilar-Valdés K, Frangione E, Guare L, Vergasova E, Marouli E, Striano P, Zainulabid UA, Kumar A, Ahmad HF, Edahiro R, Azekawa S; Long COVID Host Genetics Initiative; FinnGen; VA Million Veteran Program; MexGen-COVID Initiative; DBDS Genomic Consortium; GEN-COVID Multicenter Study; PHOSP-COVID Collaborative Group; GENCOV Study; Estonian Biobank Research Team; Luoh SW, Erikstrup C, Pedersen OBV, Lerner-Ellis J, Colombo A, Grzymski JJ, Ishii M, Okada Y, Beckmann ND, Kumari M, Wagner R, Heid IM, John C, Short PJ, Magnus P, Ansone L, Valenti LVC, Lee SA, Wain LV, Verdugo RA, Banasik K, Geller F, Franke LH, Rakitko A, Duncan EL, Renieri A, Tsilidis KK, de Cid R, Niavarani A, Abner E, Tusié-Luna T, Verma SS, Smith GD, Timpson NJ, Madduri RK, Cho K, Daly MJ, Ganna A, Schulte EC, Richards JB, Ludwig KU, Marks-Hultström M, Zeberg H, Ollila HM. **Genome-wide association study of long COVID.** *Nat Genet.* 2025 Jun;57(6):1402-1417. DOI: [10.1038/s41588-025-02100-w](https://doi.org/10.1038/s41588-025-02100-w).

Farré X, Blay N, Iraola-Guzmán S, Fernández-Jiménez F, Alzate-Piñol S, Lluçia-Carol L, Espinosa A, Castaño-Vinyals G, Dobaño C, Moncunill G, Karachaliou M, Garcia-Aymerich J, Kogevinas M, Barceló C, Cadenas I, de Cid R. **VEGFA sex-specific signature is associated to long COVID symptom persistence.** *BMC Med.* 2025 Oct 10;23(1):552. DOI: [10.1186/s12916-025-04402-6](https://doi.org/10.1186/s12916-025-04402-6).

Blay N, Farré X, Garcia-Aymerich J, Castaño-Vinyals G, Kogevinas M, de Cid R. **Pre-pandemic disease trajectories and genetic insights into long COVID susceptibility.** *BMC Med.* 2025 Oct 27;23(1):590. DOI: [10.1186/s12916-025-04427-x](https://doi.org/10.1186/s12916-025-04427-x).



Highlights

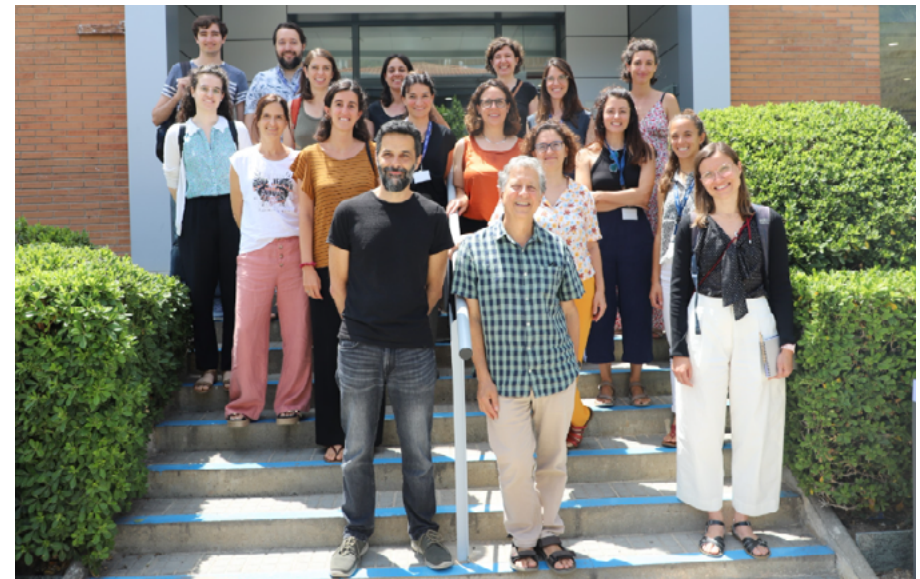
During 2025, the GCAT|Genomes for Life project further consolidated its role as a strategic platform for research in planetary health and precision medicine, integrating exposome, genomics and population data.

GCAT strengthened its work on the exposome within the EXPANSE project, advancing the understanding of how urban environmental factors -such as pollution, urban density and lack of green spaces- contribute to the risk of diseases such as asthma. The results, published in *The Lancet Regional Health - Europe*, position the exposome as a key tool for the development of planetary health policies and for addressing risks associated with environmental and climate change.

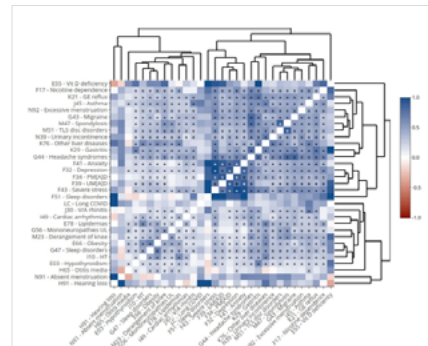
In addition, the impact of environmental exposures on the epigenome was further demonstrated. A study published in *EBioMedicine* showed how environmental factors can modify DNA methylation, leaving a cumulative biological imprint over the life course and reinforcing the link between environmental exposure and disease susceptibility.

In the field of long COVID, the comprehensive follow-up of the GCAT sub-cohort COVICAT (COVID Cohort of Catalonia), developed in collaboration with ISGlobal, has enabled significant advances in understanding the disease. Studies published in *BMC Medicine* identified genetic factors, previous disease trajectories and risk profiles that improve the prediction of susceptibility to long COVID, highlighting the importance of life-course health trajectories in disease development.

At the molecular level, mechanisms associated with persistent symptoms were also characterised, including alterations in the VEGFA protein and processes related to vascular dysfunction. These findings point to a clear biological basis for long COVID and reinforce the role of biological and hormonal factors.



Overall, 2025 was a key year for GCAT, consolidating an integrated research approach that combines exposome, epigenomics and population genetics to better understand emerging risks and identify vulnerable populations.



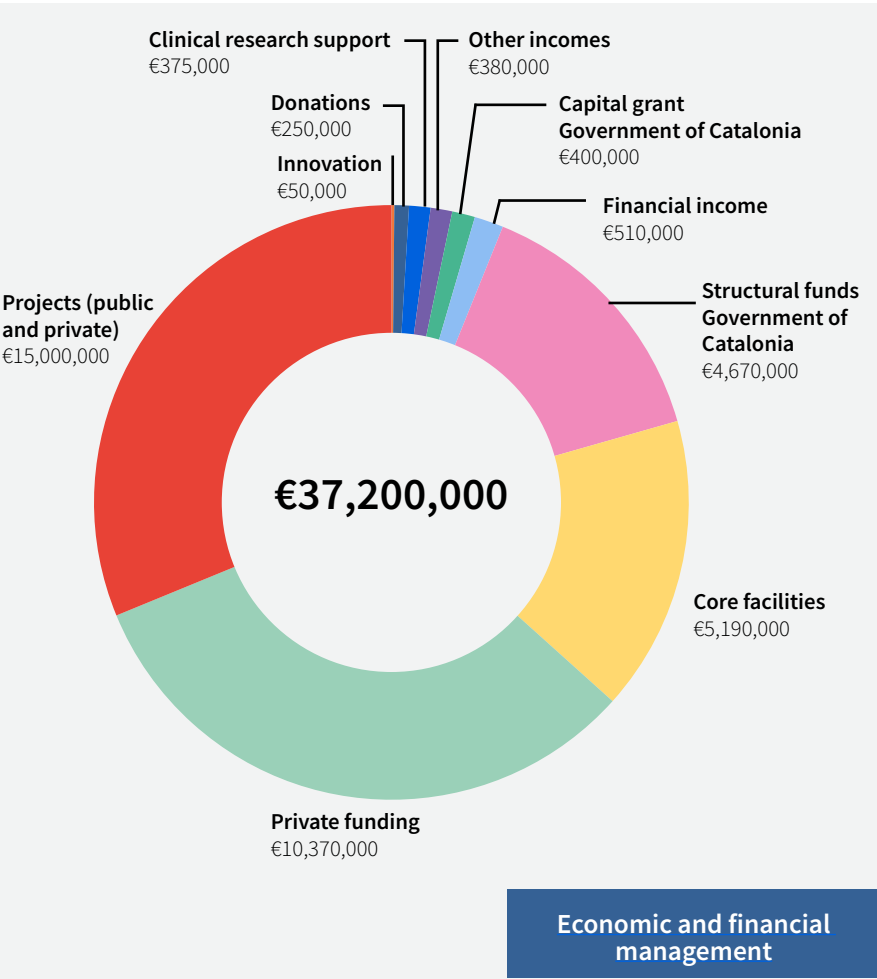
- [Symptoms of long-COVID can last up to two years after infection with COVID-19](#)
- [FOXP4 gene identified in the first large-scale genetic study on Long COVID with participation of the GCAT](#)
- [A new GCAT study improves the population representativeness of the cohort to advance translational research in public health](#)
- [A new European study with the participation of GCAT reveals that the combination of urban environmental factors increases asthma risk](#)
- [A vascular mechanism may explain the persistence of COVID-19 symptoms and their greater impact, especially in women](#)
- [Study identifies that the sequence of previous diseases may help predict the risk of long COVID](#)
- [IGTP drives collaborative science in health after three years of cooperation in biotechnology](#)



Funding

Funding

Sources of funding



Competitive projects

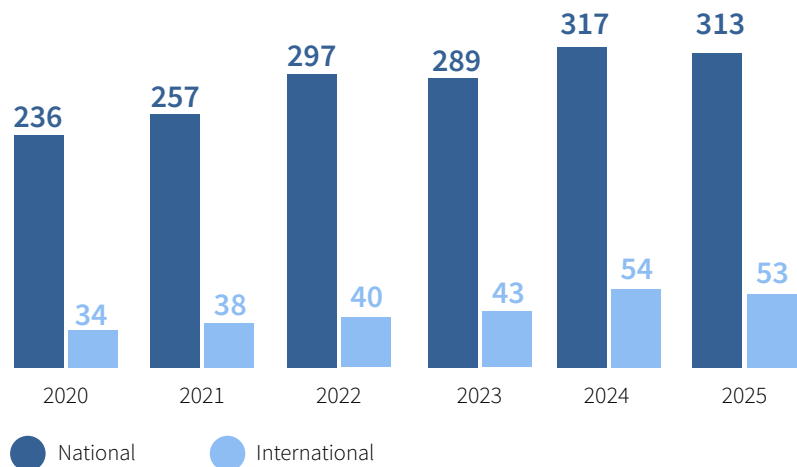
Throughout 2025, **IGTP continued to promote competitive national and international projects across a broad range of biomedical and health-related fields.** These initiatives reflect the institute's commitment to translational research and innovation, with the aim of improving prevention, diagnosis, treatment and quality of care.

As part of the Can Ruti Campus and as an Instituto de Investigación Sanitaria (IIS) accredited by the Instituto de Salud Carlos III (ISCIII), IGTP works closely with healthcare and research institutions to foster collaborative research and strengthen the scientific strategy of the Campus.

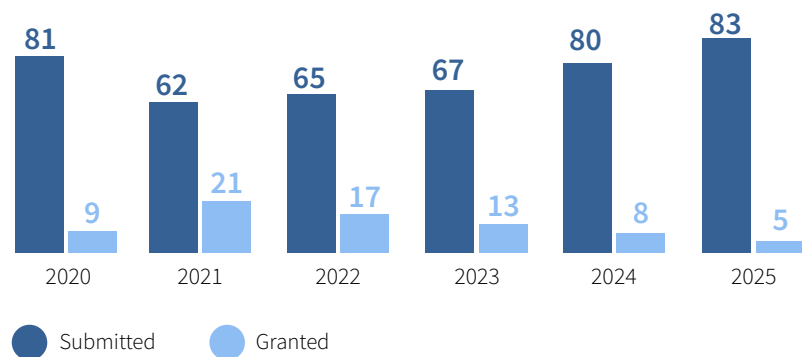
Check project-oriented news
on the IGTP website



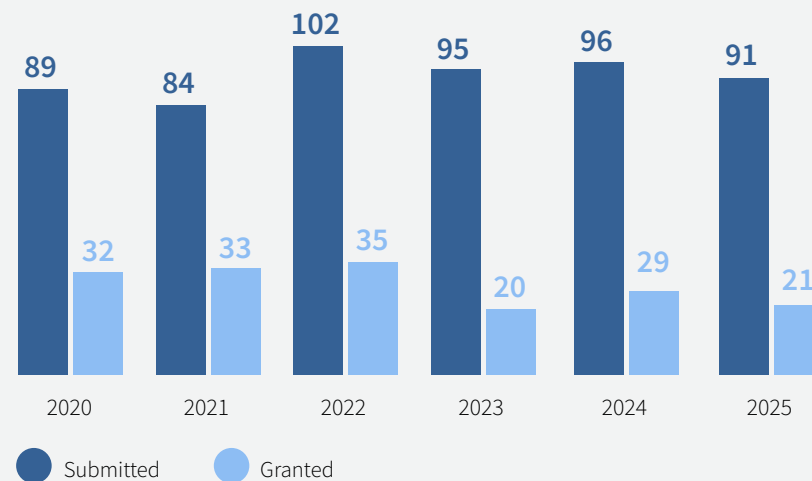
ACTIVE PROJECTS 2020-2025



INTERNATIONALLY FUNDED PROJECTS 2020-2025



ISCIII FUNDED PROJECTS 2020-2025



GRANTED PROJECTS



National projects

283

Submitted proposals

+€35.5M

Requested funding

€7.89M

Awarded funding
(€3.10M as IIS IGTP)

HIGHLIGHTS



La Marató de 3CAT call on respiratory diseases

6

Projects granted

16%

Success rate

>1M

Funding awarded

MICIU call “Colaboración público-privada”

8

Projects granted

66%

Success rate

>€2.5M

Funding awarded

International projects

83

Submitted proposals

+€10M

Requested funding

€723,000

Awarded funding

HIGHLIGHTS

Horizon Europe Program (HEU)

60

Proposals

15%

Increase over 2024

15

Coordinated proposals

TB Spectrum: A step forward for unraveling the immune mechanisms and tools for tuberculosis spectrum management

Coordinated by [Irene Latorre](#)

9

Countries

+€790,000



GENDER-HehS: Enhancing Gender Perspectives in Higher Education for Healthcare Students

Coordinated by [Ariadna Huertas](#)

5

Countries

€ 400,000



Research networks



Researchers across IIS IGTP are actively involved in collaborative research networks that foster scientific exchange, strengthen multidisciplinary partnerships and support the advancement of translational biomedical research.

21

**SGR Groups accredited
by the Government of
Catalonia**

5

**Groups within Redes de
Investigación Cooperativa
Orientadas a Resultados en
Salud (RICORS)**

4

**Groups within Centros de
Investigación Biomédica en
Red (CIBER)**

IGTP also participates in strategic national and European research infrastructures and collaborative platforms, such as:

**Spanish Clinical Research
Network (SCReN)**

**European Commission
ERIC (EATRIS)**

**Consorcio Estatal en Red para el
desarrollo de Medicamentos de
Terapias Avanzadas (CERTERA)**

**Catalonia Advanced Therapies
Network (ATMP Catalonia)**

Fundraising

AMICS DE CAN RUTI

Amics de Can Ruti is a fundraising program aimed at engaging society in supporting research and healthcare activities across the Can Ruti Campus.

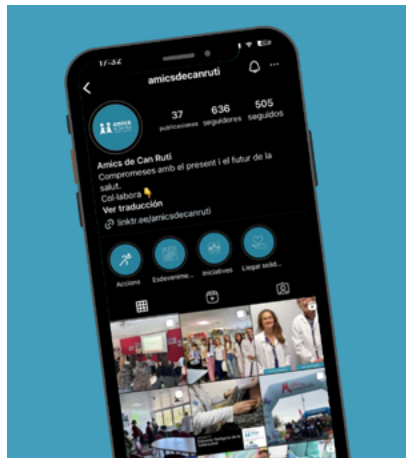
1,113

Amics de Can Ruti members

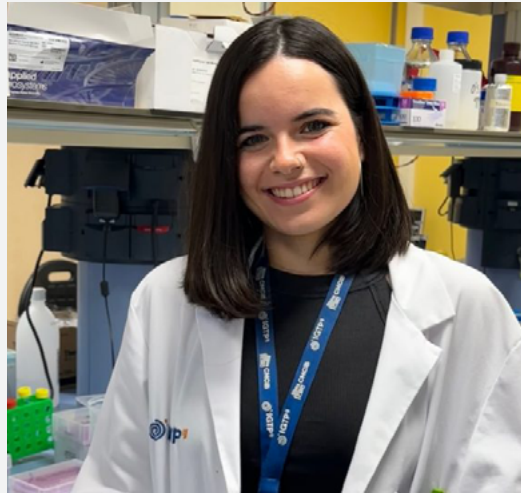
300

New members through the [7th face-to-face campaign](#)

FOLLOW US ON INSTAGRAM



Highlights



Find more news on their website

Launch of the first edition of the Amics de Can Ruti Talent Biomed Fellowships

The [Talent Biomed program](#), developed in collaboration with the Germans Trias i Pujol Research Institute and Hospital, and sponsored by Conservas Dani, supports the training of a new generation of researchers, reinforcing the long-term impact of philanthropic contributions.

New partnership agreements with corporate supporters and sponsors

[Joint initiative with Club Joventut Badalona](#), bringing together over 1,000 campus professionals at a basketball game to promote research and healthcare activities

Participation in the [Sant Jordi Fair in Badalona](#)

[Outreach campaign in collaboration with Badacentre](#)

Ongoing communication and member engagement activities

Visits from donors, associations and companies

Organisation of outreach and dissemination events



Training and events

Training and events

Doctoral theses

43

Theses read in the academic year 2024-2025

Internal training

40

Training activities

+160

Participants

Scientific events

CARE	Annual Meeting	1
	Translational Seminars	18
	Oncology Courses	4
	Tumour Heterogeneity and Liquid Biopsy Open Meetings	3
	Node Sessions	4
CORE	Workshop	2
	Susie Bayarri Sessions	8
	STI Seminars	4
	Annual Meeting	1
Institutional	IGTP Group Leaders Meeting	1
	Annual Symposium	1
Open science	Women for Equity Symposium	1
Early career	PhD Day	1
Scientific training	Bioinformatics Talks	14
	CMCiB 3Rs Training	6
	Coffee Talks	32

101

Events organised by IGTP

4,170

People attending

69%

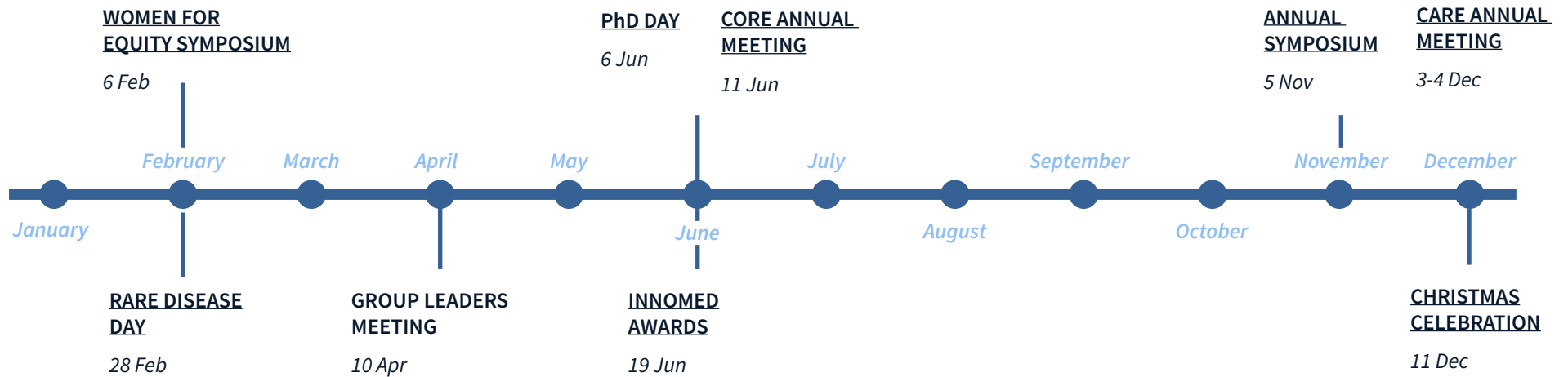
Women attendees

66%

Women organisers and speakers

Highlighted events

Throughout 2025, IGTP promoted a wide range of scientific initiatives in collaboration with institutions across the Can Ruti Campus, reinforcing its commitment to translational research, cross-disciplinary interaction and research training.



Institutional visits

In 2025, IGTP welcomed representatives from local government, the Government of Catalonia, academia and strategic institutions, reinforcing dialogue around research, innovation and collaboration within the Can Ruti Campus.

MAYOR OF BADALONA VISITS THE CMCiB

On 16 January, Xavier Garcia Albiol, Mayor of Badalona, visited the CMCiB, a unique scientific infrastructure of IGTP. The visit highlighted the support of local institutions for research and innovation in Badalona.

VISIT OF THE CATALAN MINISTER FOR RESEARCH AND UNIVERSITIES

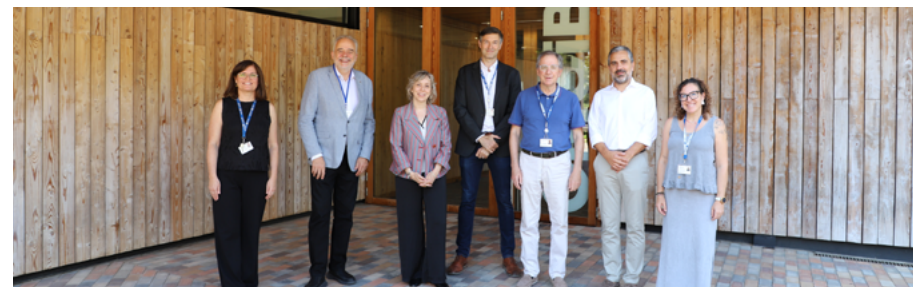
On 3 February, Núria Montserrat, Catalan Minister for Research and Universities, visited IGTP to learn about its research and innovation projects in health and its contribution to translational research.

STRATEGIC VISIT FROM THE CATALAN DEPARTMENT OF HEALTH

On 16 May, Antoni Plasència, Director General for Research and Innovation in Health, visited IGTP together with Montserrat Llavayol, Deputy Director General. They met with the Management Committee to discuss strategic priorities in health research and innovation.

VISITS FROM UAB AND CAIXARESEARCH INSTITUTE REPRESENTATIVES

On 16 July, IGTP welcomed Dr Javier Lafuente Sancho, Rector of the Universitat Autònoma de Barcelona, and representatives of the CaixaResearch Institute to present the centre and explore opportunities for collaboration and strategic partnership.



Training and events

Social events

Connecting beyond science

In 2025, IGTP held a wide range of social and community-building activities that strengthened internal cohesion and fostered a shared sense of belonging. From Carnival, Sant Jordi, La Diada, Castanyada and Christmas celebrations to sports activities, sustainability initiatives or PhD community events and, these moments brought together professionals from across the institute and the wider Can Ruti Campus.

Together, these initiatives reflected the active, engaged and collaborative spirit of the IGTP community, complementing the institute's scientific and institutional activity throughout the year.

**CELEBRATIONS • SPORTS •
SUSTAINABILITY • PHD COMMUNITY •
SOLIDARITY • TEAM BUILDING**





Communication and outreach

Communication and outreach

EXPANDING OUR DIGITAL REACH



X

969

PUBLICATIONS

+182,000

IMPRESSIONS

9,900

FOLLOWERS



LINKEDIN

128

PUBLICATIONS

+188,000

IMPRESSIONS

11,303

FOLLOWERS

Launch of the CMCiB LinkedIn profile

CONTENT AND MEDIA IMPACT

104

NEWS
STORIES

737

MEDIA IMPACTS

194

DAILY NEWS
CLIPPING

256

INTERNAL
COMMUNICATIONS

58

INTERNAL BULLETINS

+167,000

WEBSITE VISITS

REFLECTING ON IGTP'S TRAJECTORY



MOST RELEVANT NEWS

Check the latest IGTP news



28 JANUARY

[A new triple combination of inhibitors based on precision medicine emerges as a potential new treatment for Malignant Peripheral Nerve Sheath Tumours](#)



3 FEBRUARY

[Institutional visit of the Catalan Minister for Research and Universities to IGTP to learn about its research and innovation projects in health](#)



25 FEBRUARY

[A study led by the CIBEREHD group at Hospital Germans Trias demonstrates for the first time how to reduce the number of colonoscopies and improve the follow-up of patients with Crohn's disease](#)



22 MAY

[FOXP4 gene identified in the first large-scale genetic study on Long COVID with participation of the GCAT](#)



3 JUNE

[DM1-Hub launches as a national multi-centre study to transform research and care for Myotonic Dystrophy type 1](#)



10 JUNE

[Study led by IGTP reveals correlation between tuberculosis lesion transcriptomics and patients' clinical parameters](#)



19 JUNE

[The Innomed Awards highlight fifteen innovative biomedical projects in their second edition](#)



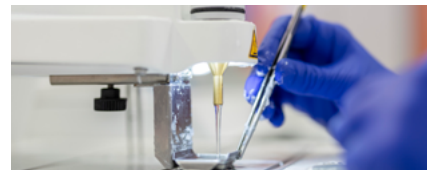
5 NOVEMBER

[IGTP marks 30 years of research and scientific collaboration at its annual symposium](#)



15 DECEMBER

[IGTP celebrates 30 years of transforming knowledge into health](#)



18 DECEMBER

[IGTP secures over €13 million to support the development of research projects and strengthen research talent](#)

OUTREACH

In 2025, IGTP continued to strengthen its commitment to communication and public engagement, enhancing the visibility and societal impact of its research. Alongside its presence in traditional media, the institute promoted a range **of initiatives aimed at bringing science closer to the public, particularly younger audiences**, and encouraging active engagement with research and innovation.

Outreach initiatives at IGTP



[#100tífiques](#)



[Secondary School Fair with a STEAM Focus](#)



[La Marató de 3CAT visits](#)



[Student visits](#)



[Escoles Sentinella project](#)



[European Researchers' Night](#)



[Can Ruti Open House](#)



[Podcast Un bri de ciència](#)



Research group overview

Research group overview

The year 2025 has been a period of strong activity for IGTP’s research groups and associated teams. Below you will find information on all of them, including their publications and main achievements of the year. You can click on one of the following research areas to explore the teams within each field, and find further details on their respective webpages.



Cancer	Cardiovascular and Respiratory Disease	Community Health
Diseases of the Liver and Digestive Tract	Endocrinology and Metabolic Diseases, Nephrology and Bone Diseases	Immunology and Inflammation
Infectious Diseases	Medical Complications and Clinical Pharmacology of Substance Use Disorder	Neuroscience

Cancer

Badalona Applied Research Group in Oncology (B-ARGO)

Ricard Mesía Nin

Anna Martínez Cardús

Cancer Genetics and Epigenetics (CGE)

Sergio Alonso Utrilla

Cancer Mechanisms and Pathways

Miguel Ángel Peinado Morales

Childhood Liver Oncology Group (c-LOG)

Carolina Armengol Niell

Clinical Genomics Unit (UGC)

Ignacio Blanco Guillermo

Elisabeth Castellanos Pérez

Endocrine Tumours (E.T.)

Mireia Jordà Ramos

Hereditary Cancer

Eduard Serra Arenas

Molecular and Translational Pathology

Pedro Luis Fernández Ruiz

Oncology Translational Research (OTR)

Jordi Barretina Ginesta

Resistance, Chemotherapy and Predictive Biomarkers (RCPB)

Eva Martínez Balibrea

Translational Cancer Genomics and Bioinformatics

Bernat Gel Moreno

Badalona Applied Research Group in Oncology (B-ARGO)



Group leaders: Ricard Mesía Nin, Anna Martínez Cardús



Research lines

- **IMMUNOLUNG:** Identification of biomarkers associated with immunotherapy in lung cancer.
- **iPARPResist:** Identification of resistance biomarkers to PARP inhibitors in gynaecological and other cancers.
- **Precision oncology in urological tumours:** Identification of therapeutic resistance biomarkers.
- **RESIST:** Tumoural and immunological mechanisms of resistance to CDK4/6 inhibitors in hormone-sensitive breast cancer.
- **Precision therapy in BRAF-mutated melanoma:** Selecting the optimal therapeutic approach for melanomas harbouring BRAF gene mutations.
- **VAL-GLIO-THERINT:** Validation of genomic alterations in glioblastoma: identifying vulnerabilities for therapeutic intervention.

- **HERMION-3:** Impact of tumour heterogeneity on resistance to chemo-immunotherapy in head and neck cancers. Focus on the STAT3 signalling pathway.
- **EMERLAC project:** Biomarkers in locally advanced rectal cancer exploring the microbiota and liquid biopsy.
- **ONCODRIVERS:** Monitoring biomarkers throughout treatment to detect acquired resistance to targeted therapies in a pan-cancer setting.
- **INTRIGA Project:** INTEGRative TRanslational research In GAstic cancer – integrative translational research in gastric cancer.
- **BTC-CROMA:** Study of chromatin regulator genes associated with treatment outcomes in cholangiocarcinoma.
- **APP-OXA:** Implementation of an app for monitoring and managing side effects during oxaliplatin-based chemotherapy in colorectal cancer patients.
- **IUO project:** Early detection of inappropriate opioid use in patients with lung cancer.

Featured publications

Felip E, Garcia-Vidal E, Cabrero-de Las Heras S, Bernat-Peguera A, Cirauqui B, Bergamino M, Quiroga V, Teruel I, Ferrando-Díez A, Pous A, Lopez-Paradís A, Boronat L, Romeo M, Mesía R, Fernandez PL, Clotet B, Riveira-Muñoz E, Martínez-Cardús A, Ballana E, Margelí M. **Immune-based transcriptomic signature predicts CDK4/6 inhibitor efficacy in HR+/HER2- breast cancer.** *Clin Transl Med.* 2025 Aug;15(8):e70426. DOI: [10.1002/ctm2.70426](https://doi.org/10.1002/ctm2.70426).

Solé-Blanch C, España S, de la Puente-Noel A, Marin-Béjar O, Manzano JL, Martínez-Cardús A. **Same mutation, different fates: The Yin-Yang of BRAF-driven therapeutic responses in melanoma and colorectal cancer.** *Biochim Biophys Acta Rev Cancer.* 2025 Dec 2;1881(1):189503. DOI: [10.1016/j.bbcan.2025.189503](https://doi.org/10.1016/j.bbcan.2025.189503).

Bourhis J, Aupérin A, Borel C, Lefebvre G, Racadot S, Geoffrois L, Sun XS, Saada E, Cirauqui B, Rutkowski T, Henry S, Modesto A, Johnson A, Chapet S, Calderon B, Sire C, Malard O, Binaud M, Da Silva Motta A, Thureau S, Pointreau Y, Blanchard P, Buiret G, Bozec

L, Lopez S, Vanbockstael J, Bosset M, Greilsamer C, Daste A, Bruna A, N'Guyen F, Plana M, Iruarizaga E, Temam S, Even C, Ruiz EP, Bert M, Karamouza E, Thariat J, Kazmierska J, Psyrrri A, Mesia R, Tao Y. **Nivolumab added to cisplatin and radiotherapy versus cisplatin and radiotherapy alone after surgery for people with squamous cell carcinoma of the head and neck at a high risk of relapse (GORTEC 2018-01 NIVOPOST-OP): a randomised, open-label, phase 3 trial.** *Lancet*. 2025 Dec 22;407(10526):363-374. DOI: [10.1016/S0140-6736\(25\)01850-1](https://doi.org/10.1016/S0140-6736(25)01850-1).

Highlights

This multidisciplinary group, accredited as a consolidated group by SGR-AGAUR (2021SGR01330 – TransICOBad), is made up of over 30 professionals working across different areas of research. Its mission is to be a translational research group of excellence that contributes to the implementation of personalised oncology, and its vision is to maintain an integrated cancer research and health-care system that optimises the management of cancer patients and improves both the length and quality of their lives.

In 2025, the group published more than 50 scientific papers, with a total impact factor of 611.3 and a mean IF of 12.23. Currently, B·ARGO has more than 25 competitive projects underway. It is also worth highlighting the group's ability to attract promising talent through competitive HR grants, having been awarded 1 Río Hortega and 2 Juan Rodés grants from ISCIII, as well as 2 Intensification contracts, 1 FI-STEP grant from AGAUR, and 1 "AECC Clínicos Junior" grant over the past three years. In addition, Dr Mesía, head of the group, has been appointed Director of the Nord Cat Comprehensive Cancer Center project.

Cancer Genetics and Epigenetics



Group leader: Sergio Alonso Utrilla



Research lines

- Epigenetic dysregulation of pericentromeric and subtelomeric regions: association with telomere dysfunction and endoreduplication in the first steps of gastrointestinal carcinogenesis
- Epigenetic determinants of enhanced tumour immunogenicity in colorectal cancer: towards targeted therapies to improve immunotherapy response
- Development of cost-efficient and scalable 3D co-culture models for immuno-oncology studies

Featured publications

Mateos-Sánchez C, González B, de Miguel-García G, Font-Cugat A, Marcote-Corral I, Alonso S. **Comparative analysis of 3D-culture techniques for multicellular colorec-**

tal tumour spheroids and development of a novel SW48 3D-model. *Sci Rep.* 2025 Jul 29;15(1):27687. DOI: [10.1038/s41598-025-13588-x](https://doi.org/10.1038/s41598-025-13588-x).

Navarro-Jiménez M, González B, Mulet N, Hierro C, Alonso S. **KRAS-targeted therapies in colorectal cancer: a systematic analysis of mutations, inhibitors, and clinical trials.** *NPJ Precis Oncol.* 2025 Nov 26;9(1):380. DOI: [10.1038/s41698-025-01166-3](https://doi.org/10.1038/s41698-025-01166-3).

Highlights

In 2025, the group consolidated the Gastric Cancer Task Force at the Can Ruti Campus as a major strategic milestone, bringing together a multidisciplinary team across ICO-Badalona, HUGTiP and IGTP. This initiative was driven by the identification of gastric cancer as a relative gap within the campus research portfolio, in contrast to other tumour types such as breast, lung and colorectal cancers, where multiple groups across IGTP, ICO-Badalona and IJC are actively investigating. The Task Force integrates expertise in clinical oncology, surgery, endoscopy, pathology, molecular biology, bioinformatics and biostatistics into a coordinated translational research platform. Co-led by Dr Cinta Hierro and Dr Sergio Alonso, it combines clinical leadership with advanced capabilities in molecular oncology and computational analysis, enabling a close alignment between patient care and multi-omic research.

A key strength of this initiative is the direct integration of prospective clinical cohorts with standardised biospecimen collection and advanced analytical pipelines. Established clinical circuits and biobank infrastructures support longitudinal sample acquisition, while dedicated molecular and computational teams drive biomarker discovery and validation. Overall, the Task Force provides the critical mass, infrastructure and scientific expertise required to strengthen gastric cancer research at the campus and advance precision medicine approaches in this disease.

Cancer Mechanisms and Pathways



Group leader: Miguel Ángel Peinado Morales



Research lines

- Chromatin architecture in cell differentiation and cancer
- The role of repeat elements in genome structure and function
- Clinically oriented research on the epigenetic changes involved in human cancer

Featured publications

Mulet Margalef N, Martín Abad B, Martínez-Balibrea E, Manzano Mozo JL, Borgognone A, Obón-Santacana M. **Microbiome as a predictive biomarker in locally advanced rectal cancer.** *Microbiome Res Rep.* 2025 Mar 24;4(2):18. DOI: [10.20517/mrr.2024.85](https://doi.org/10.20517/mrr.2024.85).

González-Barrallo I, Castellón Rubio VE, Medina J, España Fernández S, Mujika K, Majem M, Aguado C, Cabrera Suárez MÁ, Palacio I, Osterloh L, Martínez-Fernández A, García-Castaño A. **Relation between dabrafenib plus trametinib-induced pyrexia and age in BRAF V600-mutated metastatic melanoma patients: A post hoc analysis of the real-world ELDERLYMEL study.** *Melanoma Res.* 2025 Jun 1;35(3):170-175. DOI: [10.1097/CMR.0000000000001020](https://doi.org/10.1097/CMR.0000000000001020).

Childhood Liver Oncology (c-LOG)



Group leader: Carolina Armengol Niell



Research lines

- Consolidation of a unique European biorepository of childhood liver cancer
- Identification and validation of diagnostic and prognostic biomarkers to improve quality of life and survival of patients with liver cancer
- Understanding the molecular biology of childhood liver cancer
- Moving forward precision medicine in childhood liver cancer through the identification of the best drugs for each tumour type

Featured publications

Cives-Losada C, Asensio M, Briz O, Chinchilla-Tábora LM, Barranco MM, Río-Álvarez ÁD, Martínez-Chantar ML, Avila MA, Cairo S, Armengol C, Marin JJG, Macias RIR. **Relevance of transcriptome among the mechanisms of chemoresistance in hepatoblastoma.** *Biochem Pharmacol.* 2025 Jul;237:116914. DOI: [10.1016/j.bcp.2025.116914](https://doi.org/10.1016/j.bcp.2025.116914).

Cai Z, Boys EL, Noor Z, Aref AT, Xavier D, Lucas N, Williams SG, Koh JMS, Poulos RC, Wu Y, Dausmann M, MacKenzie KL, Aguilar-Mahecha A, Armengol C, Barranco MM, Basik M, Bowman ED, Clifton-Bligh R, Connolly EA, Cooper WA, Dalal B, DeFazio A, Filipits M, Flynn PJ, Graham JD, George J, Gill AJ, Gnani M, Habib R, Harris CC, Harvey K, Horvath LG, Jackson C, Kohonen-Corish MRJ, Lim E, Liu JJ, Long GV, Lord RV, Mann GJ, McCaughan GW, Morgan L, Murphy L, Nagabushan S, Nagrial A, Navinés J, Panizza BJ, Samra JS, Scolyer RA, Souglakos J, Swarbrick A, Thomas D, Balleine RL, Hains PG, Robinson PJ, Zhong Q, Reddel RR. **Federated Deep Learning Enables Cancer Subtyping by Proteomics.** *Cancer Discov.* 2025 Sep 4;15(9):1803-1818. DOI: [10.1158/2159-8290.CD-24-1488](https://doi.org/10.1158/2159-8290.CD-24-1488).

Balaseviciute U, Huguet-Pradell J, Abril-Fornaguera J, Gris-Oliver A, Rialdi A, Fernández-Martínez E, Montironi C, Del Pozo V, Houghton P, Zanatto L, Mesropian A, Keraite I, Thung S, Armengol C, Sancho-Bru P, Guccione E, Pinyol R, Llovet JM. **Effective therapeutic targeting of CTNNB1-mutant hepatoblastoma with WN-Tinib.** *Mol Oncol.* 2025 Dec 8;20(4):920-932. DOI: [10.1002/1878-0261.70168](https://doi.org/10.1002/1878-0261.70168).

Highlights

The Childhood Liver Oncology Group (c-LOG) is a pioneering research organisation with 15 years of experience dedicated to improving the survival and quality of life of children affected by liver cancer. With a primary focus on hepatoblastoma -a rare (1 case in 1 million) but aggressive cancer that affects infants and young children- c-LOG strives to uncover the underlying causes of the disease, develop more effective treatments, and refine risk stratification algorithms. These efforts aim to minimise the side effects of chemotherapy while improving patient outcomes. Additionally, the group is dedicated to translating its findings from childhood liver cancer research to the most common primary liver cancer in adults, hepatocellular carcinoma (HCC). Key achievements of c-LOG in 2025 include:

Expanding the global biorepository of childhood liver cancer

c-LOG consolidated one of the largest worldwide collections of childhood liver cancer samples, gathered from European patients participating in the Pediatric Hepatic International Tumor Trial (PHITT). This unique biorepository spans up to >3,500 samples from > 400 patients from 12 countries and over 100 hospitals, providing an invaluable resource for ongoing and future research.

Following the conclusion of the PHITT, the group is initiating sample collection within Spain, offering molecular testing and centralized pathological review in collaboration with Hospital Sant Joan de Déu.

Advancing to precision medicine for children with liver cancer

c-LOG collaborated with the leading American and Japanese groups in childhood liver cancer research to harmonise a comprehensive clinical, pathological, and molecular database including more than 200 patients. This international effort has enabled the identification and validation of prognostic biomarkers that will be assessed in the PHITT cohort, as a necessary step towards their future clinical translation.

Therapeutic target discovery against aggressive hepatoblastomas

c-LOG identified a promising therapeutic target in aggressive hepatoblastoma and evaluated a targeted immunotherapy against it based on an afucosylated monoclonal antibody designed to enhance antibody-dependent cellular cytotoxicity. Using a comprehensive platform of 16 patient-derived xenograft models, including high-risk and refractory tumours, the group demonstrated strong preclinical anti-tumour efficacy, with tumour response observed in 15 out of 16 models. These findings support this novel immunotherapy as a promising new therapeutic strategy for children with aggressive and refractory liver cancer.

With 16 years of dedicated research, c-LOG continues to lead the way in childhood liver cancer studies, working towards a future with improved outcomes for infants and children with liver cancer.

Clinical Genomics Unit (UGC)



Group leaders: **Ignacio Blanco Guillermo**, **Elisabeth Castellanos Pérez**



Research lines

- Increase of the cost-effectiveness of genetic testing and our knowledge of the genetic basis of some diseases (mostly hereditary diseases with a predisposition to develop tumours, as well as renal diseases)
- Development of personalised medicine for neurofibromatosis and schwannomatosis patients, which include the discovery of new prognostic biomarkers, understanding the role of patient's genomic alterations in the development of disease-associated lesions and the implementation of different gene therapy strategies as a potential treatment for these group of diseases
- Improvement of the management of phakomatosis patients considering not only clinical diagnosis but also emotional, social, religious and physical dimensions that could impact patients with these rare diseases
- Development of strategies to evaluate genetic individual susceptibility to illness

Featured publications

Catasús N, Casals-Sendra G, Torres-Martin M, Rosas I, Kuebler B, Mazuelas H, Amilibia E, Aran B, Veiga A, Raya Á, Gel B, Blanco I, Serra E, Carrió M, Castellanos E. **iPSC-based merlin-deficient Schwann cell-like spheroids as an in vitro system for studying NF2 pathogenesis.** *Genes Dis.* 2025 Mar 27;12(6):101615. DOI: [10.1016/j.gendis.2025.101615](https://doi.org/10.1016/j.gendis.2025.101615).

Muñoz D, Jodar M, Valls L, Fornieles-Deu A, Castellanos E, Blanco I. **The association of body image with quality of life, psychological assistance and social support in neurofibromatosis type 1 patients: a cross-sectional study.** *Orphanet J Rare Dis.* 2025 Jun 6;20(1):284. DOI: [10.1186/s13023-025-03729-w](https://doi.org/10.1186/s13023-025-03729-w).

Chen AP, Coyne GO, Wolters PL, Martin S, Farschtschi S, Blanco I, Chen Z, Darrigo LG Jr, Eoli M, Whittle JR, Nishida Y, Lamarca R, de la Rosa Rodriguez R, Adeyemi A, Herrero I, Llorente N, Diede SJ, Dombi E, Wolkenstein P; KOMET study investigators. **Efficacy and safety of selumetinib in adults with neurofibromatosis type 1 and symptomatic, inoperable plexiform neurofibromas (KOMET): a multicentre, international, randomised, placebo-controlled, parallel, double-blind, phase 3 study.** *Lancet.* 2025 Jun 21;405(10496):2217-2230. DOI: [10.1016/S0140-6736\(25\)00986-9](https://doi.org/10.1016/S0140-6736(25)00986-9).

Highlights

International effort to establish variant classification guidelines for NF-SWN genes

The group, through the collaboration between Dr Castellanos and Dr Plotkin (MGB, USA), leads the Neurofibromatosis and Schwannomatosis Genes Variant Curation Expert Panel (VCEP) within the NIH-funded Clinical Genome Resource (ClinGen). The initiative develops international guidelines for classifying variants in NF1, NF2, SPRED1, LZTR1 and SMARCB1, genes associated with rare neurogenetic syndromes characterised by tumour predisposition and intellectual disability. The guidelines are endorsed by the NIH and subject to FDA approval.

Cognitive function in adults with NF1

A study of 81 adults with NF1 without known cognitive disabilities found performance below population averages across seven cognitive domains. Executive function showed clinically significant impairment, attention deficits were associated with skin severity, and visuospatial ability was linked to depressive symptoms. The findings indicate that cognitive difficulties persist into adulthood and should be considered in long-term patient support. This work is currently under revision.

Body image and quality of life

A study of 205 NF1 patients showed that body image disturbances were the main predictor of reduced quality of life, more strongly than clinical skin severity. Patients with body image impairment were more likely to seek psychological support and reported lower perceived social support, both linked to poorer

quality of life. This is the first comprehensive analysis correlating self-image, social support, psychological care and quality of life in NF1 patients (PMID: [40481533](#)).

Advanced therapies for NF-related schwannomatosis

The group developed a novel NF2-SWN model using induced pluripotent stem cells carrying NF2 loss-of-function variants generated through direct reprogramming and CRISPR/Cas9 editing. For the first time, these cells were differentiated into the neural crest-Schwann cell lineage using 3D conditions (PMID: [40746735](#)). The group also demonstrated that PMO-based antisense therapy can partially rescue merlin deficiency in NF2-SWN spheroids, supporting its therapeutic potential. This work is currently under revision.

Genomic diagnostic tools for NF and SWN syndromes

The group coordinates the EJP-RD-funded EURONET-NF consortium, focused on improving molecular diagnosis, mosaic detection, variant classification through functional assays, and the harmonisation of protocols and reference guidelines within ERN GENTURIS.

Endocrine Tumours (E.T.)



Group leader: Mireia Jordà Ramos



Research lines

- Molecular mechanisms of thyroid cancer progression and therapy resistance
- Epigenetic biomarkers in thyroid cancer
- Biomarkers and mechanisms of treatment response in somatotroph pituitary tumours (acromegaly)

Featured publications

Rashwan HA, Marqués-Pamies M, Ruiz S, Gil J, Asensio-Wandosell D, Martínez-Momblán MA, Vázquez F, Salinas I, Ciriza R, Jordà M, Chanson P, Valassi E, Abdelnasser M, Puig D, Puig-Domingo M. **Acromegaly facial changes analysis using last generation artificial intelligence methodology: the AcroFace system.** *Pituitary*. 2025 Apr 21;28(3):50. DOI: [10.1007/s11102-025-01515-2](https://doi.org/10.1007/s11102-025-01515-2).

Rodríguez-Lloveras H, Zafon C, Iglesias C, Marcos-Ruiz J, Gil J, Rueda-Pujol A, González L, Mayor R, Klein Hesselink EN, van Hemel BM, Carrato C, Perelló-Fabregat C, Hernández-Losa J, Somoza R, Pluvinet R, Sánchez-Herrero JF, Sumoy L, Seoane J, Riesco-Eizaguirre G, Montero-Conde C, Robledo M, Hernando J, Capdevila J, Reverter JL, Puig-Domingo M, Links TP, Jordà M. **DNA Methylation Dynamics and Prognostic Implications in Metastatic Differentiated Thyroid Cancer.** *Thyroid*. 2025 May; 35(5):494-507. DOI: [10.1089/thy.2024.0303](https://doi.org/10.1089/thy.2024.0303).

Highlights

In 2025, the Endocrine Tumours Group published in *Thyroid* the first comprehensive analysis of the DNA methylome in metastatic thyroid cancer. This landmark study identified a DNA methylation signature in primary tumours that predicts the risk of distant metastases, uncovering key epigenetic mechanisms driving tumour progression. These findings provide a robust basis for improved risk stratification and more personalised patient management at the time of diagnosis.

Based on this work, the group secured two competitive grants. These included the Indústria del Coneixement 2025 – Modalitat Llabor innovation grant, funded by the Government of Catalonia, and a research grant from Instituto de Salud Carlos III for the project “PREDICTHY: Minimally invasive epigenetic biomarkers for the prediction of disease progression and treatment resistance in thyroid malignancies” (PI25/00777). In addition, an international PCT patent application was filed (PCT/EP2025/088967).

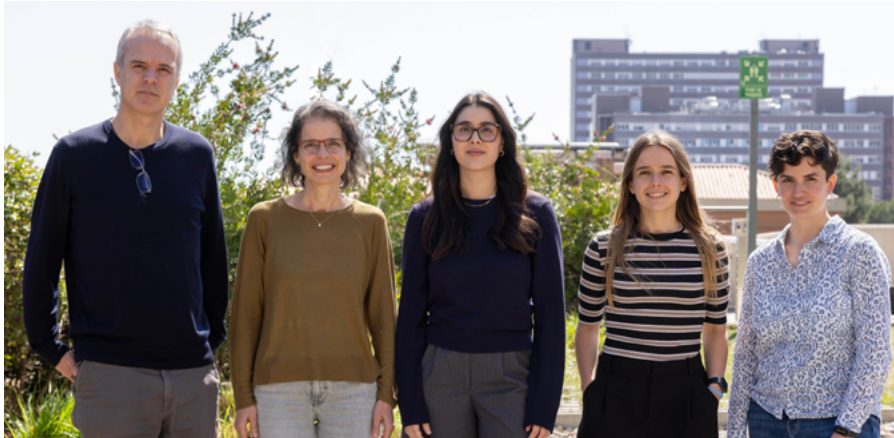
The group participated in several national and international scientific meetings. Dr Mireia Jordà was invited to speak at Dutch Thyroid Day 2025 (October, Amsterdam). Group members presented two oral communications and one poster at the 67th Congress of the Spanish Society of Endocrinology and Nutrition (SEEN), where Dr Jordà also served as a co-organiser. In addition, the group actively participated in several IGTP scientific activities, including the IGTP Annual Symposium, CARE seminars and Coffee Talks.

The group also took part in multiple initiatives aimed at promoting science and gender equality, including the 8th edition of #científiques; short outreach videos for IGTP and SEEN social media channels for the International Day of Women and Girls in Science; Fira STEAM in Badalona; and Science Week, demonstrating their commitment to scientific communication and public engagement.

In line with its dedication to education and training, the group hosted and mentored a Master's thesis student (Ivan Martínez) and a visiting PhD student from the Netherlands (Mirthe Links). Moreover, Anna Rueda completed a short pre-doctoral research stay at the University Medical Center Groningen to gain expertise in establishing thyroid organoids. Teaching activities also included the co-organisation of the course "Fundamentals of Basic Research" (Consorti Sanitari del Maresme - IGTP) and the VII Can Ruti PhD Day.

In addition to these scientific and training contributions, Dr Mireia Jordà was nominated as Research Representative on the Board of Directors of Sociedad Española de Endocrinología y Nutrición (SEEN).

Hereditary Cancer



Group leader: **Eduard Serra Arenas**



Research lines

- Development, characterisation and use of in vitro and in vivo models of NF1-associated peripheral nervous system (PNS) tumours
- Cancer genomics and integrative biology of tumours of the peripheral nervous system, other neural crest-derived tumours and sarcomas
- Molecular pathogenesis of neurofibromatosis type 1

Featured publications

Ortega-Bertran S, Fernández-Rodríguez J, Magallón-Lorenz M, Zhang X, Creus-Bachiller E, Díazgranados AP, Uriarte-Arrazola I, Mazuelas H, Blanco I, Valverde C, Carrió M, Villanueva A, De Raedt T, Romagosa C, Gel B, Salvador H, Ferrer M, Lázaro C, Serra E. **Triple Combination of MEK, BET, and CDK Inhibitors Significantly Reduces Human Malignant Peripheral Nerve Sheath Tumors in Mouse Models.** *Clin Cancer Res.* 2025 Mar 3;31(5):907-920. DOI: [10.1158/1078-0432.CCR-24-2807](https://doi.org/10.1158/1078-0432.CCR-24-2807).

Ortega-Bertran S, Creus-Bachiller E, Magallón-Lorenz M, Carrió M, Gel B, Villanueva A, Lopez-Gutierrez JC, Estival A, Serra E, Fernández-Rodríguez J, Lázaro C. **New models for MPNST: establishment and comprehensive characterization of two tumor cell lines.** *Cancer Cell Int.* 2025 Jul 18;25(1):268. DOI: [10.1186/s12935-025-03845-4](https://doi.org/10.1186/s12935-025-03845-4).

Bai RY, Shi J, Liu J, Sun N, Lu Y, Chen X, Xu M, Lim H, Li Y, Xu H, Weisgerber K, Ren Z, Pratilas CA, Blakeley JO, Fishel ML, Carrió M, Serra E, Staedtke V. **Development of an adeno-associated virus vector for gene replacement therapy of NF1-related tumors.** *Nat Commun.* 2025 Sep 29;16(1):8594. DOI: [10.1038/s41467-025-63619-4](https://doi.org/10.1038/s41467-025-63619-4).

Highlights

During 2025, the Hereditary Cancer Group achieved several important scientific milestones. In collaboration with the group of Dr Conxi Lázaro at ICO-IDIBELL, the team tested a precision medicine strategy for malignant peripheral nerve sheath tumours (MPNSTs). In different MPNST PDX models, the combination of MEK, CDK and BET inhibitors showed a strong effect, not only halting tumour growth but also significantly reducing tumour volume and achieving complete regression in some cases. These results open the possibility of compassionate use in paediatric patients and pave the way for future clinical trials for this aggressive soft tissue sarcoma.

Within the same collaboration, the group contributed to the development and characterisation of new MPNST cell lines and PDX models from additional primary tumours, which were incorporated into a shared preclinical platform. These newly established models, together with their corresponding PDOX systems, provide valuable tools for both in vitro and in vivo testing of novel therapeutic agents, expanding the genetic and genomic landscape represented in MPNST research.

The group also collaborated with Dr Verena Staedtke and Dr Rem-Yuan Bai (Kennedy Krieger Institute and Johns Hopkins University School of Medicine, Baltimore, USA) in the development of an adeno-associated virus (AAV) vector for gene replacement therapy in NF1-related tumours. By providing in vitro and in vivo neurofibroma models derived from induced pluripotent stem cells (iPSCs) with NF1 deficiency, the group contributed to the validation of this therapeutic strategy, supporting the development of a viable AAV-based approach for NF1 tumour treatment.

In addition, the group presented its work at several conferences, notably the NF Conference 2025 organised by the Children's Tumor Foundation (Washington, June 2025), where up to five scientific contributions were presented. As members of the Translational Program on Cancer Research (CARE), the team actively participated in the activities of the Preclinical Models node, the III Jornada de Sarcomes 2025, and the CARE Annual Meeting.

Finally, the group engaged in outreach activities organised by patient and family associations. In particular, it participated in the [NF Academy 2025](#), an initiative organised by Neurofibromatosis Patients United together with the Catalan association ACNEFI, where young participants from across Europe receive training to become ambassadors for awareness, advocacy and guidance on neurofibromatosis and schwannomatosis.

Molecular and Translational Pathology



Group leader: **Pedro Luis Fernández Ruiz**



Research lines

- Breast and genitourinary neoplasms
- Lymphoid and mesenchymal neoplasms
- Respiratory tract, and head & neck neoplasms
- Digestive and hepatobiliary tract neoplasms
- Nervous and endocrine systems neoplasms, and neurodegenerative disorders
- Skin neoplasms
- Nephropathology and fetal pathology
- Molecular pathology
- Paleopathology
- Confocal microscopy
- Spatial transcriptomic of cancer

Featured publications

Jordà-Redondo M, Piqueras A, Castillo A, Fernández PL, Bresolí-Obach R, Blay L, Julián Ibáñez JF, Nonell S. **An antibody-photosensitiser bioconjugate overcomes trastuzumab resistance in HER2-positive breast cancer.** *Eur J Med Chem.* 2025 Jun 5;290:117511. DOI: [10.1016/j.ejmech.2025.117511](https://doi.org/10.1016/j.ejmech.2025.117511).

Pons L, Hernandez L, Urbizu A, Arnaldo L, Rodriguez-Martinez P, Sanz C, Muñoz-Mármol AM, Fernandez E, Felip E, Quiroga V, Margelí M, Fernandez PL. **Molecular Landscape, Genomic Shift, and Prediction in the Neoadjuvant Setting of Human Epidermal Growth Factor Receptor 2-Positive Breast Cancer.** *Mod Pathol.* 2025 Sep;38(9):100787. DOI: [10.1016/j.modpat.2025.100787](https://doi.org/10.1016/j.modpat.2025.100787).

Humaran D, Castillo A, Blay L, Pascual I, Matute-Molina K, Pérez-Anker J, Puig S, Fernández PL, Julián JF. **Towards a New Standard: Prospective Validation of Ex Vivo Fusion Confocal Microscopy for Intraoperative Margin Assessment in Breast-Conserving Cancer Surgery.** *Cancers (Basel).* 2025 Nov 30;17(23):3848. DOI: [10.3390/cancers17233848](https://doi.org/10.3390/cancers17233848).

Highlights

An important accomplishment for the group in 2025 was the launch of a new coordinated project funded by La Marató de 3CAT, led by Dr Aintzane Urbizu. The project aims to study the mechanisms driving aggressiveness in intraductal breast carcinomas using spatial transcriptomics, in collaboration with the University of Vic, Hospital Vall d'Hebron and Oslo University Hospital.

The group also published a significant article on the genomic landscape of HER2-positive carcinomas and the prediction of response to systemic therapy, which formed part of the doctoral thesis of Dr Laura Pons. In addition, the team completed both the research phase and publication of a project on the use of confocal microscopy for breast cancer evaluation, as part of Dr Daniel Humaran's PhD thesis (Department of Surgery). Both theses were co-supervised by Dr PL Fernández.

Of particular note, several group members are involved in a collaborative effort to develop AI algorithms for research and routine use in cancer diagnosis at both national and international levels.

Finally, the group was involved in numerous collaborations with internal (IGTP) and external projects and teams, as well as in clinical trials, mainly in the fields of breast, colon, CNS and haematological cancers.

Oncology Translational Research (OTR)



Group leader: **Jordi Barretina Ginesta**



Research lines

- Multi-omics approaches to cancer research
- Organoid-based platforms for precision oncology
- Non-genetic tumour evolution and drug tolerance

Featured publications

Sibai M, Cervilla S, Grases D, Musulen E, Lazcano R, Mo CK, Davalos V, Fortian A, Bernat A, Romeo M, Tokheim C, Barretina J, Lazar AJ, Ding L; DUTRENEO Study Investigators; Grande E, Real FX, Esteller M, Bailey MH, Porta-Pardo E. **The spatial landscape of cancer hallmarks reveals patterns of tumor ecological dynamics and drug sensitivity.** *Cell Rep.* 2025 Feb 25;44(2):115229. DOI: [10.1016/j.celrep.2024.115229](https://doi.org/10.1016/j.celrep.2024.115229).

Hernández Á, Camps-Vilaró A, Polo-Alonso S, Subirana I, Ramos R, de Cid R, Rodríguez-Artalejo F, Elosua R, Chirilaque MD, Amiano P, Bermúdez-López M, Guevara M, Cinza-Sanjurjo S, Sánchez MJ, de León AC, Laclaustra M, Rojo-Martínez G, Guembe-Suescun MJ, Pérez-Gómez B, Vega-Alonso T, Torán-Monserrat P, Lora-Pablos D, Huerta JM, Valdivielso JM, Dégano IR, Félix-Redondo FJ, Gandarillas AM, Valdés S, Mundet-Tuduri X, Sánchez PL, Martín-Sánchez V, Rigo F, Alonso-Sampedro M, Moreno-Iribas C, Martín-Escudero JC, Delgado E, Grau M, Urrutia I, Ovejero D, Quintela I, Martí-Lluch R, Blay N, Banegas JR, Tizón-Marcos H, Gómez JH, Aizpurua A, Castro-Boqué E, Delfrade J, Prieto-Díaz MÁ, Rodríguez-Barranco M, Almeida-González D, Moreno-Franco B, Oualla-Bachiri W, Sayón-Orea C, Plans-Beriso E, Lozano JE, López-Lifante VM, Cancelas-Navia P, Cabrera-Castro N, Cambray S, Zacarías-Pons L, Fernández-Bergés D, Donoso-Navarro E, Maldonado-Araque C, Franch-Nadal J, Dorado-Díaz PI, Villarín-Castro A, Frontera-Juan G, Gude F, Andueza N, Téllez-Plaza M, Ares-Blanco J, Cruz R, Ribas-Aulinas M, Barretina J, Guallar-Castillón P, Caínzos-Achirica M, Colorado-Yohar SM, Llorente A, Díaz-Tocados JM, Ardanaz E, Micó-Pérez RM, Fernandez-Martinez NF, Del Cristo Rodríguez-Pérez M, Cenarro A, Calle-Pascual AL, Marrugat J. **Cohort profile: the CORDELIA study (Collaborative cOHORTs Reassembled Data to study mEchanisms and Longterm Incidence of chronic diseAses).** *Eur J Epidemiol.* 2025 May;40(5):581-599. DOI: [10.1007/s10654-025-01229-6](https://doi.org/10.1007/s10654-025-01229-6).

Pera J, Romero-Moya D, Torralba-Sales E, Andersson R, García-Hernández V, Magallón-Mosella M, Distefano M, Berenguer Balaguer C, Castaño J, De Giorgio F, Qiu Z, Iglesias A, Spurk P, Montserrat-Vazquez S, Pasquali L, Liang Z, Català A, Florian MC, Wlodarski MW, Bigas A, Marin-Bejar O, Giorgetti A. **Human iPSCs-based modeling unveils SETBP1 as a driver of chromatin rewiring in GATA2 deficiency.** *Nat Commun.* 2025 Nov 17;16(1):10035. DOI: [10.1038/s41467-025-65806-9](https://doi.org/10.1038/s41467-025-65806-9).

Highlights

Established in 2021, the Oncology Translational Research (OTR) Group continued to consolidate its research agenda in 2025, focusing on tumour evolution, therapeutic resistance and biomarker discovery. The group adopts a multidisciplinary approach, integrating genomics, spatial profiling, and single-cell technologies with advanced preclinical models to investigate cancer biology and treatment response.

A key milestone in 2025 was the completion of the Spot & Hit project, a public-private initiative conducted in collaboration with the company Aniling and the Resistance, Chemotherapy and Predictive Biomarkers (RCPB) group at IGTP. This project led to the development of a novel theragnostic tool aimed at personalising colorectal cancer (CRC) treatment. Funded shortly after the group's establishment, Spot & Hit exemplifies the OTR Group's ability to operate at the interface between academic research and innovation, combining advanced functional genomics with drug response profiling to identify actionable therapeutic vulnerabilities.

In parallel, the group made significant progress in several competitive research projects supported by national funding agencies. Ongoing initiatives included ImmunOC, focused on immune-oncology in ovarian cancer, and Immune4ALL, aimed at identifying predictive and pharmacodynamic biomarkers for immunotherapy in solid tumours. Additionally, the Plan de Generación de Conocimiento grant, led by Dr Oskar Marín Béjar, further strengthened the group's research capacity in the study of non-genetic tumour evolution and drug tolerance mechanisms.

Collaborations with multiple research groups and institutions -including participation in large consortia and multicentre studies- provided access to well-characterised patient samples, datasets generated from clinical studies, advanced computational resources, and complementary experimental platforms. These partnerships continue to support translational research efforts with strong potential for clinical impact.

Throughout 2025, the group maintained an active presence in scientific dissemination and outreach. Team members participated in major international conferences, including the AACR Special Conference on Advances in Ovarian Cancer Research, the ASEICA Annual Meeting, the European Molecular Imaging Meeting (EMIM), and several thematic meetings organised by the European Association for Cancer Research (EACR), as well as institutional and external seminar series. In addition, the group contributed to patient-centred and public engagement activities, collaborating with patient associations and participating in community-focused science outreach programs.

Resistance, Chemotherapy and Predictive Biomarkers (RCPB)



Group leader: *Eva Martínez Balibrea*



Research lines

- Biomarker discovery for treatment response and prognosis
- Identification of novel therapeutic targets
- Role of the tumour microenvironment in therapy response

Featured publications

López J, Llop-Hernández À, Verdura S, Serrano-Hervás E, Martínez-Balibrea E, Bosch-Barrera J, Teixidor E, López-Bonet E, Martín-Castillo B, Sardanyés J, Alarcón T, Lupu R, Cuyàs E, Menéndez JA. **Mitochondrial priming and response to BH3 mimetics in “one-two punch” senogenic-senolytic strategies.** *Cell Death Discov.* 2025 Mar 7;11(1):91. DOI: [10.1038/s41420-025-02379-y](https://doi.org/10.1038/s41420-025-02379-y).

Mulet Margalef N, Martín Abad B, Martínez-Balibrea E, Manzano Mozo JL, Borgognone A, Obón-Santacana M. **Microbiome as a predictive biomarker in locally advanced rectal cancer.** *Microbiome Res Rep.* 2025 Mar 24;4(2):18. DOI: [10.20517/mrr.2024.85](https://doi.org/10.20517/mrr.2024.85).

Queralt C, Moreta-Moraleda C, Costa M, Grau-Leal F, Diesch J, Vendrell-Ayats C, Musulén E, Wright RHG, Bugés C, Manzano JL, Cabrero-de Las Heras S, Zuber J, Buschbeck M, Forcales SV, Martínez-Balibrea E. **Loss-of-function genetic screen unveils synergistic efficacy of PARG inhibition with combined 5-fluorouracil and irinotecan treatment in colorectal cancer.** *Clin Transl Med.* 2025 Dec;15(12):e70543. DOI: [10.1002/ctm2.70543](https://doi.org/10.1002/ctm2.70543).

Highlights

In 2025, the RCPB group consolidated its activity across research, training, and scientific dissemination, with a strong focus on colorectal cancer (CRC) and translational oncology.

One of the group's key achievements was the award of the first Talent Biomed fellowship (Amics de Can Ruti, in collaboration with Conservas DANI) to PhD student Carla Vendrell, supporting the advancement of her doctoral research project. In addition, predoctoral researcher Ferran Grau received one of the Campus Can Ruti Innomed Awards for his project on CDK5 degradation as a novel therapeutic strategy in CRC, highlighting the innovative potential of this line of research.

The group maintained an active presence at international scientific meetings. Researchers presented three posters at the EACR Annual Meeting 2025 (Lisbon, June) -Ferran Grau in CRC, and Marta Costa and Marta Domenech in glioblastoma research- as well as one poster at the Targeting RAS Symposium 2025 (Salaman-

ca, September), presented by Carla Vendrell. These contributions reflect the productivity and international visibility of the group's early-stage researchers.

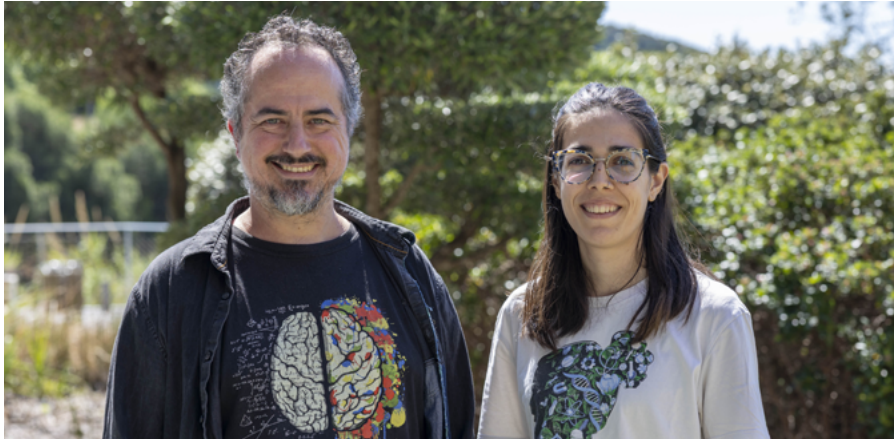
The group also reinforced its commitment to training and international collaboration by hosting Camilla Carrara, an Italian Master's student, for a research internship in the laboratory.

In addition, the group played a leading role in the organisation of scientific and outreach activities. The 23rd Annual Symposium on Translational Research and Digestive Neoplasms (6 November) brought together a large audience and featured prominent invited speakers, including Clara Montagut and Angela Nieto, who delivered the Xavier Giribés Lecture. The group also contributed to a public-oriented event on CRC prevention and current therapeutic approaches held in Badalona on 20 November, which gathered more than 100 attendees and included an interdisciplinary programme.

At the European level, the group leader actively contributed to the activities of the COST Action IMMUNO-model, participating in the Annual Conference (Warsaw, May) and the Young Researchers' Initiative (YRI) meeting in Porto. Notably, IMMUNO-model was selected as one of the COST Actions invited to visit the Joint Research Centre of the European Commission in Ispra, reinforcing the initiative's scientific relevance and visibility at the European level.

Overall, 2025 was marked by competitive funding achievements, strong international engagement, and continued efforts in training and knowledge dissemination.

Translational Cancer Genomics and Bioinformatics



Group leader: Bernat Gel Moreno



Research lines

- Tumour genomics and progression of peripheral nerve sheath tumours
- Genomics and bioinformatics tools for cancer diagnostics
- Liquid biopsy and nanopore sequencing for early cancer detection
- Bioinformatics methods and software development

Featured publications

Ortega-Bertran S, Fernández-Rodríguez J, Magallón-Lorenz M, Zhang X, Creus-Bachiller E, Diazgranados AP, Uriarte-Arrazola I, Mazuelas H, Blanco I, Valverde C, Carrió M, Villanueva A, De Raedt T, Romagosa C, Gel B, Salvador H, Ferrer M, Lázaro C, Serra E. **Triple Combination of MEK, BET, and CDK Inhibitors Significantly**

Reduces Human Malignant Peripheral Nerve Sheath Tumors in Mouse Models. *Clin Cancer Res.* 2025 Mar 3;31(5):907-920. DOI: [10.1158/1078-0432.CCR-24-2807](https://doi.org/10.1158/1078-0432.CCR-24-2807).

Catasús N, Casals-Sendra G, Torres-Martin M, Rosas I, Kuebler B, Mazuelas H, Amilibia E, Aran B, Veiga A, Raya Á, Gel B, Blanco I, Serra E, Carrió M, Castellanos E. **iPSC-based merlin-deficient Schwann cell-like spheroids as an in vitro system for studying NF2 pathogenesis.** *Genes Dis.* 2025 Mar 27;12(6):101615. DOI: [10.1016/j.gendis.2025.101615](https://doi.org/10.1016/j.gendis.2025.101615).

Ortega-Bertran S, Creus-Bachiller E, Magallón-Lorenz M, Carrió M, Gel B, Villanueva A, Lopez-Gutierrez JC, Estival A, Serra E, Fernández-Rodríguez J, Lázaro C. **New models for MPNST: establishment and comprehensive characterization of two tumor cell lines.** *Cancer Cell Int.* 2025 Jul 18;25(1):268. DOI: [10.1186/s12935-025-03845-4](https://doi.org/10.1186/s12935-025-03845-4).

Highlights

The Translational Cancer Genomics and Bioinformatics was established as an emergent group in 2025 after being approved by IGTP's External Scientific Advisory Board. During this first year, the group worked on its different active projects, including Malignant Peripheral Nerve Sheath Tumors (MPNST) progression and genomic characterization, development of genomics-based diagnostics tools for sarcomas and MPNSTs, as well as development of strategies for the early detection of cancer based on liquid biopsy analysis.

In parallel, the group strengthened its collaborations with other groups from the Can Ruti Campus and beyond. The collaborations, started a few years ago, resulted in three publications this year.

Cardiovascular and Respiratory Disease

Heart Failure and Cardiac Regeneration (ICREC)

Antoni Bayés Genís

Respiratory and Immune Repair (REPAIR)

Raquel Guillamat Prats

Heart Failure and Cardiac Regeneration (ICREC)



Group leader: Antoni Bayés Genís



Research lines

- Extracellular vesicles
- Translational preclinical research
- Cardiometabolism
- Cardiac Precision Medicine Platform (PMP-Heart)
- Clinical Trials Support Area / Clinical Trials Unit (ASAC)
- Innovation and technology transfer

Featured publications

Bayes-Genis A. **Pushing boundaries: the uncharted territory of managing a 110-year-old patient.** *Eur Heart J.* 2025 May 2;46(17):1577-1578. DOI: [10.1093/eurheartj/ehaf030](https://doi.org/10.1093/eurheartj/ehaf030).

Vilalta V, Delgado V. **TAVI for native aortic regurgitation.** *Lancet.* 2025 Dec 13;406(10521):2728-2729. DOI: [10.1016/S0140-6736\(25\)02273-1](https://doi.org/10.1016/S0140-6736(25)02273-1).

Bisbal F, Aranyó J, Iraola-Picornell G, Sanchez-Quintana D, Martínez-Falguera D, Sarrias A, Fadeuilhe E, Bazan V, Teis A, Rodríguez-Leor O, Villuendas R, Curiel C, Armengol MP, Pey I, Roura S, Bayés-Genís A, Gálvez-Montón C. **Anatomy of the Isthmus: Unraveling the Tissue Composition of the Ventricular Tachycardia Diastolic Pathway.** *JACC Clin Electrophysiol.* 2025 Dec 13;12(4):667-680. DOI: [10.1016/j.jacep.2025.10.014](https://doi.org/10.1016/j.jacep.2025.10.014).

Highlights

The Heart Institute (iCor) maintained intense scientific activity across basic, clinical, and translational research, reflected in publications, conferences, clinical trials, and competitive funding.

Scientific output. In 2025, iCor produced 211 PubMed-indexed articles (total IF: 2,751.40; mean IF: 13.10).

Conferences and scientific impact. iCor had a strong presence at major meetings, including the Catalan Society of Cardiology, SEC 2025, and ESC Congress 2025, contributing ~50 presentations overall. Key topics included non-invasive technologies (NIMBLE-I), coronary artery dissection, ventricular fibrillation trends, cardiogenic shock (Shock-CAT), biomarkers (HIF-1 α , angiopoietin-2), and PCSK9 therapies. Translational advances included two

ATMPs based on cardiac organoids and tissue-engineered vascular grafts (VASCRAFT). Additional contributions addressed remote monitoring (Cardio-MEMS), gender bias, valvular disease, lipid-lowering strategies, lipoprotein(a), SGLT2 inhibitors, and frailty in heart failure.

iCor researchers actively participated in international congresses (EuroPCR, ESC Acute Cardiovascular Care, EHRA, ACI-SEC, EACVI), contributing to interventional cardiology, imaging, electrophysiology, and structural heart disease, including TAVI and device-based therapies. Senior members held leading roles as invited speakers and faculty. Notably, VASCRAFT received the SEC award for best innovation in basic/translational research.

Clinical research. iCor participated in 108 trials across cardiovascular subspecialties, especially in heart failure, interventional cardiology, and electrophysiology. New studies included MARITIME-HF and AQT90 FLEX. Ongoing activity involved major trials and registries (NIMBLE, ARTEMIS, SOS-AMI, HORIZON, COROFLEX, TAVI programs) and heart failure studies (COLICA, VECTORIOUS, REDEFINE-HF, DELTA-HF, among others). Research was highly multidisciplinary across clinical units.

Translational research (ICREC Research Lab). Activity focused on myocardial infarction, inflammation, and cardiac repair. A collaboration with Boehringer Ingelheim showed cardioprotective effects of Survodutide in a murine heart failure model. Preclinical work in porcine MI models evaluated renal denervation, extracellular vesicles, cardiac organoids, and vascular grafts, in collaboration with international and local partners.

Funding. Competitive funding included a Societat Catalana de Cardiologia grant (€10,000) for cardiac organoids and a €209,885 project with Boehringer Ingelheim on Survodutide mechanisms.

Training and dissemination. Five PhD theses were defended, and iCor expanded educational activities through courses, workshops, and multidisciplinary training programs. Members contributed widely as faculty in national and international forums.

Communication. iCor strengthened its digital presence with a [new website \(https://icor.cat/\)](https://icor.cat/) and active dissemination through social media platforms.

Respiratory and Immune Repair (REPAIR)



Group leader: Raquel Guíllamat Prats



Research lines

- Characterisation of the endocannabinoid system and its possible therapeutic use for interstitial lung pathologies
- Identification of immune markers associated to the progression and response to antifibrotic treatments of pulmonary fibrosis patients
- Description of the genetic and molecular profiles of lung cancer in patients with chronic lung pathologies
- Innate and adaptive immune response in front of respiratory diseases, focusing on how certain comorbidities, such as diet-associated obesity, or repetitive infections impact the immune response
- Immunophenotyping of asthma patients

Featured publications

Bermudo-Peloché G, Del Río B, Vicens-Zygmunt V, Bordas-Martínez J, Hernández M, Valenzuela C, Laporta R, Rigual Bobillo J, Portillo K, Millán-Billi P, Balcells E, Ba-

denes-Bonet D, Bolívar S, Rodríguez-Portal JA, López Ramírez C, Tomás L, Fernández de Roitegi K, Sellarés J, Castillo D, González J, Barril S, Gutiérrez-Rodríguez Y, Caballero P, Alarcón J, Peñafiel J, Sanz-Santos J, Blavia R, Caupena C, Segovia P, Santos-Pérez S, Ferrer-Artola A, Badia MB, Hereu P, Fuentes M, Montes-Worboys A, Franquet T, Luburich P, Molina-Molina M. **Pirfenidone in post-COVID-19 pulmonary fibrosis (FIBRO-COVID): a phase 2 randomised clinical trial.** *Eur Respir J.* 2025 Apr 24;65(4):2402249. DOI: [10.1183/13993003.02249-2024](https://doi.org/10.1183/13993003.02249-2024).

Camprubí-Rimblas M, Tantinyà N, Artigas A, Guíllamat-Prats R. **Pharmacological inhibition of the CCL2-CCR2 axis fails to reduce inflammation in a rat model of acute lung injury.** *Sci Rep.* 2025 Aug 26;15(1):31368. DOI: [10.1038/s41598-025-11971-2](https://doi.org/10.1038/s41598-025-11971-2).

Highlights

In 2025, the group received competitive funding to stabilise several of its research lines and secure personnel to run the ongoing projects.

Paula Gonçalves Romeu, PhD student, was awarded with a FI-STEP from AGAUR to develop an ambitious research project aimed at studying the endocannabinoid system in respiratory diseases. In addition, she got funding from the European Respiratory Society (ERS short term fellowship) to do a 3-months internship at ERASMUS MC to learn to perform lung organoids and their viral infection.

The group secured several competitive grants to support high-quality research, including three grants from La Marató de 3CAT and one from Instituto de Salud Carlos III: “Impact of haematopoiesis in lung fibrosis and tissue regeneration” (PI: Raquel Guíllamat Prats); “Exploring the Dynamic Interplay between Pulmonary

Fibrosis and Lung Cancer Pathways” (FIBROCAN) (PI: Karina Portillo Carroz); “Transforming pneumonia therapy: miRNA-nanocarriers for immunomodulation and lung repair” (Carri-Air) (PI: Irene Aldás Criado); and “Differences in virome diversity and its relationship with inflammatory patterns in asthma according to severity and phenotype” (PI: Carlos Martínez Rivera).

Throughout the year, REPAIR maintained a strong commitment to scientific dissemination, presenting research at key national and international meetings such as one oral communication and one poster at the European Respiratory Society Conference in Amsterdam, one poster at the EACR: Defence is the Best Attack: Immuno-Oncology Breakthroughs, and several short communications at the Societat Catalana de Pneumologia.

In line with its commitment to education and training, the group also hosted and mentored one Master’s thesis students and one Bachelor student and participated in several outreach activities such as the Science Week at IGTP, the #científiques, and public activities organised by Amics de Can Ruti.

Community Health

Centre for Epidemiological Studies on HIV/ AIDS and STI of Catalonia (CEEISCAT)

Jordi Casabona i Barbarà

Innovation, Health Economics and Digital Transformation Research Group (INEDIT)

Oriol Estrada Cuxart

Maresme Study Group on Community-Acquired Pneumonia and COPD (GEMPAC)

Ramon Boixeda i Viu

Nursing Research Care Group (NURECARE)

Cristina Casanovas Cuellar

Ariadna Huertas Zurriaga

Woman & Health

Inés Velasco López

Centre for Epidemiological Studies on HIV/AIDS and STI of Catalonia (CEEISCAT)



Group leader: *Jordi Casabona i Barbarà*



Research lines

- Epidemiological surveillance methodologies for HIV, STIs, and other emerging sexually transmitted infections
- Monitoring and evaluation of antiretroviral therapy and its impact on people living with HIV
- Study and monitoring of multilevel determinants of HIV and other STI transmission
- Monitoring and evaluation of HIV and STI diagnosis
- New technologies and screening strategies for HIV and other STIs

Featured publications

Agustí C, Cunillera O, Mascort J, Carrillo R, Casabona J. **Implicit bias in HIV testing based on indicator conditions in primary care: a population-based study in Catalonia, Spain, 2017 to 2021.** *Euro Surveill.* 2025 Jun;30(24):2400585. DOI: [10.2807/1560-7917.ES.2025.30.24.2400585](https://doi.org/10.2807/1560-7917.ES.2025.30.24.2400585).

Moreno-García S, González-Recio P, Donat M, Iniesta C, Folch C, Alonso-Colón M, Guerras JM, Belza MJ. **Inequities in HIV prevention among trans and/or non-binary people: a cross-sectional survey analysis of PrEP and PEP awareness and use in Spain.** *Int J Equity Health.* 2025 Jul 7;24(1):197. DOI: [10.1186/s12939-025-02574-4](https://doi.org/10.1186/s12939-025-02574-4).

Salazar M, Lorente N, Schmidt AJ, Jonas K, Svallfors S, Ekström AM, Berglund T, Cáceres CF, Strömdahl S, Stuardo V, Casabona J. **Prevalence and associated factors of selling sex among men who have sex with men (MSM) in Latin America: results from the Latin American MSM Internet Survey in 18 countries (LAMIS-2018).** *BMJ Glob Health.* 2025 Dec 19;10(12):e021058. DOI: [10.1136/bmjgh-2025-021058](https://doi.org/10.1136/bmjgh-2025-021058).

Highlights

The year 2025 was particularly significant for CEEISCAT, coinciding with the commemoration of the centre's 30-year trajectory in epidemiological surveillance, monitoring, evaluation, and applied research in HIV, sexually transmitted infections (STIs), and viral hepatitis.

In the field of research, the group maintained a strong competitive profile, with five projects awarded during 2025. Among these, particular note should be made of the FIS project funded by Instituto de Salud Carlos III (AES 2025), focused on the impact of sexual networks on STI acquisition among people using PrEP. In addition, several relevant projects were launched, including Dona+, addressing gender inequalities and unmet needs among women living with HIV; SEXPRO, focused on sexual health and sexual satisfaction among people with HIV from a gender perspective; Pan-TESTATE, aimed at online pan-viral screening through self-sampling; TESTA'T-iCoNNECTA-Joves, funded by La Marató de 3CAT, to improve prevention, diagnosis, and partner notification among young people; and the Joint Action SHIELD, focused on strategies to eliminate infection-related cancers.

The year was also notable in terms of scientific output and knowledge transfer. The group published 25 articles in scientific journals, including papers in *The Lancet HIV* and *Eurosurveillance*, and produced six knowledge transfer outputs, including the annual epidemiological surveillance reports on HIV/AIDS and STIs in Catalonia.

In the program and applied research domain, strategic initiatives in monitoring and innovation were consolidated. The PISCIS cohort incorporated gender

variables, identified 635 trans and non-binary individuals, and improved both data quality and analytical capacity. The first annual PISCIS scientific meeting was also held. In parallel, key projects such as TESTATE PrEP, aSELF-GEN, REDAN, and EMIS were completed or further advanced, alongside new interventions targeting people experiencing homelessness and young populations. The 2024–2025 academic year also marked [the final stage of the Escoles Sentinella network](#).

The group's scientific visibility and training capacity were also strengthened in 2025, with 23 oral presentations and 12 posters presented at national and international conferences, as well as teaching activities across one undergraduate degree and six master's programmes. In addition, the centre coordinated the course Prevention and control of HIV and sexually transmitted infections: a community-based approach (UManresa). The group maintained four ongoing doctoral theses, supervised master's dissertations, and hosted four preventive medicine residents, three master's students, and five placement students, further consolidating its role as a hub for research, knowledge transfer, and training in public health.

Additionally, the group coordinated the second edition of the SEIMC–Ministry STI course, reinforcing its contribution to specialised training at the national level. In 2025, the STI Working Group of the Sociedad Española de Epidemiología was also established, coordinated by CEEISCAT, further consolidating its leadership in this field.

Innovation, Health Economics and Digital Transformation Research Group (INEDIT)



Group leader: *Oriol Estrada Cuxart*

Research lines

- Technological innovation
- Transformation and digital health
- Health economics

Featured publications

Cano M, Querol Carranza E, Albreda G, Ricou L, Estrada O, Moreno-Martinez D. **Analysis of the current status and future vision of innovation in a tertiary hospital in Catalonia: a cross-sectional study.** *BMC Health Serv Res.* 2025 Jul 18;25(1):958. DOI: [10.1186/s12913-025-13009-9](https://doi.org/10.1186/s12913-025-13009-9).

Guillamet GH, Seguí FL, Vidal-Alaball J, López B. **CTBN-PH: A continuous-time Bayesian network for individualised diagnostic risk prediction.** *Comput Biol Med.* 2025 Oct;197(Pt B):111069. DOI: [10.1016/j.combiomed.2025.111069](https://doi.org/10.1016/j.combiomed.2025.111069).

Vicente-Gómez JÁ, de Muniategui Climente M, Loste C, Barreales S, Ríos LR, Paredes R, Mateu L, Segui FL. **Post-COVID-19 condition patients' utilisation of healthcare resources after implementation of an integrated care unit.** *Cost Eff Resour Alloc.* 2025 Dec 2;23(1):72. DOI: [10.1186/s12962-025-00667-z](https://doi.org/10.1186/s12962-025-00667-z).



Highlights

Established in 2022, the INEDIT Research Group continues to strengthen its presence within the Can Ruti Campus and its role in health innovation. In 2025, the group focused on securing competitive funding, expanding collaborations, and advancing impactful research.

Throughout the year, INEDIT completed seven ongoing projects, and launched five new initiatives. Among the main highlights, the CUIDA+ project has evaluated a generative AI-based conversational assistant developed in collaboration with the home hospitalisation (HAD) team at Germans Trias i Pujol University Hospital, aimed at improving access to telemedicine for patients affected by the digital divide.

PROMORFI and PRESERVA, which were launched in 2025 in partnership with the Nephrology team at the Germans Trias i Pujol University Hospital and Research Institute, focus on advancing the diagnosis, monitoring, and clinical management of kidney-related conditions through digital transformation, innovation and patient-centered solutions.

In parallel, INEDIT continued working on the SuperCAP project, funded by the Barcelona City Council and "la Caixa Foundation". The initiative, led by Fundació Lluita contra les Infeccions, in collaboration with IGTP and the Associació Afectats Covid Persistent del Garraf, aims to improve the quality of life of people with long COVID by means of a personalized program in the app eSalut.

The ongoing Can Ruti Challenge initiative, which received funding from the Fundación Española para la Ciencia y Tecnología (FECYT), engages secondary school students in Badalona in co-creating solutions to real healthcare challenges through participatory activities.

In terms of scientific output, the group published four new papers in digital health, clinical decision support, and healthcare innovation, and remained active in conferences, strengthening its visibility within the research community.

The team also continued to grow, with four new researchers joining during the year, reinforcing its capacity to tackle increasingly complex health challenges.

Maresme Study Group on Community-Acquired Pneumonia and COPD (GEMPAC)



Group leader: Ramon Boixeda i Viu



Research lines

- Population study on COPD (misdiagnosis and comorbidity)
- Study of risk factors for exacerbation of COPD
- Study of risk factors for pneumonia
- Study of the aetiology and treatment of patients admitted to the hospital for pneumonia
- Study of risk factors for pneumonia in patients with respiratory conditions (asthma and COPD)
- Definition of a diagnostic algorithm for aspiration pneumonia
- Study of patients admitted to a general hospital for acute COPD
- Study of infectious comorbidity in patients admitted to the hospital for acute COPD
- COVID-19

Featured publications

Sitges-Milà C, Boixeda Viu R, Almirall J. **Aspiration pneumonia: epidemiology, risk factors, etiology, diagnosis, treatment, prophylaxis, and prognosis.** *BRN Rev.* 2025 Jun;11(2):122-135. DOI: [10.23866/BRNRev:2025-M0132](https://doi.org/10.23866/BRNRev:2025-M0132).

Martín-Martínez A, Sitges-Milà C, Miró J, Amadó C, Boixeda R, Yoshimatsu Y, Melgaard D, Clavé P, Ortega O. **Assessing the prevalence and the underdiagnosis of aspiration pneumonia among older hospitalized patients with community-acquired pneumonia using an artificial intelligence algorithm.** *Pneumonia (Nathan).* 2025 Sep 25;17(1):23. DOI: [10.1186/s41479-025-00175-x](https://doi.org/10.1186/s41479-025-00175-x).

Almirall J, Boixeda R, de la Torre MC, Cariqueo M, Torres A. **Factors driving outcome variability in aspiration and community-acquired pneumonia: a meta-analysis.** *Eur Respir Rev.* 2025 Oct 8;34(178):250037. DOI: [10.1183/16000617.0037-2025](https://doi.org/10.1183/16000617.0037-2025).

Highlights

The group co-developed an innovative healthcare protocol for the diagnosis and treatment of oropharyngeal dysphagia (OD) and aspiration pneumonia (AP), based on an AI-driven large-scale screening system and clinical assessment (V-VST) (PI25/01440). This project is carried out in collaboration with the Research Group on Neurogastroenterology, Motility and Dysphagia (NEUROMOD).

Nursing Research Group (NURECARE)



Group leaders: *Cristina Casanovas Cuellar, Ariadna Huertas Zurriaga*



Research lines

- Innovation and evidence-based care
- High complexity care for people in acute, chronic and maternal-child situations
- Care management and models: care based on quality, safety and efficiency
- Assessment of health outcomes and patient-centred value

Featured publications

Huertas-Zurriaga A, Cabrera-Jaime S, Navarri I, Teruel-Garcia I, Leyva-Moral JM. **Re-configuring Priorities: Breastfeeding Decision-making Among Young Breast Cancer Survivors.** *Cancer Nurs.* 2025 Jan 9. DOI: [10.1097/NCC.0000000000001455](https://doi.org/10.1097/NCC.0000000000001455).

Barroso-Castaño P, Cabrera-Jaime S, Feijoo-Cid M, Huertas-Zurriaga A, Benito Aracil L. **Outcome Indicators for Evaluating Interventions by Advanced Practice Nurses Specialising in Acute Pain: A Scoping Review.** *Nurs Open.* 2025 Apr;12(4):e70201. DOI: [10.1002/nop2.70201](https://doi.org/10.1002/nop2.70201).

Puig J, Satorra P, Martínez A, González S, Güerri-Fernández R, Arrieta-Aldea I, Arnau I, Prats A, Buihichy V, Tebe C, Negredo E. **Short Assessment for People with Human Immunodeficiency Virus (HIV) Aged 50 Years or Older: Essential Tests from Comprehensive Geriatric Assessment.** *Viruses.* 2025 Jun 24;17(7):887. DOI: [10.3390/v17070887](https://doi.org/10.3390/v17070887).

Highlights

The group achieved significant progress in 2025 through the successful award of the ERASMUS+ project “GENDER-HehS: Enhancing Gender Perspectives in Higher Education for Healthcare Students.” Funded under the ERASMUS+ KA220-HED Cooperation Partnerships call, this 36-month initiative aims to strengthen transversal competencies in gender perspective among university students in health sciences, including medicine, nursing, physiotherapy, and nutrition. This project is carried out in collaboration with an international consortium comprising Universitat Autònoma de Barcelona, University of Primorska (Slovenia),

Hacettepe University (Turkey), Nord University (Norway), Tecnocampus Mataró, and Hospital Universitari i Institut d'Investigació Germans Trias i Pujol. The initiative reinforces the group's commitment to advancing inclusive and socially responsive healthcare education at the European level.

In parallel, the group secured competitive funding within the RETECH Programme (Line 2: Sensorization Projects) for the project “IoMT Platform for Monitoring Complex Wounds Using Mobile Phones and Generative AI,” developed in collaboration with the UAB Engineering Department and VDM Health. This project focuses on the development and validation of an innovative, scalable digital solution integrating generative artificial intelligence, mobile technologies, multispectral and 3D imaging, physiological sensors, and contextual data. The platform is designed to support early detection, assessment, monitoring, and treatment of complex wounds across home-based and clinical settings.

The NURECARE group also strengthened its innovation ecosystem through a public-private partnership with the IGTP-affiliated startup HealthTech Innovations. This collaboration resulted in the ROBIN project (Robotics for Arm and Instrument Table), aimed at developing an intelligent instrument table and a robotic assistance arm to support surgical nursing practice, enhancing efficiency and precision in the operating room.

Finally, the group obtained competitive funding through the Talents program promoted by the Germans Trias i Pujol University Hospital and Research Institute for the projects CMIM (Multimodal Intervention in Mechanical Restraint), COMOTRAMA (Construction and validation of a functional assessment

scale for patients with acquired brain injury), and HAREH (Hemianopia Rehabilitation). Additional innovation support was secured through the Can Ruti Innova program for the HAREH project (Hemianopia Rehabilitation), further consolidating the group's translational research and innovation capacity in clinical and healthcare technology domains.

Woman & Health



Group leader: Inés Velasco López



Research lines

- Fetal programming
- Gender dimension
- Gender perspective
- Epigenetics and endocrine disruptors
- Breastfeeding action

Featured publications

Ros A, Hurtado I, Vázquez-Méndez É, Monlleó-Neila L, Pauta M, Rovira-Remisa MM, García B, Masotto B, Comas C, Blanco I, Zientalska A. **Prenatal FBXL4-Associated Mitochondrial DNA Depletion Syndrome-13: A New Case and Review of the Literature.** *Prenat Diagn.* 2025 Jun;45(6):829-834. DOI: [10.1002/pd.6794](https://doi.org/10.1002/pd.6794).

de Fátima Vélez-Pérez R, Arias-Borrego A, Velasco I, Soldevila B, García-Barrera T. **Liquid chromatography (ion mobility) coupled to organic and inorganic mass spectrometry for determination of eight thyroid hormones in human milk with enantiomeric separation of thyroxine.** *Food Chem.* 2025 Nov 15;492(Pt 3):145542. DOI: [10.1016/j.foodchem.2025.145542](https://doi.org/10.1016/j.foodchem.2025.145542).

Diseases of the Liver and Digestive Tract

Childhood Liver Oncology Group (c-LOG)

Carolina Armengol Niell

Inflammatory Bowel Diseases Research Group (GReMI)

Eugeni Domènech Morral

Josep Manyé Almero

Innate Immunity

Maria Rosa Sarrias Fornés

Research Group on Neurogastroenterology, Motility and Dysphagia (NEUROMOD)

Pere Clavé Civit

Omar Ortega Fernández

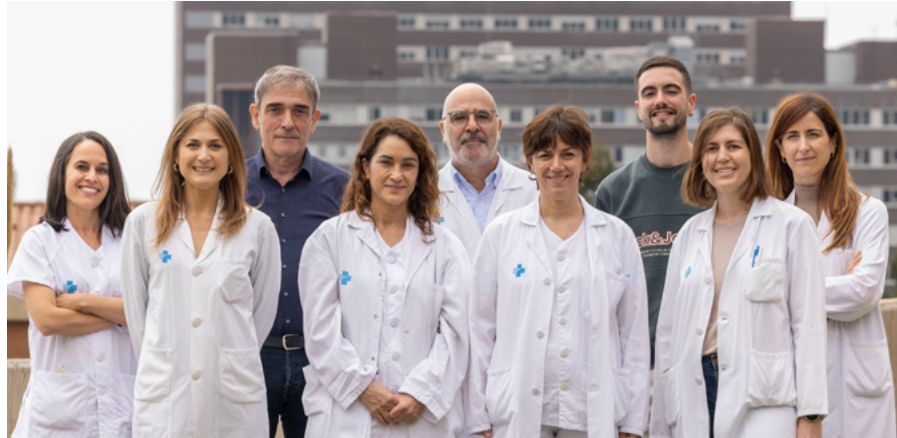
Noemí Tomsen

Translational Research in Hepatic Diseases

Rosa M. Morillas Cunill

Ramon Bartolí Solé

Inflammatory Bowel Diseases Research Group (GReMII)



Group leaders: Eugeni Domènech Morral, Josep Manyé Almero



Research lines

- Aging and frailty in inflammatory bowel disease
- Obesity and visceral fat in inflammatory bowel disease
- Fecal calprotectin in the monitoring of inflammatory bowel disease
- Epitranscriptomic biomarkers for steroid-refractory ulcerative colitis and for postoperative recurrence in Crohn's disease
- Development of acellular therapies targeting adipose tissue for Crohn's disease

Featured publications

Cañete F, Vela E, Calafat M, Piera J, Mañosa M, Domènech E. **Severe obesity, a susceptibility factor for developing inflammatory bowel disease: results of a population-based study.** *J Crohns Colitis*. 2025 Feb 4;19(2):jjaf010. DOI: [10.1093/ecco-jcc/jjaf010](https://doi.org/10.1093/ecco-jcc/jjaf010).

Llaó J, Mañosa M, Martín-Arranz E, Zabana Y, Navarro-Llavat M, Téller M, Garcia-Planella E, Busquets D, Monfort D, Pineda JR, Gutiérrez A, Villoria A, Menchén L, Bastida G, García-Alonso FJ, Rivero M, Chaparro M, de Francisco R, Merino O, Rodríguez-Lago I, Barreiro-de Acosta M, Rodríguez-Fortúnez P, Rodríguez-Jiménez C, Calafat M, Domènech E; CECUM study group of the GETECCU. **Addition of pulse corticosteroids to oral prednisone in moderately active ulcerative colitis: a randomized, multicentre, open-label study by GETECCU.** *J Crohns Colitis*. 2025 Dec 5;19(11):jjaf182. DOI: [10.1093/ecco-jcc/jjaf182](https://doi.org/10.1093/ecco-jcc/jjaf182).

Mañosa M, Calafat M, Ricart E, Nos P, Iglesias E, Riestra S, Mesonero F, Calvo M, Guardiola J, Hernández V, Rivero M, Carpio D, Mínguez M, Alba C, Martín-Arranz MD, Vela M, Gomollón F, García-López S, Casbas AG, Calvet X, González-Muñoz C, Barrio J, Gisbert JP, Sicilia B, Pérez-Calle JL, Bujanda L, Esteve M, Ramos L, Varela P, Sierra M, Merino O, Bermejo F, Barreiro-de Acosta M, Perez AR, Márquez-Mosquera L, García-Bosch O, Rodríguez-Lago I, Lorente Poyatos RH, García Sepulcre MF, Maroto N, Vega P, Monfort D, San Martín LZ, Busquets D, Martínez-Montiel P, Riera J, Alcain G, Llaó J, Marin N, Marin-Jimenez I, Sesé E, Van Domselaar M, Huguet JM, Ginard D, Bas-Cutrina F, Ber Y, Roncero O, Lucendo AJ, López-García A, Menacho M, Almela P, Ponferrada Á, Coronel AF, Maestro S, de Jesús Martínez-Pérez T, Vilafranca CM, Argüelles F, Legido J, Gilibert P, Charro M, Trapero AM, Fernández H, Frago S, Villalba LH, Muñoz E, Domènech E; ENEIDA registry of GETECCU. **Comparative Study on the Management and Outcomes of Postoperative Crohn's Disease in Older Patients: Data From the ENEIDA Registry.** *United European Gastroenterol J*. 2025 Dec 6;14(1):10.1002/ueg2.70150. DOI: [10.1002/ueg2.70150](https://doi.org/10.1002/ueg2.70150).

Innate Immunity



Group leader: Maria Rosa Sarrias Fornés



Research lines

- Role of innate immunity in liver disease
- Novel cancer immunotherapy strategy targeting macrophages
- Role of macrophage protein CD5L in infection

Featured publications

de la Rosa I, Sisó P, Ríos C, Gracia J, Cuevas D, Maiques O, Eritja N, Soria X, Angel-Baldó J, Gatus S, Sanchez-Moral L, Sarrias MR, Matias-Guiu X, Martí RM, Macià A. **High Copy Number Variations Correlate with a Pro-Tumoral Microenvironment and Worse Prognosis in Acral Lentiginous Melanoma.** *Int J Mol Sci.* 2025 Apr 25;26(9):4097. DOI: [10.3390/ijms26094097](https://doi.org/10.3390/ijms26094097).

Highlights

During 2025, the Innate Immunity group **consolidated its activity** around clinico-translational and innovation-driven research lines supported by **competitive funding**. Ongoing projects funded by the Ministry of Education (I+D 2024–2026) and AGAUR (2024–2026) provided a framework for advancing the understanding of innate immunity mechanisms and macrophage biology in inflammatory diseases, including cancer. The team also contributed to securing a one-year extension of the COST Action Myeinfobank (2025–2026) to develop an innovative computational solution, further strengthening its integration within European efforts on myeloid cell biomarkers in inflammatory diseases.

The group maintained **strong collaborative networks** at both local and international levels. On the Can Ruti Campus, active collaborations continued with groups in infectious diseases, immunology and gastroenterology, including joint research with Drs Armengol and Vilaplana (IGTP), Drs Cabrera and Carrillo (IrsiCaixa) and Dr Masnou (HUGTiP). At national and international levels, participation in the CIBERhd consortium and the Myeinfobank network facilitated coordinated research on CD5L and tissue macrophage signatures across institutions in Spain and Europe.

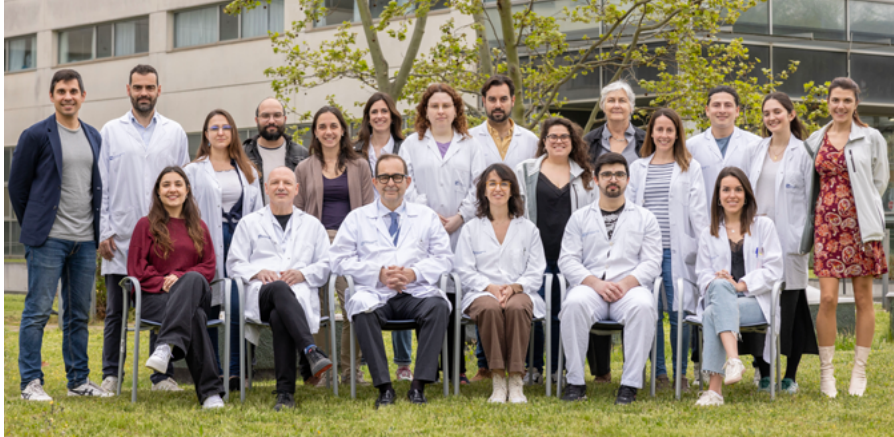
Several **academic milestones** were reached in 2025. One PhD thesis co-directed by the group was successfully defended in July (Marta Fortuny, University of Barcelona), and a Master's thesis focused on CD5L as a therapeutic target in cancer immunotherapy was completed (Vytautė Plekavičiūtė, Biomedicine, Universitat de Barcelona, July). The group continued the co-supervision of a PhD project (Qiaoling Ye) and contributed to doctoral evaluation committees in Universitat de Barcelona and Universitat Autònoma de Barcelona programs. Team members also expanded their computational expertise through specialised training in R programming (Qiaoling Ye, at IGTP) and data visualisation in R (Laura M Verbo, at CIBERehd).

In **education and outreach**, leadership was demonstrated through the organisation of the “10th course on basic and translational research in gastroenterology”, dedicated to computational biology, held at the Societat Catalana de Digestologia meeting (January). Research outputs and concepts were disseminated at national and international conferences, including specialised meetings in immunology and computational modelling (Societat Catalana de Digestologia, European Phagocyte Workshop and International Symposium on Computer Models in Biomechanics and Biomedical Engineering), as well as institutional scientific events (IGTP Coffee Talks and the 30th Anniversary Symposium). In parallel, the group contributed to the scientific community through service on grant review panels for Marie Skłodowska-Curie Actions, national research agencies (e.g. Ministry of Science, Innovation and Universities) and biomedical funding organisations (AECC).

Innovation activities progressed with the advancement of a therapeutic strategy targeting CD5L using a monoclonal antibody, protected by prior intellectual property. This work reinforced the group's commitment to translational impact through macrophage reprogramming in oncology. In addition, the in vitro diagnostic kit (EP3653646A) developed by the team was tested in the SMA-TB-led clinical trial in collaboration with the German company Lionex, and the results were evaluated.

Public engagement efforts included the communication of research achievements via IGTP platforms and LinkedIn, as well as participation in the International Day of Women and Girls in Science through visits to two high schools in Barcelona: Institut Pau Claris and Jaume Balmes.

Research Group on Neurogastroenterology, Motility and Dysphagia (NEUROMOD)



Group leaders: Pere Clavé Civit, Omar Ortega Fernández, Noemí Tomsen



Research lines

- Oropharyngeal dysphagia: pathophysiology and neurophysiology
- Oropharyngeal dysphagia: complications and compensatory interventions
- Novel treatments for oropharyngeal dysphagia: peripheral and central neurostimulation
- Digestive and anorectal motility disorders and pelvic floor pathology
- Big data and artificial intelligence tools for the large-scale screening of prevalent diseases
- Gastro-oesophageal motility
- Basic gastrointestinal studies

Featured publications

Martín-Martínez A, Sitges-Milà C, Miró J, Amadó C, Boixeda R, Yoshimatsu Y, Melgaard D, Clavé P, Ortega O. **Assessing the prevalence and the underdiagnosis of aspiration pneumonia among older hospitalized patients with community-acquired pneumonia using an artificial intelligence algorithm.** *Pneumonia (Nathan)*. 2025 Sep 25;17(1):23. DOI: [10.1186/s41479-025-00175-x](https://doi.org/10.1186/s41479-025-00175-x).

Mundet L, Karunaratne TB, Ortega O, Raventós A, Clavé P. **Study of the Corticoanorectal Neurophysiology in Women With Fecal Incontinence.** *Am J Gastroenterol*. 2025 Oct 1;120(10):2382-2391. DOI: [10.14309/ajg.0000000000003295](https://doi.org/10.14309/ajg.0000000000003295).

Tomsen N, Guanyabens N, Clavé P, Ortega O. **A Randomized Clinical Trial on the Effect of a Two-Week Treatment with Capsaicin on Older Patients with Oropharyngeal Dysphagia.** *Curr Neuroparmacol*. 2025 Oct 27. DOI: [10.2174/011570159X374720250930055705](https://doi.org/10.2174/011570159X374720250930055705).

Highlights

The research and innovation activities of the group are divided into two main areas. The main achievements of each in 2025 are:

Oropharyngeal dysphagia

- Participation in several European guidelines aimed at improving and standardising the diagnosis and treatment of prevalent gastrointestinal diseases.
- Analysis of the health economic burden of PS-OD and development of a cost-effectiveness study for its treatment with TES.
- Characterisation of swallowing disorders and related complications in a cohort of paediatric and adult patients with ID, reinforcing the group's commitment to socially oriented research.
- Description of the pathophysiology of OD in older adults through neurophysiological and biomechanical assessments, identifying disrupted sensory and motor neural pathways leading to impaired swallowing response.
- Development of an innovative healthcare protocol for the diagnosis and treatment of OD and aspiration pneumonia (AP), based on an AI-driven large-scale screening system (AIMS-OD; patent: ES2827598; spin-off: AIMS-Medical S.L., B10622793), clinical assessment (V-VST) and multimodal intervention. This protocol is funded by CatSalut as a transformative project (PT-092023-CSC; PI25/01440).
- Description, optimisation, implementation and quality control of alimentary fluids and texture-modified diets (TMD) in the group's hospital and two additional centres in Catalonia within the framework of this project.
- Investigation of how bolus volume and viscosity of thickened fluids, as well as TRP agonists, modify swallowing biomechanics in older patients using pharyngoesophageal high-resolution manometry.

- Development of new treatment strategies based on sensory stimulation (TRP agonists and transcutaneous electrical stimulation), including their acute and mid-term validation in older and post-stroke patients with OD (PS-OD), laying the groundwork for a new generation of targeted active treatments (PI22/01101; ICI25/00044; 2025LLAV00100).
- Development of combined (sensory and central) stimulation strategies for PS-OD (TRP agonists together with transcranial direct current stimulation or repetitive transcranial magnetic stimulation) (ICI20/00117).

Neurogastroenterology

- Assessment of the prevalence of faecal incontinence (FI) across different phenotypes of women in the community.
- Characterisation of the pathophysiology of FI in women, highlighting the role of the cortico-anorectal axis.
- Development of novel treatment strategies focused on both central and peripheral neural stimulation.

Translational Research in Hepatic Diseases



Group leaders: Rosa M. Morillas Cunill, Ramon Bartolí Solé



Research lines

- Chronic hepatitis
- Metabolic dysfunction-associated steatotic liver disease (MASLD)
- Cirrhosis and portal hypertension complications
- Hepatocellular carcinoma

Featured publications

Magaz M, Giudicelli-Lett H, Abalde JG, Nicoară-Farcău O, Turon F, Rajoriya N, Goel A, Raymenants K, Hillaire S, Téllez L, Elkrif L, Procopet B, Orts L, Nery F, Shukla A, Larrue H, Degroote H, Aguilera V, Llop E, Turco L, Indulti F, Gioia S, Tosetti G, Bitto N, Becchetti C, Alvarado E, Roig C, Diaz R, Praktinjo M, Konicek AL, Olivas P, Fortea JI, Masnou H, Puente Á, Ardèvol A, Navascués CA, Romero-Gutiérrez M, Scheiner B, Semmler G, Mandorfer M, Damião F, Baiges A, Ojeda A, Simón-Talero M, González-Alayón C, Díaz A, García-Criado Á, De Gottardi A, Hernández-Guerra M, Genescà J, Drilhon N, Noronha Ferreira C, Reiberger T, Rodríguez M, Morillas RM, Crespo J, Trebicka J, Bañares R, Villanueva C, Berzigotti A, Primignani M, La Mura V, Riggio O, Schepis F, Verhelst X, Calleja JL, Bureau C, Albillos A, Nevens F, Hernández-Gea V, Tripathi D, Rautou PE, García-Pagán JC; ERN RARE-LIVER; a study of VALDIG, an EASL consortium. **Porto-sinusoidal vascular liver disorder with portal hypertension: Natural history and long-term outcome.** *J Hepatol.* 2025 Jan;82(1):72-83. DOI: [10.1016/j.jhep.2024.07.035](https://doi.org/10.1016/j.jhep.2024.07.035).

Iborra I, Bartolí R, Ardèvol A, Torner M, Bermúdez-Ramos M, Bargalló A, Masnou H, Morillas RM. **Xyloglucan protects the intestinal barrier and reduces bacterial translocation in experimental cirrhosis - A promising non-antibiotic strategy.** *Rev Esp Enferm Dig.* 2025 Sep;117(9):490-496. DOI: [10.17235/reed.2025.11236/2025](https://doi.org/10.17235/reed.2025.11236/2025).

Puente Á, Turón F, Martínez J, Fortea JI, Guerra MH, Alvarado E, Pons M, Magaz M, Llop E, Alvarez-Navascués C, Navarrete AA, Berenguer M, Masnou H, Bañares R, Casado M, Ampuero J, Rios J, Saavedra C, Blasi A, Lisman T, Figuero CR, Huelin P, Tellez L, Arráez DM, Rodríguez M, Aguilera V, Arias Loste MT, Baiges A, Hernandez-Gea V, Perelló C, Calleja JL, Genescà J, Villanueva C, Gonzalez-Alayón C, Albillos A, Crespo J, García-Pagán JC. **Rivaroxaban to prevent complications of portal hypertension in cirrhosis: The CIRROXABAN study.** *J Hepatol.* 2025 Nov;83(5):1069-1076. DOI: [10.1016/j.jhep.2025.06.035](https://doi.org/10.1016/j.jhep.2025.06.035).

Endocrinology and Metabolic Diseases, Nephrology and Bone Diseases

Diabetes Research Group

Núria Alonso Pedrol

Endocrine, Thyroid and Obesity

Manel Puig Domingo

Experimental Nephrology and Cell-based Therapies (ENACT)

Marcel·la Franquesa Bartolomé

Innovation in Vesicles and Cells for Application in Therapy (IVECAT)

Francesc E. Borràs Serres

Research Group on Sarcopenia, Frailty and Dependency (GRESFD)

Mateu Serra Prat

Research in Kidney Affecting Diseases Group (REMAR)

Jordi Bover Sanjuán

Marcel·la Franquesa Bartolomé

Diabetes Research Group

Group leader: Núria Alonso Pedrol



Research lines

- Study of atherosclerosis and other complications associated with diabetes
- Epidemiological studies of diabetes: studies with real-life practice databases

Featured publications

Julián MT, Codina P, Lupón J, Zamora E, Pérez-Montes de Oca A, Domingo M, Santiago-Vacas E, Borrellas A, Ruiz-Cueto M, González-Gallego C, Troya M, Romero-González GA, Alonso N, Bayes-Genis A. **Long-term trajectory of estimated glomerular filtration rate in ambulatory patients with type 2 diabetes and heart failure: clinical insights and prognostic implications.** *Cardiovasc Diabetol.* 2025 Mar 5;24(1):104. DOI: [10.1186/s12933-025-02632-9](https://doi.org/10.1186/s12933-025-02632-9).

Barranco-Altirriba M, Rossell J, Alonso N, Weber RJM, Ortega E, Lloyd GR, Hernandez M, Yanes O, Capellades J, Winder C, Junza A, Falguera M, Franch-Nadal J, Dunn WB, Perera-Lluna A, Castelblanco E, Mauricio D. **Lipidomic analysis reveals metabolism alteration associated with subclinical carotid atherosclerosis in type 2 diabetes.** *Cardiovasc Diabetol.* 2025 Apr 2;24(1):152. DOI: [10.1186/s12933-025-02701-z](https://doi.org/10.1186/s12933-025-02701-z).

Amigó N, Castelblanco E, Julve J, Martínez-Micelo N, Alonso N, Hernández M, Ribalta J, Guardiola M, Torán-Monserrat P, Lopez-Lifante V, Herrero-Alonso C, Arteaga I, Ortega E, Franch-Nadal J, Mauricio D. **Advanced serum lipoprotein and glycoprotein profiling for cardiovascular event prediction in type 2 diabetes mellitus: the LIPOCAT study.** *Cardiovasc Diabetol.* 2025 Feb 21;24(1):88. DOI: [10.1186/s12933-025-02636-5](https://doi.org/10.1186/s12933-025-02636-5).

Endocrine, Thyroid and Obesity



Group leader: Manel Puig Domingo



Research lines

- Molecular phenotyping of pituitary tumors and its application to personalized medicine
- Thyroid pathology
- Obesity

Featured publications

Reyes-Farias M, Fernández-García P, Corrales P, González L, Navarro-Sanagustín D, Soria-Gondek A, Pellitero S, Tarascó J, Moreno P, Balibrea JM, Gatell L, Sumoy L, Galán M, Martínez E, Villarroya F, Cereijo R, Herrero L, Sánchez-Infantes D. **Lipid-associated macrophages are more abundant in subcutaneous than**

visceral adipose tissue in patients with obesity. *Obesity (Silver Spring)*. 2025 Aug;33(8):1543-1554. DOI: [10.1002/oby.24323](https://doi.org/10.1002/oby.24323).

Nowak E, Zhang Q, Zhang S, Zhao Y, Ye H, Machado MC, Moises CCS, Tóth M, Stark J, Yuen KCJ, Gurnell M, MacFarlane J, McCormack A, Govinna M, Gilis-Januszewska A, Minasyan M, Bonaventura I, Czepielewski MA, Ferriere A, Gadelha M, Isidori AM, Kastelan D, Maiter D, Tabarin A, Alexandraki KI, Chang J, Frontera ED, Hanzu FA, Matikainen N, Miljic D, Pichler R, Popovic V, Spencer-Segal JL, Tordjman K, Akirov A, Araujo-Castro M, Arvat E, Bancos I, Bioletto F, Burman P, Castinetti F, Detomas M, Fassnacht M, Feelders RA, Fountas A, Igaz P, Illic S, Isand K, Kaltsas G, Meyer G, Parasiliti-Capriano M, Newell-Price J, Ragnarsson O, Valassi E, Vila G, Wass J, Yoel U, Fleseriu M, Reincke M. **Cycle characterisation and clinical complications in patients with cyclic Cushing's syndrome: insights from an international retrospective cohort study.** *Lancet Diabetes Endocrinol*. 2025 Dec;13(12):1030-1040. DOI: [10.1016/S2213-8587\(25\)00249-9](https://doi.org/10.1016/S2213-8587(25)00249-9).

Melmed S, di Filippo L, Fleseriu M, Mercado M, Karavitaki N, Gurnell M, Salvatori R, Tsagarakis S, Losa M, Maffei P, Pereira AM, Geer EB, Katznelson L, van der Lely AJ, Bollerslev J, Esposito D, Webb SM, Zatelli MC, Valassi E, Neggers S, Chanson P, Ho KKY, Ioachimescu AG, Biller BMK, Samson SL, Kaiser UB, Schilbach K, Luque RM, Casanueva FF, Shimon I, Boguszewski CL, Biermasz N, Colao A, Pirchio R, Lamberts SWJ, Kadioglu P, Buchfelder M, Frara S, Chiloire S, Petersenn S, Gadelha MR, Puig-Domingo M, Luger A, Brue T, Beckers A, Ferone D, Clemmons DR, Greenman Y, Marazuela M, Mortini P, Strasburger CJ, Giustina A. **Consensus on acromegaly therapeutic outcomes: an update.** *Nat Rev Endocrinol*. 2025 Nov;21(11):718-737. DOI: [10.1038/s41574-025-01148-2](https://doi.org/10.1038/s41574-025-01148-2).

Highlights

During 2025, the group strengthened its position as an international reference in translational research and precision medicine for pituitary diseases, particularly acromegaly and Cushing's disease. Building on previous achievements, including the ACROFAST clinical trial, the team continued advancing the identification of molecular and epigenetic biomarkers to improve patient stratification, predict therapeutic response and optimise long-term outcomes. In recognition of this work, Prof Manel Puig-Domingo was invited to lecture at the American Endocrine Society annual meeting and the European Neuroendocrine Association meeting.

A major scientific achievement was the publication of the [ACROFACE study](#), which explored the use of artificial intelligence-based facial recognition technologies for the early detection of acromegaly. The project demonstrated the potential of machine-learning tools to identify subtle disease-associated facial changes and help reduce diagnostic delay.

The group also secured important competitive funding. Dr Elena Valassi obtained an Instituto de Salud Carlos III grant (PI25/01400) to develop and validate a personalised medicine algorithm integrating clinical, biochemical, radiological and molecular variables to predict recurrence risk after surgery in Cushing's disease. Dr Joan Gil received a Recordati-Fundación SEEN grant to investigate epigenetic biomarkers in acromegaly and develop predictive tools to support treatment individualisation.

International visibility was reinforced through participation in major scientific societies and collaborative initiatives. Prof Puig-Domingo pre-

sented ACROFAST results at numerous international conferences, while Dr Valassi continued her leadership activities within the European Society of Endocrinology (ESE), including the Executive Committee, and contributed to initiatives such as the ERCUSYN network. Group members also presented their work at the European Congress of Endocrinology (Copenhagen) and ENDO 2025 (San Francisco).

The group contributed to international consensus statements and expert recommendations. Puig-Domingo and Valassi participated in the ACRO-CONSENSUS international group, contributing to the update of therapeutic outcome criteria and treatment goals in acromegaly. The group also contributed to recommendations on the management of severe Cushing's syndrome.

Dr Silvia Pellitero led the SARCOBAR study, a Spanish multicentre project on sarcopenia in obesity that received the award for Best Oral Presentation at the 2025 SEEN Congress in Granada. She also leads a microbiota study in surgically treated patients with severe obesity, supported by an Instituto de Salud Carlos III grant and expected to conclude in early 2026.

Overall, the group produced 29 PubMed-indexed publications in 2025. Two doctoral theses are nearing completion: one on obesity by Rocio Puig (defence in May 2026) and another by Paula de Pedro (defence in 2027).

Experimental Nephrology and Cell-based Therapies (ENACT)



Group leader: Marcel·la Franquesa Bartolomé



Research lines

- Novel therapeutic approaches in experimental kidney disease
- Non-invasive biomarkers

Featured publications

Clos-Sansalvador M, Garcia SG, Rodríguez-Martínez P, Sanroque-Muñoz M, Font-Morón M, Grange C, Bussolati B, Franquesa M, Juega J, Borràs FE. **Proteomics of Urinary Extracellular Vesicles Highlight the Involvement of Vitronectin and the Fibrinolytic and TNF Pathways as Mechanisms Underlying Renal Fibrosis in Kidney Transplant Patients.** *J Extracell Biol.* 2025 Jun 2;4(6):e70056. DOI: [10.1002/jex2.70056](https://doi.org/10.1002/jex2.70056).

Pan L, Garcia SG, Font-Morón M, Sanroque-Muñoz M, Clos-Sansalvador M, Garcia GM, Borràs FE, Franquesa M. **Beyond preclinical promise: can mesenchymal stromal cell-derived extracellular vesicles reliably target tubular epithelial cells?** *Extracell Vesicles Circ Nucl Acids.* 2025 Sep 23;6(3):580-593. DOI: [10.20517/evcna.2025.54](https://doi.org/10.20517/evcna.2025.54).

Highlights

The group focused on the development of kidney disease-specific functional assays to evaluate MSC-EV therapy. It developed a large animal model of glomerulopathy and several 2D in vitro models. Following the recent award of the PI24 project, the group has initiated the development of organ-on-a-chip systems for personalised medicine and to reduce animal use.

Innovation in Vesicles and Cells for Application in Therapy (IVECAT)



Group leader: Francesc E. Borràs Serres



Research lines

- Development of new strategies for the improvement in the objective diagnosis of diseases/pathologies
- Research in the field of preventive and therapeutic Cell & “Cell-free” advanced therapies for immunomodulation and regenerative medicine

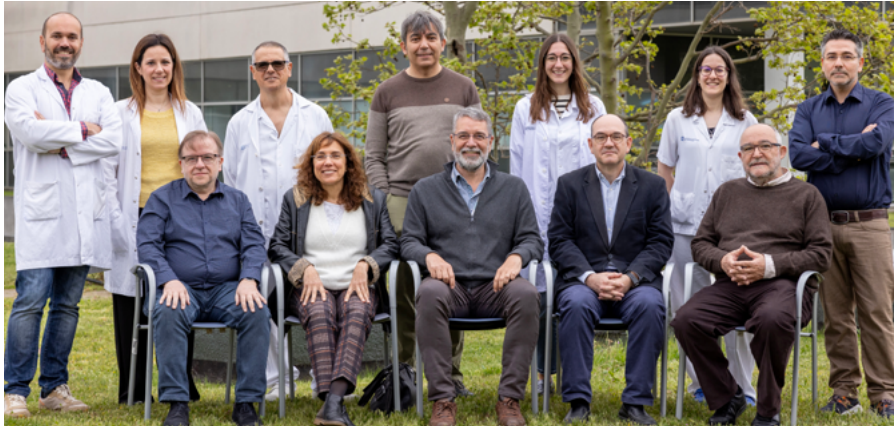
Featured publications

Clos-Sansalvador M, Garcia SG, Rodríguez-Martínez P, Sanroque-Muñoz M, Font-Morón M, Grange C, Bussolati B, Franquesa M, Juega J, Borràs FE. **Proteomics of Urinary Extracellular Vesicles Highlight the Involvement of Vitronectin and the Fibrinolytic and TNF Pathways as Mechanisms Underlying Renal Fibrosis in Kidney Transplant Patients.** *J Extracell Biol.* 2025 Jun 2;4(6):e70056. DOI: [10.1002/jex2.70056](https://doi.org/10.1002/jex2.70056).

Droste M, Puhka M, van Royen ME, Ng MSY, Blijdorp C, Alvarez-Llamas G, Borràs FE, Büscher AK, Bussolati B, Dear JW, Falcón-Pérez JM, Giebel B, Grange C, Hoorn EJ, Leivo J, Lenassi M, Llorente A, Lucien F, Mertens I, Mischak H, Pink D, Tertel T, Tiwari S, Di Vizio D, Yuen PST, Zarovni N, Jenster G, Burger D, Martens-Uzunova ES, Erdbrügger U. **Roadblocks of Urinary EV Biomarkers: Moving Toward the Clinic.** *J Extracell Vesicles.* 2025 Jul;14(7):e70120. DOI: [10.1002/jev2.70120](https://doi.org/10.1002/jev2.70120).

Sanroque-Muñoz M, Garcia SG, Pan L, Clos-Sansalvador M, Font-Morón M, Botella-García J, Loscos-Arenas J, Borràs FE. **Tear-derived extracellular vesicles as diagnostic biomarkers for ocular and neurodegenerative diseases: opportunities and challenges.** *Extracell Vesicles Circ Nucl Acids.* 2025 Sep 30;6(3):609-625. DOI: [10.20517/evc-na.2025.72](https://doi.org/10.20517/evc-na.2025.72).

Research Group on Sarcopenia, Frailty and Dependency (GRESFD)



Group leader: Mateu Serra Prat



Research lines

- Evaluation of the pathophysiology and risk factors of sarcopenia, frailty and functional decline in the elderly
- Evaluation of the effectiveness and safety of multimodal interventions aimed at preventing and/or reversing frailty and disability in the elderly
- Assessment of the impact of frailty on the health and quality of life and assessment of the economic impact of frailty
- Development and validation of electronic and automatic instruments for mass screening of frailty and/or disability to generate information at population level useful for health planning and management

Featured publications

Torra-Ferrer N, Duh MM, Grau-Ortega Q, Cañadas-Gómez D, Moreno-Vedia J, Riera-Marín M, Aliaga-Lavrijsen M, Serra-Prat M, García López J, González-Ballester MÁ, Fernán-

dez-Planas MT, Rodríguez-Comas J. **Machine Learning-Driven Radiomics Analysis for Distinguishing Mucinous and Non-Mucinous Pancreatic Cystic Lesions: A Multi-centric Study.** *J Imaging*. 2025 Feb 20;11(3):68. DOI: [10.3390/jimaging11030068](https://doi.org/10.3390/jimaging11030068).

Serra-Prat M, Fortuny Borsot A, Burdoy E, Lavado Cuevas À, Muñoz Ortiz L, Cabré M. **Frailty reversal and its main determinants: a population-based observational and longitudinal study.** *Fam Med Community Health*. 2025 Apr 28;13(2):e003250. DOI: [10.1136/fmch-2024-003250](https://doi.org/10.1136/fmch-2024-003250).

Serra-Prat M, Lorenzo I, Martínez J, Palomera E, Cuquet M, Ferrer P, Pleguezuelos E. **Effect of small variations in hydration status due to 12-hour fasting on lower limb muscle function in middle-aged adults.** *Phys Act Nutr*. 2025 Sep;29(3):33-39. DOI: [10.20463/pan.2025.0023](https://doi.org/10.20463/pan.2025.0023).

Highlights

In 2025, the group made significant progress in research, generating results that provide new insights into the dynamics of frailty and its potential reversibility. The findings indicate that approximately 5% of frail or pre-frail individuals may revert to a non-frail state within one year without any specific intervention. This reversibility is more frequent in men and decreases with age, while it remains very unlikely in individuals with multimorbidity, polypharmacy and/or severe frailty or functional dependence.

These results also show that the later the intervention takes place, the more difficult it becomes to reverse frailty, underlining the importance of early action. In this context, key factors with the greatest impact on frailty reversal include unplanned hospitalisations, polypharmacy, accidental falls and physical pain. Overall, this body of work provides a solid basis for the development of more targeted, effective and cost-efficient frailty screening programs and interventions.

Research in Kidney Affecting Diseases Group (REMAR)



Group leaders: Jordi Bover Sanjuán, Marcel·la Franquesa Bartolomé



Research lines

- Novel therapeutic approaches in experimental kidney disease
- Non-invasive biomarkers
- Cardiorenal syndrome
- Point-of-Care Ultrasound (POCUS)
- MONIK study
- Chronic Kidney Disease - Mineral and Bone Disorder (CKD-MBD) and CKD associated-osteoporosis

Featured publications

Clos-Sansalvador M, Garcia SG, Rodríguez-Martínez P, Sanroque-Muñoz M, Font-Morón M, Grange C, Bussolati B, Franquesa M, Juega J, Borràs FE. **Proteomics of Urinary Ex-**

tracellular Vesicles Highlight the Involvement of Vitronectin and the Fibrinolytic and TNF Pathways as Mechanisms Underlying Renal Fibrosis in Kidney Transplant Patients. *J Extracell Biol.* 2025 Jun 2;4(6):e70056. DOI: [10.1002/jex2.70056](https://doi.org/10.1002/jex2.70056).

Troya MI, Bover J, Cia Hidalgo A, Malumbres S, Sánchez-Bayá M, Massó E, Coll-Brito V, Anton-Pampols P, da Silva I, Soler-Majoral J, Marcos E, Moreiras Abril B, Pérez-León N, Morera García M, Golf Zaragoza JP, Jusmet Miguel X, Lejardi Estevez Y, López-Alarcón R, Blanco I, Morales Indiano C, Gràcia-Garcia S, Buño Soto A, Górriz JL, Buades JM, Ortiz A, Sánchez E, Ara J. **The importance of disease coding following the diagnosis of chronic kidney disease: From ICD-10 code N18.9 to the role of clinical laboratories.** *Nefrologia (Engl Ed).* 2025 Nov;45(9):501410. DOI: [10.1016/j.nefro.2025.501410](https://doi.org/10.1016/j.nefro.2025.501410).

Garcia-Lahosa A, Moreno-Millán S, Sanchez-García MC, Sanchez-Cardenas M, Steiss C, Escobar WJ, Nuñez-Moral M, Soler-Majoral J, Graterol Torres F, Ara J, Bover J, Sánchez-Alvarez JE, Husain-Syed F, Koratala A, Romero-González G, Fernández-Delgado S, Rodríguez-Chitiva N, Marcos-Ballesteros E. **Point-of-Care Ultrasonography in Advanced Nephrology Nursing Practice: Seeing Beyond the Numbers.** *Diagnostics (Basel).* 2025 Dec 14;15(24):3196. DOI: [10.3390/diagnostics15243196](https://doi.org/10.3390/diagnostics15243196)

Highlights

In 2025, the research group and the Germans Trias i Pujol University Hospital's Nephrology Department in general consolidated its position as a leading centre in cardiorenal syndrome, diabetes and hypertension, following its designation in 2024 as a centre of excellence by the Sociedad Española de Nefrología (S.E.N.), one of only two such centres in Spain. This year, the Cardiorenal Unit was also certified as SEC-Excelente by the Sociedad Española de Cardiología (SEC). In addition, the department renewed its ISO 9001:2015 certification for haemodialysis, remaining the only centre in Catalonia with this accreditation.

The team continued to demonstrate strong national and international leadership, particularly in the evaluation and management of chronic kidney disease (CKD), including advances in disease coding. This is reflected in the work led by the two program directors, Dr Gregorio Romero and Dr Iara da Silva, through activities such as the organisation of congress sessions and symposia, coordination of working groups (including GENDEREN), participation in clinical guidelines, and involvement in multicentre projects and collaborative publications. Collaboration with the Rheumatology Department was also strengthened, including the creation of a new CKD–osteoporosis committee, a grant application to the Sociedad Española de Reumatología, and joint publications, building on recognised expertise in CKD–mineral and bone disorders (CKD-MBD).

The group organised multiple educational and dissemination activities, including events linked to World Kidney Day and the “II Jornada d’abordatge integral de les complicacions de la MRC (ETC2)”, as well as the “I Jornada de la Infermeria en la promoció de la salut renal comunitària”. These initiatives were complemented by broader engagement at Catalan, national and international levels in areas such as POCUS, CKD-MBD and the GENDEREN initiative.

The team also played an active role in strategic and innovation projects within the Hospital. The CODI-AKI project was presented at the Think and Health Value initiative (Santander), where it was selected for the Value Radar programme. The project “Sacsejar l’hemodiàlisi” received the second prize at Can Ruti INNOVA, including a training stay in Manchester-Leeds, and the Hemoshake project was selected as a finalist in the Innomed GrowInn 2025 competition.

A new strategic plan (M.A.N./BADALOMINGHAM) was launched to improve nephrology care for chronic kidney disease in collaboration with Primary Care in

the Barcelonès Nord and Maresme area. This plan includes the implementation of new diagnostic and treatment pathways, improved disease coding, and optimisation of variables aimed at slowing CKD progression and improving patient outcomes.

In parallel, the PRESERVA project (Prevención Renal y Seguimiento integral a tiempo real de variables relacionadas) was awarded the third national prize by Boehringer Ingelheim and supported a multidisciplinary national publication on CKD coding in collaboration with the Clinical Laboratory Department. It also contributed to the PREEDIT-CKD proposal within the European PRECISEU initiative on personalised medicine ecosystems under the Horizon Europe programme. The department also participated in the “Second recognition programme for efficiency in the management of chronic diseases in Catalonia”.

Ongoing projects include CODI-AKI (Acute Kidney Injury) and IMPACT-OS (impact microindentation for osteoporosis), both supported through philanthropic funding, as well as collaboration with the Immunology Department on a project focused on immunomonitoring in kidney transplantation. In addition, Dr Javier Juega collaborated with the Computer Vision Centre (CVC) on a funded research project.

Finally, the department strengthened its clinical research infrastructure with the establishment of a dedicated clinical studies coordination structure, incorporating Laia Valls and, more recently, Marina Gómez. This team is leading patient recruitment in Spain for several studies, including participation in the CAPTIVATE platform (CKD Adaptive Platform Trial Investigating Various Agents for Therapeutic Effect), in collaboration with partners in Australia.

Immunology and Inflammation

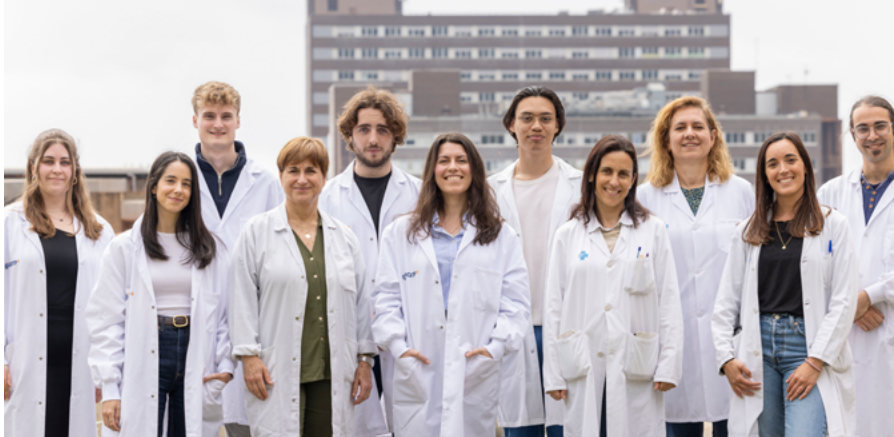
Immunology of Diabetes

Marta Vives-Pi

Immunopathology

Eva M^a Martínez Cáceres

Immunology of Diabetes



Group leader: Marta Vives-Pi



Research lines

- Immunotherapies for the prevention and treatment of T1D
- Antigen-specific tolerance induction
- Spontaneous remission of T1D
- Biomarkers of immunoregulation

Featured publications

Barneda-Zahonero B, Almenara-Fuentes L, Perna-Barrull D, Vives-Pi M. **Toward a cure for type 1 diabetes: the innovative potential of Phosphatidylserine-rich liposomes.** *Nanomedicine (Lond)*. 2025 May;20(10):1077-1079. DOI: [10.1080/17435889.2025.2473872](https://doi.org/10.1080/17435889.2025.2473872).

Gomez-Muñoz L, Perna-Barrull D, Ventura PS, Valls A, Castiello F, Vives-Pi M, Muriello-Vallés M. **Identification of Peripheral Blood Endotypes Associated With Age**

in Pediatric Type 1 Diabetes. *Pediatr Diabetes*. 2025 Sep 27;2025:5512196. DOI: [10.1155/pedi/5512196](https://doi.org/10.1155/pedi/5512196).

Highlights

During 2025, the group continued to advance its translational research program in type 1 diabetes (T1D) and other autoimmune diseases, with a strong focus on immunopathogenesis, biomarker discovery, and the development of antigen-specific immunotherapies. Close integration between basic and clinical research was maintained, reinforcing patient-oriented approaches and further consolidating national and international collaborations. In parallel, David Perna-Barrull continued to strengthen his leadership role within the group, gradually taking on responsibilities associated with a group leader.

A major milestone in 2025 was the award and initiation of three new competitive projects, reflecting the consolidation of three complementary research lines:

- Immunomonitoring of T1D: Evaluation of the immunological impact of continuous insulin infusion systems as a strategy to modulate autoimmunity in T1D.
- Immunofavourable stages in T1D: Identification of stages of partial autoimmune remission to refine the timing and efficacy of antigen-specific immunotherapies.
- Beneficial effects of exercise on autoimmunity: Defining the immunomodulatory effects of physical exercise to inform innovative non-pharmacological strategies for autoimmune disease management.

Immunopathology



Group leader: Eva M^a Martínez Cáceres



Research lines

- Innovation and diagnostic immunology
- Research in clinical epidemiology
- Immune therapies inducing tolerance
- Therapy with tolerogenic dendritic cells
- Cellular immunotherapy with antigen-specific regulatory T cells (Tregs)

Featured publications

Casas-Parra A, Veltman H, Romero-Caballero A, Gelpi-Remiro R, Boigues-Pons M, Allalou I, Linares-Pardo I, Vila-Santandreu A, Martínez-Cáceres E, Iglesias-Escudero M. **Comparison of four different assays to evaluate cellular-mediated immunity against cytomegalovirus in solid organ transplantation.** *Front Immunol.* 2025 May 16;16:1567253. DOI: [10.3389/fimmu.2025.1567253](https://doi.org/10.3389/fimmu.2025.1567253).

Violán C, Quirant-Sánchez B, Palau-Antoja M, Palacin D, Pradenas E, Trigueros M, Pera G, Molist G, Fernández-Rivas G, Boigués M, Isnard M, Prat N, Carmona-Cervelló M, Lamonja-Vicente N, León-Gómez BB, Martínez-Cáceres EM, Cardona PJ, Blanco J, Massanella M, Torán-Monserrat P. **Immune Durability and Breakthrough Infections 15 Months After SARS-CoV-2 Boosters in People over 65: The IMMERSION Study.** *Vaccines (Basel).* 2025 Jul 9;13(7):738. DOI: [10.3390/vaccines13070738](https://doi.org/10.3390/vaccines13070738).

Arias N, Boigues M, Ispuerto L, Vilas D, Linares-Pardo I, Álvarez R, Pastor P, Fernandez-Sanmartín MA, Martínez-Cáceres E, Beyer K. **Platelet and immune cell crosstalk in dementia with Lewy bodies: Is there a unique inflammatory profile?** *J Neuroimmunol.* 2025 Sep 15;406:578668. DOI: [10.1016/j.jneuroim.2025.578668](https://doi.org/10.1016/j.jneuroim.2025.578668).

Highlights

In 2025, the Immunopathology group received several recognitions for research excellence. Federico Fondelli was awarded the Prize for Best Research Article in Health Sciences by Institut Català de la Salut, as well as the IV National “Esperanza” Award for Multiple Sclerosis Research (ADEMTO) and the Best Publication from a Young Researcher by the Catalan Society of Immunology. In addition, Javier Villaceros Álvarez received the Luis Simarro Award for Best PhD Thesis in Neurosciences, granted by the Asociación Madrileña de Neurología.

Infectious Diseases

Clinical and Environmental Infectious Diseases Study Group (CEID)

Maria Luisa Pedro Botet

Noemí Párraga Niño

Clinical and Experimental Microbiology Unit (UMCiE)

Pere-Joan Cardona Iglesias

Experimental Tuberculosis Unit (UTE)

Cristina Vilaplana Massaguer

Innovation in Respiratory Infections and Tuberculosis

José Domínguez Benítez

Pathogen Diagnostics and Genomic Epidemiology (DxEpiPath)

Elisa Martró Català

Plasmodium vivax and Exosome Research Group (PvREX)

Hernando A. del Portillo

Carmen Fernández Becerra

Clinical and Environmental Infectious Diseases Study Group (CEID)



Group leaders: Maria Luisa Pedro Botet, Noemí Párraga Niño

Research lines

- *Legionella*
- Nosocomial pneumonia outside the ICU
- Intestinal microbiota
- Immunocompromised Unit
- Community-acquired pneumonia
- One Health



Featured publications

Díez de Los Ríos J, Navarro M, Serra-Pladevall J, Molinos S, Puigoriol E, Párraga-Niño N, Pedemonte-Parramón G, Pedro-Botet L, Mascaró Ó, Reynaga E. **Clinical and Epidemiological Characteristics of *Staphylococcus caprae* Infections in Catalonia, Spain.** *Microorganisms*. 2025 Jan 1;13(1):53. DOI: [10.3390/microorganisms13010053](https://doi.org/10.3390/microorganisms13010053).

Sopena N, Larrosa N, Castella L, Padilla E, Smithson A, Lopez M, Almendral A, Limón E, Pujol M; VINCat Programme. **Surveillance of MRSA, ESBL-producing *Klebsiella pneumoniae*, carbapenem-resistant Enterobacteriaceae, and *Clostridioides difficile* in Catalan Hospitals: Findings from the VINCat Program.** *Enferm Infecc Microbiol Clin (Engl Ed)*. 2025 May;43 Suppl 1:S60-S68. DOI: [10.1016/j.eimce.2025.02.013](https://doi.org/10.1016/j.eimce.2025.02.013).

Díez de Los Ríos J, Párraga-Niño N, Navarro M, Serra-Pladevall J, Vilamala A, Arqué E, Baldà M, Blanco TN, Pedro-Botet L, Mascaró Ó, Reynaga E. **Environmental Dispersion of Multiresistant Enterobacteriaceae in Aquatic Ecosystems in an Area of Spain with a High Density of Pig Farming.** *Antibiotics (Basel)*. 2025 Jul 25;14(8):753. DOI: [10.3390/antibiotics14080753](https://doi.org/10.3390/antibiotics14080753).

Highlights

In 2025, the group was awarded funding from Fundació La Marató de 3CAT for the project “Legionnaires’ disease in Catalonia: Intervention study on diagnostic methodology”, led by Noemí Párraga-Niño, with a total budget of €139,158 (2026–2029).

The group also contributed to international scientific dissemination through two oral communications at the 9th Meeting of the ESCMID Study Group for Legionella Infections (ESGLI), held in Italy. These presentations addressed the impact of meteorological factors on Legionella colonisation of water systems and disease incidence (Elisenda Arqué; Sonia Ragull; Daniel Villodres-Moreno; Adrià Alsina-Samaniego; et al; Noemí Párraga-Niño), and the use and efficacy of diagnostic techniques in legionellosis (Noemí Párraga-Niño; Adrià Antuori; Cristina Cassany; et al; Luisa Pedro-Botet).

Research group overview

Clinical and Experimental Microbiology Unit (UMCiE)



Group leader: *Pere-Joan Cardona Iglesias*



Research lines

- SARS-CoV-2
- Viral hepatitis (B and C)
- Genomic Epidemiology of *Mycobacterium tuberculosis* Complex (MTBC)
- Study of *M. tuberculosis* virulence
- Control of environmental mycobacteria outbreaks
- Molecular epidemiology of syphilis
- Study of quinolone resistance mechanisms in *Mycoplasma genitalium*
- Determination of pAmpC plasmid in sepsis
- Diagnosis of meningitis
- Interaction between *Pseudomonas aeruginosa* and *Staphylococcus aureus*

- Impact of faecal microbiota on the selection of multiresistance
- Study of the dissemination of multidrug-resistant bacteria

Featured publications

Panisello Yagüe D, Pelegrin AC, Soler L, Bordoy AE, Martínez-Puchol S, Clarà G, González-Gómez S, de León AP, Noguera-Julian M, Armengol MP, Francino O, Casañ C, Casas I, Cardona PJ, Giménez M, Blanco I, Saludes V, Martró E. **Evaluation of two SARS-CoV-2 whole genome amplification and sequencing workflows for genomic surveillance and outbreak analysis in the clinical microbiology laboratory.** *Genomics*. 2025 Sep;117(5):111077. DOI: [10.1016/j.ygeno.2025.111077](https://doi.org/10.1016/j.ygeno.2025.111077).

Sivakumar N, Fuentes E, Selvik LK, Arch M, Ås CG, Cardona PJ, Iøerger TR, Dragset MS. **Genome-wide phenotypic insights into mycobacterial virulence using *Drosophila melanogaster*.** *PLoS Pathog*. 2025 Sep 5;21(9):e1013474. DOI: [10.1371/journal.ppat.1013474](https://doi.org/10.1371/journal.ppat.1013474).

Wang-Wang JH, Soler L, Martró E, Clarà G, Hidalgo J, Casas I, García-Quesada MJ, Giménez M, Saludes V, Bordoy AE, Cardona PJ. **Rapid Detection of VREfm Clusters: FTIR Spectroscopy as a Practical Alternative to Whole-Genome Sequencing.** *Open Forum Infect Dis*. 2025 Nov 24;12(12):ofaf718. DOI: [10.1093/ofid/ofaf718](https://doi.org/10.1093/ofid/ofaf718).

Highlights

In the clinical domain, the group pioneered a cost-effective “3-in-1” sampling strategy for the screening of sexually transmitted infections in asymptomatic individuals, achieving a threefold reduction in diagnostic costs while maintaining clinical reliability. In parallel, it expanded the application of Fourier-transform infrared (FTIR) spectroscopy for the characterisation of multidrug-resistant bacteria, including *Enterococcus spp.*, and for high-resolution strain typing of *Streptococcus pneumoniae* and *Salmonella spp.*, thereby strengthening rapid diagnostic and surveillance capabilities.

The group is consolidating its leadership in the genomic epidemiology of tuberculosis in Catalonia by identifying transmission hotspots associated with active dissemination, thus informing targeted public health interventions. At the European level, it contributes to the analysis and evolutionary tracking of a multi-country cluster of *Mycobacterium tuberculosis* (Mtb) lineage S/215/Beijing 2.2.1 reported between 2021 and 2025. In recognition of its expertise, the group was awarded competitive funding from Fundació La Marató de 3CAT to develop accelerated genomic characterisation strategies for Mtb strains (Project FastTB-SEQ), aimed at improving real-time surveillance and clinical decision-making.

In the field of experimental modelling, the group plays a key role within the European consortium ITHMYC, where it leverages *Drosophila* and murine infection models to identify and prioritise novel therapeutic candidates for tuberculosis. In addition, the team is advancing innovative immunotherapeutic approaches through participation in the Pathfinder project Nanobicar, focused on the development of next-generation bispecific T-cell engagers.

Experimental Tuberculosis Unit (UTE)



Group leader: *Cristina Vilaplana Massaguer*



Research lines

- Study of biomarkers and tools for monitoring TB disease course and prognosis
- Evaluation of new prophylactic and therapeutic strategies against TB
- Study of health dimensions and quality of life in the context of infectious diseases

Featured publications

Fonseca KL, Lozano JJ, Despuig A, Habgood-Coote D, Sidorova J, Aznar D, Arias L, Del Río-Álvarez Á, Carrillo-Reixach J, Goff A, Wildner LM, Gogishvili S, Nikolaishvili K, Shubladze N, Avaliani Z, Tapia G, Rodríguez-Martínez P, Cardona PJ, Martínón-Torres F, Salas A, Gómez-Carballa A, Armengol C, Waddell SJ, Kaforou M, O'Garra A, Vashakidze S, Vilaplana C. **Unravelling the transcriptome of the human tuberculosis lesion and its clinical implications.** *Nat Commun.* 2025 May 30;16(1):5028. DOI: [10.1038/s41467-025-60255-w](https://doi.org/10.1038/s41467-025-60255-w).

Buisan O, Servian P, Pedreño-Lopez S, Pagès J, Urrea V, Martínez R, Garcia E, Cardona PJ, Vilaplana C, Amat M, Areal J, Bellmunt J, Clotet B, Cabrera C. **A Novel Heterologous Prime-boost Strategy Using RUTI Vaccine to Improve the Bacillus Calmette-Guérin Response in Non-muscle-invasive Bladder Cancer Patients: Phase 1 RUTIVAC-1 Trial.** *Eur Urol.* 2026 Feb;89(2):114-120. DOI: [10.1016/j.eururo.2025.08.014](https://doi.org/10.1016/j.eururo.2025.08.014).

Innovation in Respiratory Infections and Tuberculosis



Group leader: José Domínguez Benítez



Research lines

- Microbial interactions
- Immune response characterisation
- Impact of external factors
- Diagnostic technology innovation
- New therapeutic approaches
- Post-Tuberculosis Lung Diseases (PTLD)
- Climate change and tuberculosis

Featured publications

Sester, M., Altet-Gómez N, Andersen, A., Arias, M., Avasar, K., Bakken Kran, A.-M., Bothamley, G. Nordholm AC, Brown, J., Chesov, D., Ciobanu, N., Cirillo, D.M., Crudu, V., de Souza Galvao, M., Dilektasli, A.G., Dominguez, J., Duarte, R., Dyrhol Riise, A.M., Goletti, D., Hoffmann, H., Ibraim, E., Kalsdorf, B., Krawczyk, M., Kunst, H., Lange, B., Lipman, M., Matteelli, A., Milkiewicz, P., Neyer, D., Nitschke N., Oral, B., Palacios, J.J., Petruccioli, E., Raszeja-Wyszomirska, J., Ravn, P., Rupp J., Spohn, H.-E., Toader, C., Villar-Hernandez R., Wagner, D., van Leth, F., Martinez, L., Skouvig Pedersen, O. and Lange, C. **Diagnostic accuracy and predictive value of the QuantiFERON-TB gold plus assay for tuberculosis in immunocompromised individuals: a prospective TBnet study.** *The Lancet Reg Health Eur.* 2025. 2025 Aug 6:57:101416. DOI: [10.1016/j.lanepe.2025.101416](https://doi.org/10.1016/j.lanepe.2025.101416).

Comella-Del-Barrio P, Rodríguez I, Bimba JS, Osazuwa O, Alaran R, Alonso-Moreno P, Blasco-Iturri Z, Miguel-Coello AB, Cuevas LE, Ruiz-Cabello J, Izquierdo-Garcia JL, Domínguez J. **Benchtop NMR urine metabolomics for diagnosing pulmonary tuberculosis.** *Sci Rep.* 2025 Nov 19;15(1):40881. DOI: [10.1038/s41598-025-24714-0](https://doi.org/10.1038/s41598-025-24714-0).

Romero-Andrada I, Hernández-Bonilla A, Domínguez J, Lacoma A. **What is the micro- and nanoplastics impact on pathogenic microorganisms?** *Front Microbiol.* 2025 Dec 8;16:1718190. DOI: [10.3389/fmicb.2025.1718190](https://doi.org/10.3389/fmicb.2025.1718190).

Highlights

In 2025, the group published five papers in international peer-reviewed journals, some of them in collaboration with international partners.

The ADVANCE-TB COST Action network was consolidated. The consortium, chaired by Dr Alícia Lacoma, is currently constituted by 250 members from 47 countries. In the frame of ADVANCE-TB, the team created a clinical study network involving clinical sites from 25 European countries (from Balkans, Eastern, Eurasia, Central and Baltic countries) and 10 members and collaborators from Africa, Asia, Caribbean and South America. In September 2025, a joint meeting between ADVANCE-TB and TB-SPECTRUM was successfully held at IGTP, bringing together more than 50 professionals from different countries.

The group secured funding from EU Staff Exchanges, Instituto de Salud Carlos III and La Marató de 3CAT to study the different stages of the tuberculosis spectrum, from infection to the end of treatment. These projects are led by Dr Irene Latorre. In addition, the group received funding from the Ministry of Science through the Public-Private Partnership call to develop metabolomics approaches for tuberculosis diagnosis (PI: Dr José Domínguez).

In January, the group, with the support of Fundació Autònoma Solidària and ADVANCE-TB, organised a workshop on tuberculosis management in Abuja (Nigeria) and launched an ambitious project aimed at promoting and consolidating the diagnosis of tuberculosis infection in children using in vitro diagnostic tests.

Guillem Safont (PhD student) successfully defended his doctoral thesis in December, obtaining an international mention. The thesis, supervised by Dr Domínguez and Dr Latorre, focused on the characterisation of the immune response to SARS-CoV-2 in humans.

Finally, Iris Romero was awarded a predoctoral grant from Instituto de Salud Carlos III to develop her PhD on the impact of micro- and nanoplastics on respiratory infections.

Pathogen Diagnostics and Genomic Epidemiology (DxEpiPath)



Group leader: Elisa Martró Català



Research lines

- Viral hepatitis
 - Hepatitis C
 - Hepatitis B
- Molecular diagnostics and genomic epidemiology of other infectious diseases
 - Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
 - Tuberculosis (TB)
 - Antimicrobial resistant bacteria
 - Sexually Transmitted Infections (STI)
 - Applications of 16S gene sequencing for molecular microbiological diagnosis of complex infections and for characterising the microbiota associated with different diseases

Featured publications

Not A, Ouaarab-Essadek H, Montoro M, Treviño B, Buti M, Morillas RM, Bordoy AE, Folch C, Majó X, Casabona J, Prat JGI, Martró E. **Hepatitis B and C Screening and Linkage to Care in Migrants From Endemic Countries in Barcelona Through a Community Action.** *Liver Int.* 2025 Jun;45(6):e70126. DOI: [10.1111/liv.70126](https://doi.org/10.1111/liv.70126).

Panisello Yagüe D, Pelegrin AC, Soler L, Bordoy AE, Martínez-Puchol S, Clarà G, González-Gómez S, de León AP, Noguera-Julian M, Armengol MP, Francino O, Casañ C, Casas I, Cardona PJ, Giménez M, Blanco I, Saludes V, Martró E. **Evaluation of two SARS-CoV-2 whole genome amplification and sequencing workflows for genomic surveillance and outbreak analysis in the clinical microbiology laboratory.** *Genomics.* 2025 Sep;117(5):111077. DOI: [10.1016/j.ygeno.2025.111077](https://doi.org/10.1016/j.ygeno.2025.111077).

Wang-Wang JH, Soler L, Martró E, Clarà G, Hidalgo J, Casas I, García-Quesada MJ, Giménez M, Saludes V, Bordoy AE, Cardona PJ. **Rapid Detection of VREfm Clusters: FTIR Spectroscopy as a Practical Alternative to Whole-Genome Sequencing.** *Open Forum Infect Dis.* 2025 Nov 24;12(12):ofaf718. DOI: [10.1093/ofid/ofaf718](https://doi.org/10.1093/ofid/ofaf718).

Highlights

The group promoted micro-elimination strategies for viral hepatitis B and C in vulnerable populations through collaborations with research groups, CEEIS-CAT epidemiologists, civil society organisations and the Public Health Agency of Catalonia. This work has improved access to diagnosis and treatment and contributed to understanding the local epidemiology of these infections.

In 2025, a newly funded project led by Elisa Martró supported a Master's thesis and the recruitment of a predoctoral researcher. Dr Martró also contributed to HBV and HCV screening initiatives at the Emergency Department of Germans Trias i Pujol University Hospital through the FOCUS program, and participated in national and European initiatives on hepatitis screening, migrant health and communicable disease prevention. In parallel, she leads an innovative project developing a decentralised strategy for active tuberculosis case finding integrated into viral hepatitis and HIV/STI screening programmes for vulnerable populations. In May, she was appointed Principal Investigator of Group 27 within CIBERESP (Instituto de Salud Carlos III), where she has been a member since 2007. The group forms part of the EPICET program and has contributed to the establishment of the CORE Public Health and Primary Care Program at IGTP, where Dr Martró co-coordinates the Population and Molecular Biology Working Group.

The group also specialises in genomic epidemiology and pathogen surveillance, translating whole genome sequencing data into actionable information for outbreak management and public health surveillance through direct collaboration with hospital and regional epidemiological surveillance teams. Since 2020, the team has been actively involved in SARS-CoV-2 genomic sequencing

and phylogenetic analysis of outbreaks, participating in European initiatives on genomic surveillance and vaccine effectiveness, including RELECOV2.0 and Id. DRIVE. Research activity has also expanded into the genomic epidemiology of multidrug-resistant bacteria and antimicrobial resistance surveillance through participation in regional and national networks such as SIVEM, RedLabRA and Conexión AMR.

In tuberculosis research, the group contributes to the TB-SEQ strategy, a population-based multicentre study of the genomic epidemiology of *Mycobacterium tuberculosis* complex strains circulating in Catalonia, integrated into the regional tuberculosis prevention and control programme since 2022. The initiative resulted in a Master's thesis in Omics Data Analysis and a publication in *Frontiers in Microbiology*. Since 2024, members of the group have also participated in the ASPCAT Expert Group in Genomic Epidemiology Applied to Public Health, contributing genomic data to support transmission control strategies.

***Plasmodium vivax* and Exosome Research Group (PvREX)**



Group leaders: *Hernando A. del Portillo, Carmen Fernández Becerra*



Research lines

- Exosome-mediated mechanisms of non-hypnozoite cryptic infections in *P. vivax* malaria
- Reticulocyte-derived exosomes (Rex) vaccines against *P. vivax*
- Hypnozoite biomarker discovery
- Functional analysis of subtelomeric variant genes
- Extracellular vesicles (EVs) as potential new biomarkers in parasitic infections
- Deciphering the role of the spleen in cryptic *P. vivax* infections through spatial and single-cell analysis

Featured publications

Sima N, Ayllon-Hermida A, Fernández-Becerra C, Del Portillo HA. **Extracellular vesicles in malaria: proteomics insights, in vitro and in vivo studies indicate the need for transitioning to natural human infections.** *mBio*. 2025 Mar 12;16(3):e0230424. DOI: [10.1128/mbio.02304-24](https://doi.org/10.1128/mbio.02304-24).

Costa I, Pinto AI, Esteves S, Caldas C, Osório H, Santarém N, Fernandez-Becerra C, Cordeiro-da-Silva A. **Proteomic Profiling Identifies MARCO in Extracellular Vesicles, as a Potential Biomarker for Leishmaniasis in HIV Co-Infection.** *Int J Mol Sci*. 2025 Jun 13;26(12):5691. DOI: [10.3390/ijms26125691](https://doi.org/10.3390/ijms26125691).

Caires HR, Castillo-Fernández Ó, Sima N, Magalhães MV, Benavent-Claró A, Masó-Castro N, Roobsoong W, Fernandez-Becerra C, Hernández-Machado A, Del Portillo HA, Barrias CC. **Advancing Organ-on-Chip Models With a Sacrificial Granular Hydrogel Strategy for Enhanced Permeability and Biomimicry.** *Small Methods*. 2025 Dec;9(12):e00652. DOI: [10.1002/smt.202500652](https://doi.org/10.1002/smt.202500652).

Highlights

During 2025, the group achieved several advances across its main research lines. These included the development of a microfluidic human bone marrow organ-on-chip model incorporating primitive vascularisation, as well as a meta-analysis of proteomic studies on extracellular vesicles, which highlighted the substantial variability of results obtained from in vitro cultures and underscored the need to prioritise studies using vesicles directly isolated from patients. The group also established single-cell RNA sequencing approaches to analyse exosome-mediated cellular signalling in human bone marrow using organ-on-chip systems, alongside spatial transcriptomics studies of the human spleen. In addition, new isolation methodologies were implemented for the proteomic analysis of extracellular vesicles derived from human plasma and other biofluids.

The team was actively involved in international scientific events as invited speakers. Carmen Fernández-Becerra and Hernando A. del Portillo presented their work on extracellular vesicles in parasitic infections at several high-level meetings, including the 9th International Conference on Plasmodium vivax Research (February, Puducherry, India), where Dr del Portillo also chaired a session; the International Society for Extracellular Vesicles (ISEV) Annual Meeting (April, Vienna, Austria); the Gordon Research Conference on Malaria (May, Castelldefels, Spain); an international conference on extracellular vesicles in parasitic infections (August, Montería, Colombia); the EVs in Immunity meeting (November, Athens, Greece); and the PATH Symposium on Next Generation Malaria Diagnostics at the American Society of Tropical Medicine and Hygiene (November, Toronto, Canada). These activities reflect the group's strong international presence and leadership in the study of extracellular vesicles in infectious diseases.

Medical Complications and Clinical Pharmacology of Substance Use Disorder

Clinical Pharmacology of Substance Use Disorder

Magí Farré Albaladejo

Medical Complications of Substance Use Disorder

Robert Muga Bustamante

Daniel Fuster Martí

Clinical Pharmacology of Substance Use Disorder



Group leader: Magí Farré Albaladejo



Research lines

- Evaluation of the acute effects and pharmacokinetics of new psychoactive substances (synthetic cathinones such as methylone, pyrovalerone derivatives, and others), and classical psychostimulants (MDMA, amphetamines and cocaine) in humans
- Evaluation of the acute effects of binge alcohol consumption in young people and its combination with other substances (cannabis, energy drinks) in humans
- Evaluation of the effects and pharmacokinetics of natural, semisynthetic and synthetic cannabinoids, including cannabis and its components (different compositions of THC/CBD) in humans, and their therapeutic use (medicinal cannabis) in humans
- Pharmacogenomics and substance use, including drugs of abuse and medicines, with a focus on the influence of genetic polymorphisms on drug effects and pharmacokinetics, as well as gender differences

- Therapeutic use of psychedelic substances, including the use of ayahuasca in severe grief

Featured publications

Núñez-Montero M, Pérez-Mañá C, Hladun O, Poyatos L, Caicedo DA, De la Rosa G, Argote MC, Martín S, Ventura M, Maida N, Di Trana A, Graziano S, Pichini S, Farré M, Papaseit E. **Acute Pharmacological Effects of Two Synthetic Cathinones in Humans: An Observational Study of N-Ethylhexedrone and N-Ethyl-nor-pentadrone.** *Pharmaceuticals (Basel)*. 2025 May 14;18(5):721. DOI: [10.3390/ph18050721](https://doi.org/10.3390/ph18050721).

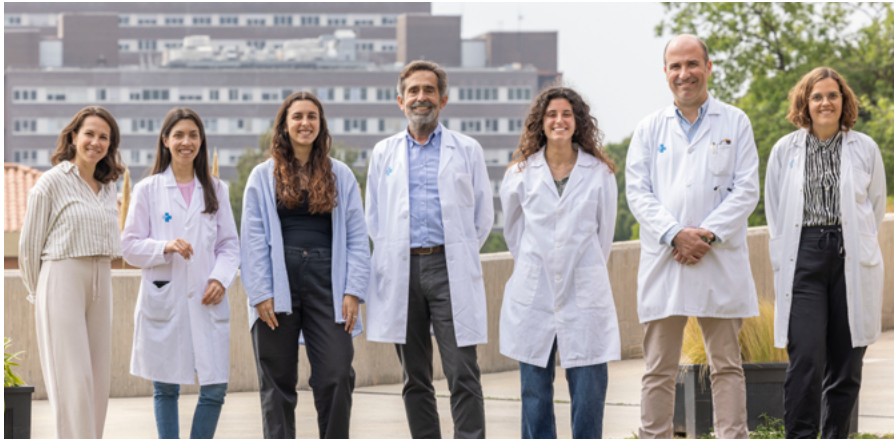
De la Rosa G, Papaseit E, Hladun O, Poyatos L, Caicedo DA, Argote MC, Martín S, Ventura M, La Maida N, Di Trana A, Graziano S, Pichini S, Farré M, Pérez-Mañá C. **Acute pharmacological effects of α -PVP in humans: a naturalistic observational study.** *Front Pharmacol*. 2025 Jul 2;16:1626692. DOI: [10.3389/fphar.2025.1626692](https://doi.org/10.3389/fphar.2025.1626692).

Poyatos L, Núñez-Montero M, Hladun O, Rosa G, Martín S, Videla S, Martínez-Couselo S, Ventura M, La Maida N, Trana AD, Busardò FP, Torrens M, Pichini S, Pérez-Mañá C, Farré M, Papaseit E. **Oral Fluid Concentrations and Pharmacological Effects of Clephedrone and Methylone in Humans.** *Int J Mol Sci*. 2025 Dec 21;27(1):89. DOI: [10.3390/ijms27010089](https://doi.org/10.3390/ijms27010089).

Highlights

The group's main scientific contribution was advancing the understanding of the metabolic profiles of emerging synthetic cathinones in humans. The study characterised the acute effects and metabolic pathways of substances such as clephedrone (4-CMC), N-ethylhexedrone, N-ethylpentadron and α -PVP under controlled conditions. These findings provide valuable reference data for the interpretation of biological samples from intoxicated individuals and for drug-driving analyses.

Medical Complications of Substance Use Disorder



Group leaders: Robert Muga Bustamante, Daniel Fuster Martí



Research lines

- Clinical consequences of Substance Use Disorder (SUD)
- Alcohol-associated morbidity and mortality
- Therapeutic interventions in Alcohol Use Disorder (AUD)
- Monitoring viral infections (HCV, HIV, HBV) in SUD
- Intestinal permeability and systemic inflammation in AUD
- Cardiometabolic alterations of AUD
- Alcohol-associated immune alterations

Featured publications

Zuluaga P, Zurera-Egea C, Fuster D, Hernandez-Rubio A, Teniente-Serra A, Martínez-Cáceres E, Muga R. **Changes in CD4+ T cells subsets in patients with alcohol-related cirrhosis.** *Clin Exp Med.* 2025 Jan 5;25(1):31. DOI: [10.1007/s10238-024-01548-0](https://doi.org/10.1007/s10238-024-01548-0).

Fuster D, So-Armah K, Cheng DM, Blokhina E, Patts G, Lioznov D, Gnatienko N, Long MT, Freiberg MS, Tindle H, Samet JH. **Is There an Association Between Cigarette Smoking and Advanced Liver Fibrosis in Smokers with HIV, Heavy Drinking and High Prevalence of HCV?** *J Clin Med.* 2025 Feb 11;14(4):1169. DOI: [10.3390/jcm14041169](https://doi.org/10.3390/jcm14041169).

Fuster D, Moreno C, Sanvisens A, Cabello-Clotet N, Gutiérrez F, Fanjul F, Bernal-Morell E, García García J, Reus Bañuls S, Jarrin I, Muga R; CoRIS Cohort. **Association Between Excessive Alcohol Consumption When Starting Antiretroviral Therapy and Long-term Mortality in People Living With HIV.** *J Addict Med.* 2025 Dec 3. DOI: [10.1097/ADM.0000000000001628](https://doi.org/10.1097/ADM.0000000000001628).

Highlights

In 2025, the group continued to strengthen its research activity and collaborations. The RICORS network (Red de Investigación Cooperativa Orientada a Resultados en Salud) – Red de Investigación en Atención Primaria de Adicciones (RIAPAd) was renewed for the 2025–2027 period by Instituto de Salud Carlos III. Within this Spanish network on substance use disorder research, the IGTP group leads a multicentric study on alcohol use disorder and plays a key role in the network, acting as principal investigators of three different work packages.

The group is also recognised as a consolidated research group by AGAUR (2021-SGR-00945), reinforcing its position within the Catalan research system.

The year was marked by notable academic and professional achievements. Dr Muga was promoted to Full Professor (Catedrático de Universidad) and Dr Fuster to Associate Professor (Profesor Titular de Universidad) at the Department of Medicine of the Universitat Autònoma de Barcelona. In addition, a junior faculty member, Dr Xavier García Calvo, successfully defended his PhD thesis under the supervision of Dr Fuster, obtaining the highest distinction (cum laude). Another junior member, Dr Anna Hernández-Rubio, was awarded a Río Hortega grant, supporting the development of early-career physician-scientists. The group also maintained strong training activity, with Dr Fuster currently supervising two PhD candidates focused on the medical consequences of substance use disorder, and Dr Zuluaga supervising a PhD project on the diagnosis of liver steatosis in primary care.

The group remained highly active in scientific dissemination and knowledge transfer. In 2025, its members presented four oral communications and participated in five invited sessions at national and international conferences, and published 21 articles in peer-reviewed medical journals. In addition, Dr Fuster and Dr Zuluaga co-directed the online course “I Curso Online sobre los Trastornos por Consumo de Sustancias Psicoactivas (SEMI-FEMI)”, sponsored by the Spanish Society of Internal Medicine and aimed at physicians in training.

Neuroscience

Badalona Neuromuscular Research Group (GRENBA)

Gisela Nogales Gadea

Mònica Suelves Esteban

Cellular and Molecular Neurobiology (CMN)

Teresa Gasull Dalmau

Octavi Martí Sistac

Genomics and Transcriptomics of Synucleinopathies (GTS)

Katrin Beyer

Neurogenetics Unit

Antoni Matilla Dueñas

Ivelisse Sánchez Díaz

Neurovascular Research Group

Mònica Millán Torné

Psychiatry and Mental Health

Psychoneuroendocrinology and Stress in Psychosis (PSICPNEC)

Javier Labad Arias

Badalona Neuromuscular Research Group (GRENBA)



Group leaders: Gisela Nogales Gadea, Mònica Suelves Esteban



Research lines

- Myotonic dystrophy type 1: registries, diagnosis, pathological mechanisms, phenotype modulation, biomarkers, and new therapies
- McArdle disease: registries, diagnosis, pathological mechanisms, phenotype modulation, biomarkers, and new therapies
- Duchenne muscular dystrophy: fibrosis, fatty deposition, inflammation, muscle regeneration, metabolism, HDAC11, new therapeutic targets
- Sarcopenia: muscle atrophy, stem cell exhaustion, mitochondrial dysfunction, metabolism, HDAC11, new therapeutic targets

Featured publications

Mané-Damas M, Saxena A, Nogales-Gadea G, Stevens J, Vincken S, van Beek M, van den Hoogen NJ, Joosten EAJ, Willcox N, Duimel H, Maessen JG, Molenaar PC, De Baets MH, Losen M, Martinez-Martinez P. **Efficacy of MLN9708 (ixazomib) in experimental autoimmune myasthenia gravis and in anti-AChR producing primary thymic cell cultures from myasthenia gravis patients.** *Front Immunol.* 2025 May 15;16:1521432. DOI: [10.3389/fimmu.2025.1521432](https://doi.org/10.3389/fimmu.2025.1521432).

López-Martínez A, Martín-González S, Torres-Conde N, Alcalá-Manso N, Al-Ani A, López de Munain A, Bigot A, Mamchaoui K, Nogales-Gadea G, Arechavala-Gomez V. **Characterization of DMPK and MBNL1 expression in cell models of myotonic dystrophy: a platform for drug screening.** *NAR Mol Med.* 2025 Jun 20;2(3):ugaf023. DOI: [10.1093/narmme/ugaf023](https://doi.org/10.1093/narmme/ugaf023).

Odria R, Cardús A, Gomis-Coloma C, Balanyà-Segura M, Mercado-Amarilla A, Maestre-Mora P, Poveda-Sabuco A, Domingo JC, Nogales-Gadea G, Gomez-Sanchez JA, Hurtado E, Suelves M. **HDAC11 deficiency regulates age-related muscle decline and sarcopenia.** *Geroscience.* 2025 Aug;47(4):5843-5868. DOI: [10.1007/s11357-025-01611-y](https://doi.org/10.1007/s11357-025-01611-y).

Highlights

In 2025, a national multicentre initiative led by GRENBA at IGTP, [DM1-Hub](#), was launched with the aim of transforming research and care for myotonic dystrophy type 1. During its first year, the DM1-Hub consolidated its position as a reference infrastructure, reaching a total of 750 recruited patients, with the systematic collection of approximately 700 variables per participant, and expanding its network to more than 130 professionals. Dissemination activities included contributions to over 20 scientific events, as well as more than 100 outreach actions through social media and specialised communication channels. This growing activity contributed to the expansion of the GRENBA team with the incorporation of new members.

Four DM1-Hub meetings were organised in Badalona, Valencia, Bilbao and Madrid, bringing together patients and key stakeholders from the DM1 community and providing a shared space for knowledge exchange and discussion. In addition, the group delivered several short informative sessions for patients in collaboration with ASEM Catalunya and ASEM, reinforcing patient-centered communication and engagement.

The group also strengthened its research portfolio in 2025 through the award of two new competitive grants, INTEGRA-DM1 and INTERRUPT. These projects support the extension and integration of ongoing research lines in myotonic dystrophy type 1, enabling further advances in the understanding of the disease.

Individual excellence within the group was also recognised during the year, with Mònica Suelves receiving an award for the project Time4Duchenne at the [Innomed Awards](#), highlighting innovation and translational potential within the team.

Finally, a new [solidarity race](#) organised by Plataforma per Badalona increased the visibility of the research conducted by the GRENBA group and raised €10,000, which will be fully allocated to support ongoing research activities in neuromuscular diseases.

Cellular and Molecular Neurobiology (CMN)



Group leaders: Teresa Gasull Dalmau, Octavi Martí Sistac



Research lines

- Novel glutamate-related targets for neuroprotection
- Ferroptosis in neuronal death and anti-ferroptotic neuroprotective compounds
- Experimental modelling of stroke in rodents and swine
- Discovery of new biomarkers to improve stroke treatment
- Computational biology: machine/deep learning assessment of behaviour in in vivo stroke models

Featured publications

Gasull T, Purroy F, Arboix A. **Editorial for Special Issue “Cerebrovascular Diseases-From Pathogenesis to Treatment: Opportunities and Challenges”.** *Curr Issues Mol Biol.* 2025 Nov 26;47(12):985. DOI: [10.3390/cimb47120985](https://doi.org/10.3390/cimb47120985).

Paolini D, Dorte S, Pacheco M, Gasull T, Compagnone D, Della Pelle F, Escarpa A. **Integrated 3D-Printed Microfluidic Device for Immunocapture and Electrochemical Assessment of Transferrin Saturation in Point-of-Care Stroke Diagnostics.** *ACS Sens.* 2025 Dec 26;11(1):237-246. DOI: [10.1021/acssensors.5c02834](https://doi.org/10.1021/acssensors.5c02834).

Research group overview

Genomics and Transcriptomics of Synucleinopathies (GTS)



Group leader: Katrin Beyer



Research lines

- Molecular characterisation of dementia with Lewy bodies and identification of molecular subtypes
- Biomarker research. Identification and characterization of peripheral biomarkers
- Identification of platelet-specific changes in dementia with Lewy bodies
- Establishment of cell models suitable for testing of results

Featured publications

Arnaldo L, Mena J, Serradell M, Gaig C, Adamuz D, Vilas D, Samaniego D, Isperto L, Montini A, Mayà G, Álvarez R, Pastor P, Iranzo A, Beyer K. **Platelet miRNAs as early biomarkers for progression of idiopathic REM sleep behavior disorder to a synucleinopathy.** *Sci Rep.* 2025 Apr 9;15(1):12136. DOI: [10.1038/s41598-025-96926-3](https://doi.org/10.1038/s41598-025-96926-3).

Arias N, Boigues M, Isperto L, Vilas D, Linares-Pardo I, Álvarez R, Pastor P, Fernandez-Sanmartín MA, Martínez-Cáceres E, Beyer K. **Platelet and immune cell crosstalk in dementia with Lewy bodies: Is there a unique inflammatory profile?** *J Neuroimmunol.* 2025 Sep 15;406:578668. DOI: [10.1016/j.jneuroim.2025.578668](https://doi.org/10.1016/j.jneuroim.2025.578668).

Arnaldo L, Mena J, Adamuz D, Menéndez A, Serradell M, Samaniego D, Gaig C, Isperto L, Vilas D, Iranzo A, Aarsland D, Pastor P, Beyer K. **Does Platelet Transcriptome Dysregulation Across the Lewy Body Continuum Mirror Neuronal Dysfunction?** *Int J Mol Sci.* 2025 Nov 19;26(22):11169. DOI: [10.3390/ijms262211169](https://doi.org/10.3390/ijms262211169).

Highlights

Over 2025, the research group continued to advance the development of biomarkers for dementia with Lewy bodies, strengthening both translational innovation and fundamental scientific understanding in this field.

A major milestone was achieved through the LewyDx project, presented by Jorge Mena and Juan Carillo at the 6th Edition of “Jornadas Salud On Digital” in June 2025. The project was awarded the prize for the most convincing proposal, receiving a €2,500 award, highlighting its strong potential for clinical impact and innovation.

In parallel, the team’s biomarker development efforts were been complemented by research aimed at elucidating the underlying mechanisms of action. In this context, David Adamuz represented the group at ADPD 2025, the leading international conference on neurodegenerative disorders, attended by over 6,000 participants. His contribution included two oral presentations, showcasing his latest findings to a global audience.

The group also contributed to the training of early-career researchers. Susanna Jiménez, who joined the group in 2024 as an undergraduate trainee, completed her final degree project (TFG) during the 2024–2025 academic year under the group’s supervision. Her work, titled “Characterization of the molecular changes associated with the triplication of the α -synuclein gene locus in Parkinson’s disease”, was recognised with the First Prize ‘Premi Gemma Rosell i Romero XVIII,’ awarded by the Faculty of Medicine and Health Sciences of the Universitat de Barcelona.

Together, these accomplishments reflect the group’s commitment to excellence in research, innovation, and training in the field of neurodegenerative diseases.

Neurogenetics Unit



Group leaders: Antoni Matilla Dueñas, Ivelisse Sánchez Díaz



Research lines

- Identification of the genetic causative deficits and the molecular mechanisms underlying hereditary ataxias, spastic paraplegias and other neurodegenerative disorders
- Genetic diagnosis of over 400 neurological diseases
- Multiomics-based identification of biomarkers of disease progression in Friedreich's ataxia and other neurodegenerative disorders
- Definition of clinical-genetic-molecular correlations implementing machine learning
- Identification of signaling targets and therapeutic strategies for neurological disorders in cellular and animal disease models
- Development of a gene therapy for Friedreich Ataxia and its evaluation in pre-clinical models of the disease
- Establishment of iPS cells and 3D-organoids to validate therapies and disease biomarkers

Neurovascular Research Group



Group leader: Mònica Millán Torné



Research lines

- Therapies in patients with acute stroke
- Territorial organisation for stroke care
- Multimodal neuroimaging techniques (CT and MR in acute stroke)
- Diagnostic and prognostic clinical and biological markers of stroke and its complications
- Neurocardiology
- Brain recovery and post-stroke care
- Stroke prevention

Featured publications

Valls Carbó A, Palomar A, Laredo C, Werner M, Dorado L, Remollo S, Munuera J, Puig J, Silva Y, Pérez de la Ossa N, Gomis M, Bustamante A, Castaño C, Muñoz L, Domenech S, Terceño M, Millán M, Hernández-Pérez M. **Relevance of persistent perfusion deficits on clinical outcomes after successful endovascular treatment: a prospective serial magnetic resonance study.** *Front Neurol.* 2025 Feb 27;16:1478240. DOI: [10.3389/fneur.2025.1478240](https://doi.org/10.3389/fneur.2025.1478240).

Hernández-Pérez M, Valls-Carbó A, Hernández-Jiménez M, Molina C, Vivancos Mora J, Castellanos M, García-Madróna S, Tembl JI, Moniche F, Terceño M, Cardona P, Arenillas JF, Calleja P, Henon H, Calviere L, Mazighi M, Olivot JM, Liebeskind DS, Ribo M. **Changes in Infarct Volume and Cerebral Edema After Mechanical Thrombectomy in Patients With Stroke Randomized to ApTOLL or Placebo: A Secondary Analysis of APRIL Trial.** *Stroke.* 2025 Sep;56(9):2422-2430. DOI: [10.1161/STROKEAHA.124.048917](https://doi.org/10.1161/STROKEAHA.124.048917).

Santana D, Mosteiro A, Pedrosa L, Pujol-Fontrodona G, Zattera L, Werner M, Ortega E, Llull L, Torné R, Amaro S. **Performance and clinical relevance of continuous glucose monitoring during early brain injury in subarachnoid hemorrhage.** *Sci Rep.* 2025 Nov 23;15(1):45206. DOI: [10.1038/s41598-025-29495-0](https://doi.org/10.1038/s41598-025-29495-0).

Highlights

The group treated more than 1,200 patients with suspected stroke, of which 1,000 were confirmed strokes, with approximately 600 patients admitted to the Stroke Unit. A total of 250 reperfusion treatments were administered to patients with ischemic stroke, and 9% of admitted patients were included in clinical trials or academic research projects. However, their most significant healthcare achievement is the development and implementation of the first care protocol in the Institut Català de la Salut for stroke management during pregnancy and the postpartum period, in collaboration with the Obstetrics and Gynaecology Service, initiating a specific registry for this population of interest. This achievement garnered significant media and social networks attention.

The group has a well-established track record in training, delivering educational activities on cerebrovascular diseases over the past 15 years. It is worth highlighting the direction and organisation of the “Neurosciences 3.2 Course: Innovation and Research”, as well as the training sessions for stroke patients and their families.

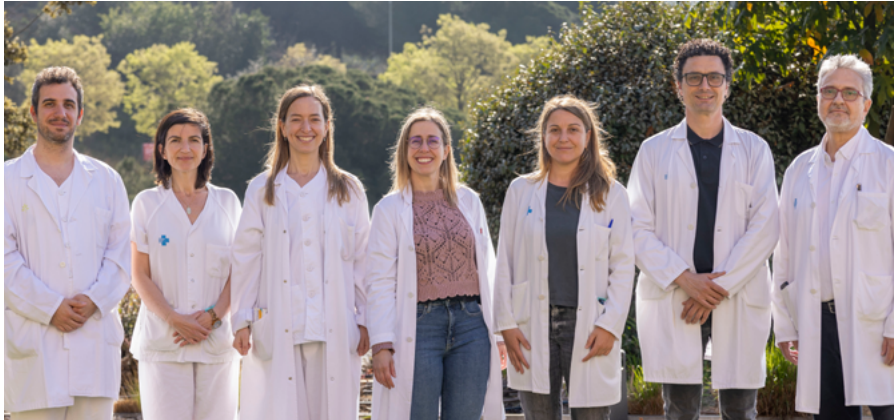
The Instituto de Salud Carlos III recognised the group again as a research group in the RICORS network (2025-2027), leading 13 competitively funded research projects, and collaborating on a further 21.

The team led the publication of six original scientific articles, as well as participated in 20 additional articles resulting from collaboration with other national and international research groups. Among its main scientific contributions, serial perfusion studies following mechanical thrombectomy demonstrated the impact of persistent perfusion deficits on clinical recovery despite arterial recanalisation, due to the no-reflow phenomenon. In addition, the adminis-

tration of the aptamer Aptoll was shown to reduce infarct volume compared to placebo in patients with large anterior vessel occlusion treated with mechanical thrombectomy.

Finally, the group secured funding in the competitive AES 2025 call for two research projects focused on advanced neuroimaging and artificial intelligence in stroke, and on the clinical validation of a prognostic scale in intracerebral haemorrhage, including its refinement through blood-based biomarkers.

Psychiatry and Mental Health



Research lines

- Innovation in psychiatric hospitalisation and emergency services
- Consultation-liaison psychiatry
- Psychosis
- Neurodevelopmental disorders and perinatal mental health

Featured publications

Serra-Arumí C, Vila-Badia R, Colomer-Salvans A, Del Cacho N, Butjosa A, Abella M, Rolduà-Ros J, Cuautle A, Fernández-Sanz A, Cuevas-Esteban J, Dolz M; PROFEP Group; Usall J. **Resilience in people with first-episode psychosis: The relevance of depression.** *Arch Psychiatr Nurs.* 2025 Apr;55:151853. DOI: [10.1016/j.apnu.2025.151853](https://doi.org/10.1016/j.apnu.2025.151853).

Cuevas-Esteban J, Serrat F, Iglesias-González M, Motta N, Jimenez-Fernandez B, Vila-Badia R, Colomer-Salvans A, Serra-Arumí C, Cacho ND, Corbella-Sotil A, Butjosa A, Pardo M; PROFEP Group; Usall J. **Catatonia in first-episode psychosis: prevalence and psychopathological association.** *BJPsych Open.* 2025 Sep 23;11(5):e220. DOI: [10.1192/bjo.2025.10834](https://doi.org/10.1192/bjo.2025.10834).

Vila-Badia R, Espinosa V, Colomer-Salvans A, Serra-Arumí C, Corbella-Sotil A, Del Cacho N, Butjosa A, Ochoa S, Cuevas-Esteban J, Muñoz-Samons D; PROFEP Group; Usall J. **Childhood sexual abuse in first-episode psychosis: The relevance in cognitive bias.** *Schizophr Res.* 2025 Sep;283:98-106. DOI: [10.1016/j.schres.2025.07.004](https://doi.org/10.1016/j.schres.2025.07.004).

Psychoneuroendocrinology and Stress in Psychosis (PSICPNEC)



Group leader: *Javier Labad Arias*



Research lines

- Biomarkers of stress and risk of developing a psychotic disorder
- Impact of hormones on the clinical expression of psychotic disorders
- Neurocognition and social cognition in early psychotic disorders: prognostic and therapeutic implications
- Psychopathological and biological consequences of abuse in adolescents and young adults

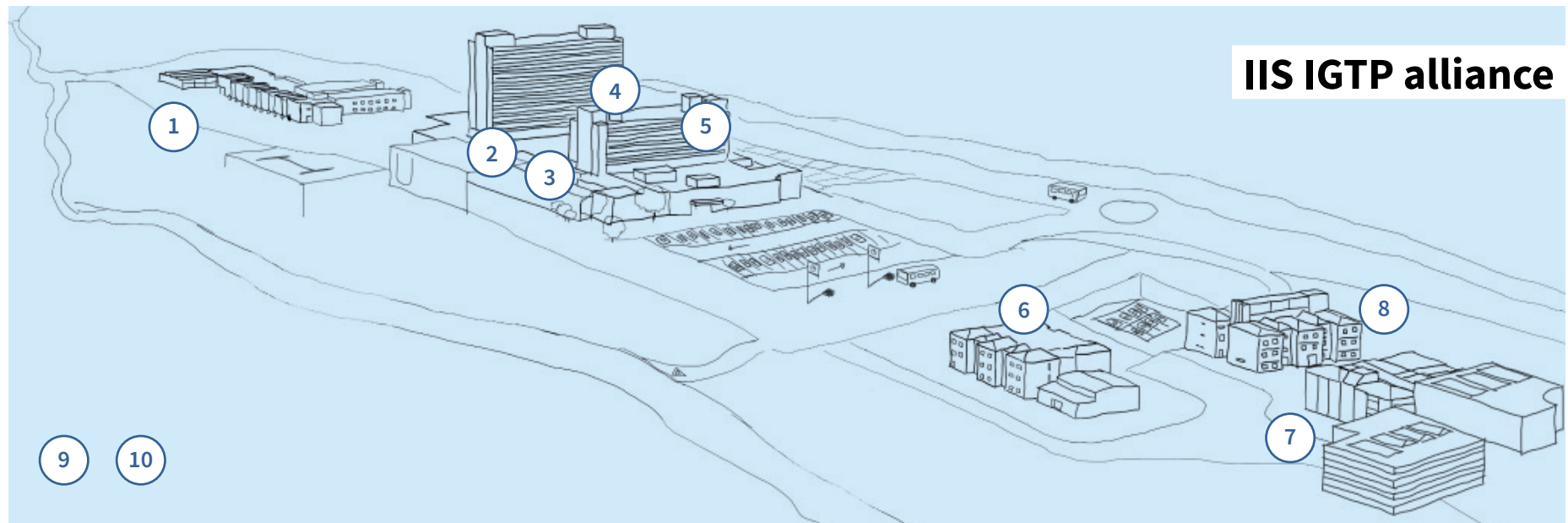
Featured publications

Avella MT, Bertho G, Giraud N, Kébir O, Caradeuc C, Labad J, Papiol S, Schulze TG, Krebs MO, Chaumette B, Frajerman A. **Metabolomic biomarkers of psychotic conversion in ultra-high-risk subjects: a pilot study.** *Transl Psychiatry*. 2025 Nov 15;15(1):503. DOI: [10.1038/s41398-025-03679-8](https://doi.org/10.1038/s41398-025-03679-8).

IGTP affiliated groups

IGTP is accredited as an [Institut de Investigació Sanitària \(IIS\)](#) by Instituto de Salud Carlos III. This recognition provides a framework for interinstitutional and multidisciplinary collaboration, aimed at strengthening research capacity and improving healthcare outcomes.

Within this structure, IGTP includes several affiliated researchers and research groups from the institutions shown in the image below. In addition, there are also associated groups linked to [ISGlobal](#) and [Fundació Lluïta contra les Infeccions](#).





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