Josep Carreras
LEUKAEMIA
Research Institute

Annual report 2023

Content

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Foreword

As Director of the Josep Carreras Institute in 2023, I am delighted to present our Annual Report, highlighting our numerous achievements and strides over the past year.

This year, we have initiated the implementation of our **2023-2027 Strategic Plan**, developed in a collaborative manner and based on six key pillars: Research; Innovation; Talent; Internationalization; Dissemination, Open Science and RRI; and Finance and Infrastructure Capabilities. This strategic framework will serve as our roadmap for the upcoming years, enhancing our competitiveness in biomedical research. This Plan has also resulted in the reorganisation of our Institute's **40 research groups** into multifactorial research programmes, according to the technology and pathologies each laboratory targets.

Our firm commitment to excellence in research is well reflected in the **remarkable growth of our scientific production**, with 222 papers published in 2023 and an average impact factor of 12,70. Our researchers dedicate their best efforts to pursue meaningful scientific breakthroughs that do not only advance their field, but also and most importantly improve patients' lives.

The Josep Carreras Institute is also honoured to have successfully passed the **CERCA's evaluation**, which recognizes the outstanding work conducted during the period 2019-2022. IJC has obtained a four-year renewal and the highest rating in the evaluation (A). Our initiatives and activities have received applause of public authorities, and this year we have had the pleasure to receive many distinguished guests at our facilities, such as the President of the Spanish Government or the Catalan Minister of Health.

A good example of our Institute's international leadership in this 2023 has been the **IMMERGE** project, a Marie Skłodowska Curie Action Doctoral Network funded by the EC under the Horizon Europe framework programme. This initiative aims to train Doctoral candidates to become world-class experts and provide new answers to tackle primary immunodeficiencies. This year we also launched the COFUND **CarrerasLeaders**, an innovative and international programme for postdoctoral researchers, with the mission to train the next generation of scientist leaders to advance on the cure of blood cancers.

Our team continues to be the IJC's driving force to push the boundaries of knowledge and innovation. Their work and dedication have positioned the Institute as a leading global player in cancer and haematological malignancies research, as you will be able to see throughout this Annual Report.

Thank you,

Dr. Manel Esteller
Director of the Josep Carreras Institute in 2023.

About us

Who we are

The Josep Carreras Leukaemia Research Institute is a non-profit research institute based in Badalona (Barcelona), dedicated to biomedical research and personalized medicine in leukaemia and other malignant blood diseases. It was founded in 2010 by the Josep Carreras Foundation, together with the Catalan government, as the first European research centre focused exclusively on leukaemia and other malignant blood diseases.

As a comprehensive research centre, IJC works on the promotion, development, transfer and dissemination of research and scientific knowledge in the field of leukaemia and other haematological malignancies. Our main objective is the well-being of patients, by increasing their quality of life and lifespan.

The Josep Carreras Institute is a collaborative hub for basic and translational researchers who work together on the fundamental biological and clinical aspects of leukaemia at our state-of-the-art facilities, which provide an excellent work environment and serve as a magnet for outstanding researchers from all over the world.

The Josep Carreras Institute has its own identity and various facets:

> It is an Institute devoted to a single issue: research into malignant blood diseases.

> It is a multi-location Institute, like those that have been created by several hospitals and universities in the European Union (EU) and the United States of America (USA), something that represents a fundamental advantage to bring together very extensive series of patients to carry out and participate in large studies at international level.

> It is physically integrated into the health care, teaching and research facilities. Our laboratories on these clinical locations allow us to collaborate closely with clinicians from the five associated hospitals: Hospital Clínic, Hospital de Sant Pau, Hospital Germans Trias i Pujol, Hospital del Mar and Dr. Josep Trueta Hospital.

Mission, Vision, and Values

Mission

The mission of the Josep Carreras Leukaemia Research Institute is **to conduct research and drive innovation in the epidemiological, preventive, clinical, translational, and basic aspects of cancer**, with a special emphasis on leukaemia and other malignant blood diseases, with the aim of finding a cure for these diseases.

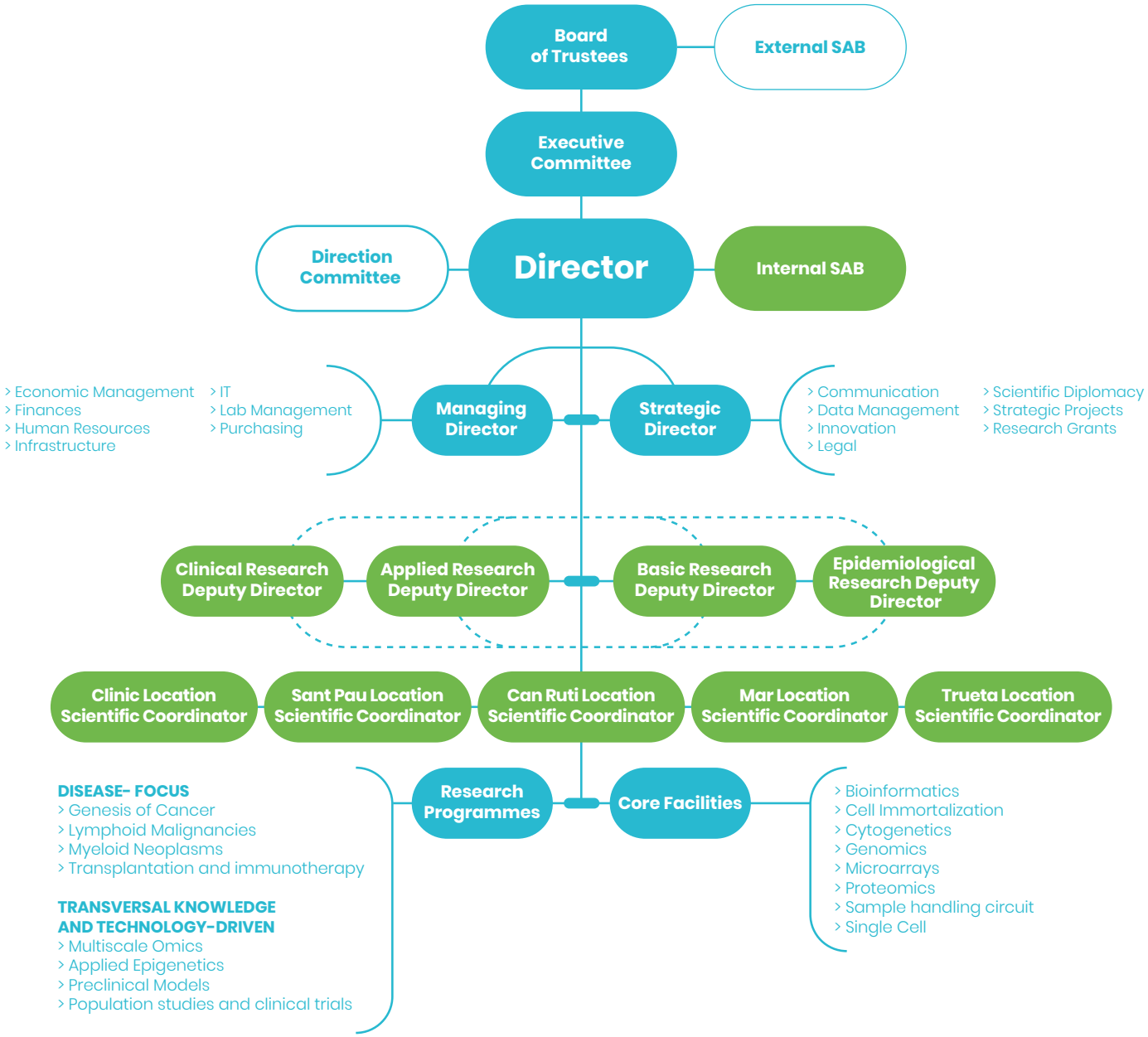
Vision

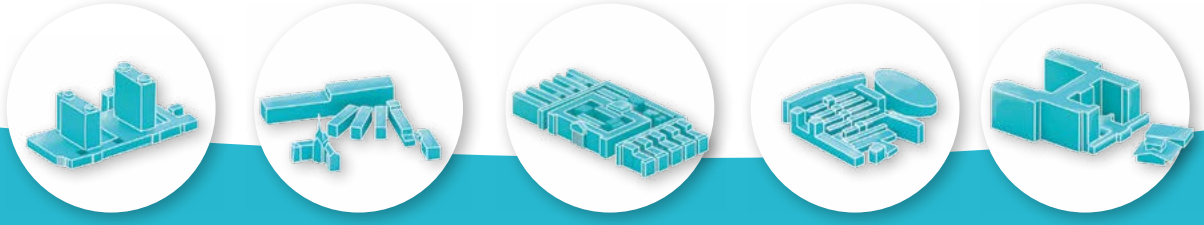
The vision of the Josep Carreras Leukaemia Research Institute is to be a world-class reference and excellent research centre that contributes to the **improvement of results, and the cure of patients affected by leukaemia and other malignant hemopathies**, through innovation, sustainability, social responsibility, talent, and professional experience.

Values

> Scientific and Social Ethic
> Interdisciplinarity
> Equality and diversity
> Creativity
> Sustainability
> Perseverance and continuous improvement

Organizational Chart





IJC Can Ruti | IJC Sant Pau | IJC Clínic | IJC Mar | IJC Josep Trueta

Director

Dr. Manel Esteller is Chairman of Genetics at the University of Barcelona's Faculty of Medicine and an ICREA Research Professor. Since May 2019, Dr. Esteller has been the Director of the Josep Carreras Leukaemia Research Institute. Dr. Esteller is considered to be among the top 0.1% of world scientists based on impact by Stanford University (METRICS). He is also a member of numerous international scientific societies and his work has been recognized by numerous awards, including the World Health Summit Award (2010), the Rey Jaime I Research Award (2013), the National Award in Oncology (2014), the Dr. Josep Trueta Medal from the Catalan government (2015), the National Research Award from the Catalan government (2015), the Gold Medal from the Parliament of Catalonia (2016), the International Award of Catalonia (2016), the Innovation in Healthcare Oncology Award (2018), the Narcís Monturiol Medal from the Catalan government (2020), the Fernández-Cruz Award for excellence in biomedical research (2021), the "Constantes y Vitales" for his scientific career in biomedical research (2022) and the Rafael Hervada Award for Biomedical Research (2023).

Scientific Founding Members

Professor Ciril Rozman

Prof. Ciril Rozman was born in Ljubljana (Slovenia) in 1929. He is one of the most relevant figures in the field of Spanish Internal Medicine with his own comprehensive vision of the meaning of this specialty. His research has focussed on Haematology.

In the field of haematology, he is considered one of the world's leading experts on Chronic Lymphocytic Leukaemia (LLC), and is the first Spanish author to receive editorship of the prestigious New England Journal of Medicine. His involvement in therapeutic haematology has focussed on Bone Marrow Transplants and he carried out the first allograft transplant in Spain. He has also dedicated himself to the search for prognostic factors and morphological and biological analysis of malignant blood diseases, and more recently has led the establishment of the first Spanish haematopoietic donor bank of umbilical cord blood.

Amongst his honours and distinctions, he currently holds the Creu de Sant Jordi, the Narcís Monturiol and the José Trueta de la Generalitat de Catalunya medals; he holds the Premi Rei Jaume I; he is also scientific Ambassador for the Republic of Slovenia and Doctor Honoris Causa at the universities of Granada and Salamanca.

Professor Evarist Feliu

Professor Evarist Feliu is the President of the Executive Committee and Ombudsman of the Josep Carreras Leukaemia Research Institute.

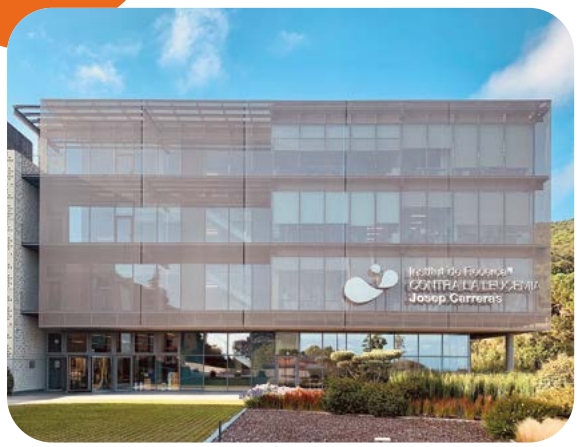
He was Head of the Haematology Service at the Germans Trias i Pujol University Hospital - HGTiP (1991-1995), Medical Director of the HGTiP (1995-97) and Managing Director of the same centre (1997-2002). He has been Center Director of the Catalan Institute of Oncology (ICO) (2003-2009), Scientific Director of the ICO, Director of the University Relations Programme and Head of the Haematology-Laboratory Service of the ICO-Badalona until 2018. He is currently an honorary consultant of the ICO. He was tenured Professor of Medicine at UB and UAB (1985-1997 and 1997-2007, respectively) and, Professor of Medicine-Haematology at UAB from 2008 to 2018. From 2018 to 2021 he was Professor Emeritus of the UAB and from 2021 to the present day he is Honorary Professor of the same university.

He is Trustee and Scientific Director of the Josep Carreras Leukaemia Foundation, founding member of the Josep Carreras Leukaemia Research Institute, vice-president of the Josep Carreras Foundation, Numerary Academician of the Royal Academy of Medicine of Catalonia and Doctor "Honoris Causa" by the University of Asunción.

Prof. Feliu is a prestigious researcher in the field of procedures and integrated methods of haematological diagnosis, especially electron microscopy of blood and bone marrow cells and in the study of spleen pathology, with relevant contributions in these areas at national and international level.

Locations

The Josep Carreras Institute is a multi-location Institute, which is essential to bring together very extensive series of patients to carry out and participate in large studies at international level. IJC is physically integrated into health care, teaching and research facilities at the following five scientific locations:



IJC Can Ruti

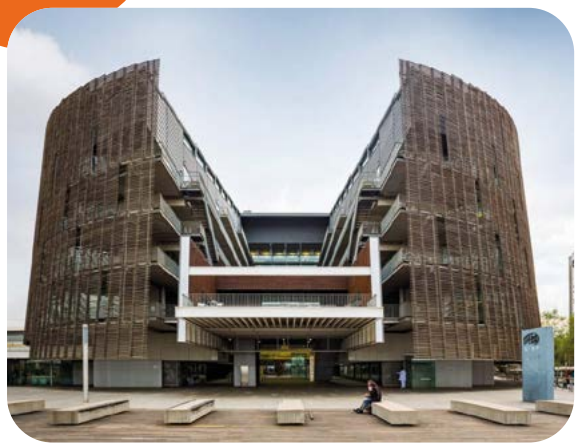
Location Can Ruti contains IJC's headquarters and most of the groups focus on cancer molecular mechanisms with a special focus on cancer and leukaemia genetics and epigenetics. It concentrates the largest representation of research groups and technological platforms (70% staff), combining basic and translation wet labs with computational biologists and physicians from the ICO-Germans Trias i Pujol hospital implementing translational and clinical research.

IJC Sant Pau

Location Sant Pau is within the Hospital de la Santa Creu i Sant Pau, led by physicians pushing the limits of our knowledge on biological characterization and therapeutic innovation of haematological malignancies, especially leukaemia. Clinical research is the main output of this location, but also translational and basic research.

IJC Clinic

Location Clinic is within the Hospital Clinic, one of the leading research hospitals in Spain. Located in a century-old public university hospital, committed to research, IJC has also remodelled and updated some of the facilities, shared with the university, in the microscopy, proteomics and genomics areas. This location is mainly integrated by physicians focusing on stem cell biology. Some of the investigators have been actively involved in the development of the first academic CAR-T cell therapy approved in Spain.



IJC Mar

Located at the Barcelona Biomedical Research Park (PRBB), an inspiring environment for life sciences and biomedical research where the Josep Carreras Institute's researchers can access a range of cutting-edge scientific and technical services. Basic research is the main output of this location, focused on methods to generate and maintain hematopoietic stem cells and the study of the mechanism promoting cancer and leukaemia development.

IJC Josep Trueta

The Josep Carreras Institute's location in Girona is located at the facilities of ICO-Dr Josep Trueta Hospital, the Girona's public hospital reference. Clinical research is the main output of this location, devoted to clinical and translational trials in haematology, but also to descriptive and analytical epidemiology of cancer, with the aim of determining the incidence, prevalence and survival of haematological cancer patients.

IJC at a Glance

403,09

PROFESSIONALS (FTE)

4
DISEASE FOCUS PROGRAMMES

4
TRANSVERSAL KNOWLEDGE AND TECHNOLOGY-DRIVEN PROGRAMMES

40
RESEARCH GROUPS

8
CORE FACILITIES

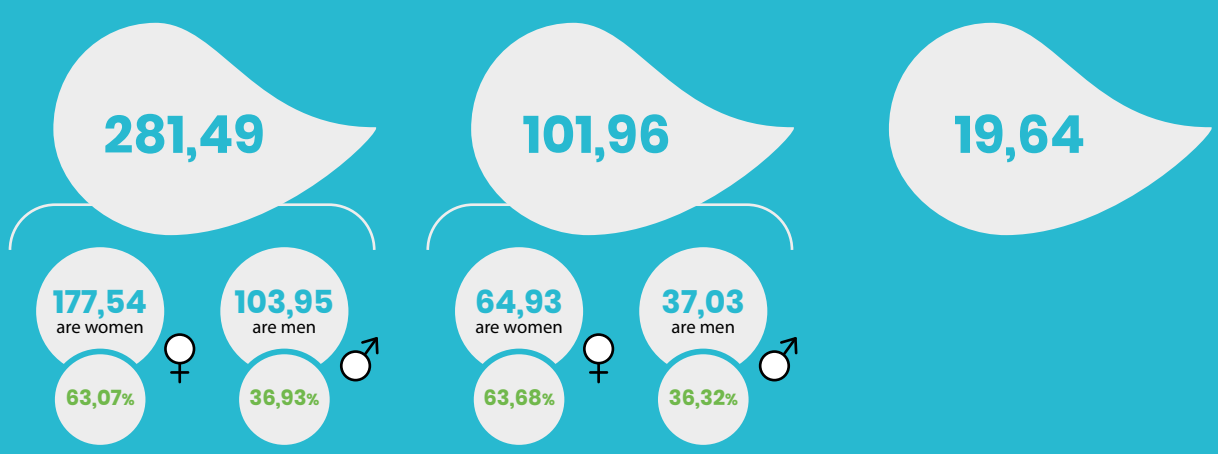
222
PUBLISHED RESEARCH ARTICLES
(12,70 median impact factor)

209
ONGOING PROJECTS

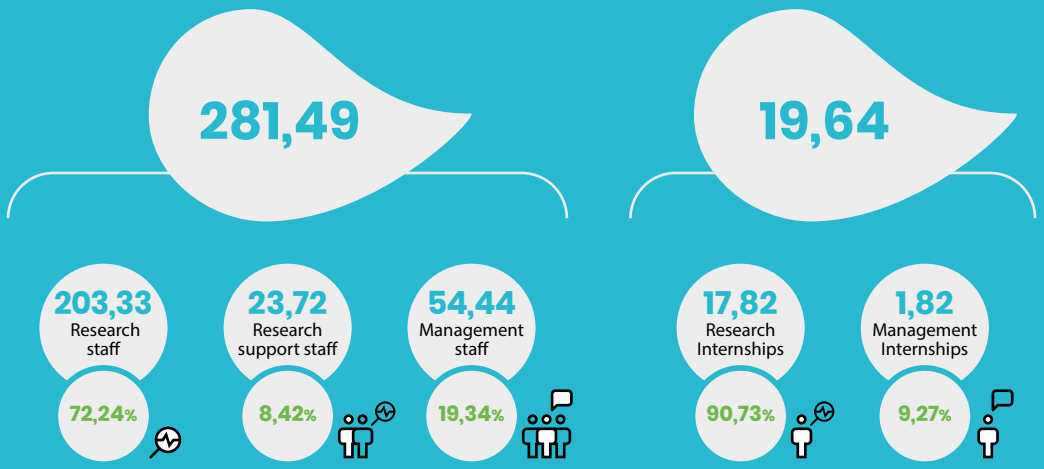
2
SPIN-OFFS
(16 patent families)

Our team

CONTRACTED & SECONDED STAFF AND INTERNS BREAKDOWN (FTE)



MANAGEMENT VS. RESEARCH BREAKDOWN (FTE)



*Contracted staff includes seconded group leaders

Our team

LOCATIONS STAFF BREAKDOWN

CONTRACTED STAFF*

281,49

245,73 staff	25,54 staff	6,02 staff	2 staff	1,91 staff
87,30%	9,08%	2,14%	0,71%	0,68%
in IJC Can Ruti	in IJC Clinic	in IJC Sant Pau	in IJC Trueta	in IJC Mar

SECONDED STAFF

101,96

53,52 staff	32,89 staff	7 staff	5,55 staff	3 staff
52,49%	32,26%	6,87%	5,44%	2,94%
in IJC Can Ruti	in IJC Trueta	in IJC Clinic	in IJC Sant Pau	in IJC Mar

Research Programmes

Disease-Focus Programmes

Genesis of cancer

This programme covers the molecular aspects of cancers occurring beyond the bone marrow, blood or lymphoid tissues. This will include most relevant solid cancers such as breast, lung and liver cancer and study aspects that are relevant for all cancers but more accessible in solid cancers, such as inflammatory processes. The programme also covers the study of cancer stroma and non-cancerous diseases sharing molecular causes and physiologic aspects with cancer.

> Cancer Epigenetics
led by Manel Esteller
> Cancer Genetics
led by Montse Sanchez-Cespedes
> Cancer Heterogeneity and Hierarchies
led by Verónica Rodilla
> Cancer Immunogenomics
led by Eduard Porta
> Cancer Metabolism
led by Lucas Pontel
> Chromatin Biology
led by Alejandro Vaquero
> Endothelial Pathobiology and Microenvironment
led by Mariona Graupera
> Epigenetics and Immune Disease
led by Esteban Ballestar
> Epigenetic Therapies
led by María Berdasco
> Immunohematology and Glycobiology
led by Fumiichiro Yamamoto
> Regulatory Genomics
led by Tanya Vavouri
> Regulatory RNA and Chromatin
led by Sònia Guil

Lymphoid malignancies

This programme covers all malignancies emerging from the lymphoid lineage and its tissues including acute lymphoblastic leukaemia, lymphoma and myeloma. For solid tissues, we will leverage the power of spatial transcriptomics to dissect the interactions of malignant cells with their microenvironment.

> 3D Chromatin Organization
led by Biola M. Javierre
> Acute Lymphoblastic Leukemia (ALL)
led by Josep Mª Ribera
> Cellular Immunotherapy and Gene Therapy
led by Javier Briones
> Cellular Systems Genomics
led by Elisabetta Mereu
> Chronic Lymphocytic Leukemia
led by Carolina Moreno
> Lymphocyte Development and Disease
led by Maribel Parra
> Lymphoid Neoplasms
led by Tomás Navarro
> Lymphoma Translational
led by Gaël Roué
> Mechanisms of cancer and ageing Lab (South)
led by Salvador Macip
> Multiple Myeloma
led by Albert Oriol
> Nuclear Architecture in Leukemia
led by Gregoire Stik
> Stem Cell Biology, Developmental Leukemia and Immunotherapy
led by Pablo Menéndez
> Stem Cells and Cancer
led by Anna Bigas
> T-Cell Lymphoma
led by Laura Mondragón

Myeloid Neoplasms

This programme covers acute myeloid leukaemia as well as other myeloid malignancies originating in the bone marrow such as myelodysplastic syndromes and myeloproliferative neoplasms. We will study these diseases in the context of bone marrow as a complex tissue and consider clonal evolution as an early step.

> Chromatin, Metabolism and Cell Fate
led by Marcus Buschbeck
> Descriptive Epidemiology, Genetics and Cancer Prevention
led by Rafael Marcos Gragera
> Epigenetic Control of Hematopoiesis
led by José Luis Sardina

> Myeloid Neoplasms
led by Lurdes Zamora and Blanca Xicoy
> Hematological Diagnosis
led by Josep Nomdedéu
> Hematological Diseases, Transplant and Cell Therapy
led by Jordi Sierra
> Leukemia and Immuno-Oncology
led by Laura Belver
> Myelodysplastic Syndromes
led by Francesc Solé
> Myeloid Neoplasms (Clínic)
led by Jordi Esteve
> Oncogenesis and Antitumor Drugs
led by Ramon Mangues
> Transcriptional Dynamics in Leukemia
led by Sergi Cuartero

Transplantation and immunotherapy

This programme covers all aspects of hematopoietic stem cell transplantation including the immunological complications of allogenic transplants such as graft versus host disease. The programme further addresses all aspects of immunotherapy including cell-based therapies (NK, MSC, CAR-T) and immune check point inhibitors.

> Barcelona Endothelium Team (BET)
led by Enric Carreras
> Hematology Research
led by David Gallardo
> Stem Cell Transplantation and Cellular Immunotherapy
led by Álvaro Urbano-Ispizua

Transversal Knowledge and Technology-Driven Programmes

Multiscale omics

The generation of high-content data sets provides a unique opportunity for discovery, but data interpretation and integration are challenging. Researchers will use massive parallel sequencing technologies including those with single cell and spatial resolution and generate proteomic data with latest mass spectrometric methods. Computational approaches will include methods involving artificial intelligence such as machine and deep learning.

Applied Epigenetics

Research groups at IJC have long expertise in chromatin biology and epigenetics. The programme puts its particular focus on the question of how we can translate knowledge of epigenetic mechanisms into tools for the improvement of cancer management. This includes the use of DNA, histone modifications and chromatin 3D structure as biomarkers for diagnosis, prognosis, response to treatment and the exploration of the chromatin-regulatory space for the identification of novel drug targets.

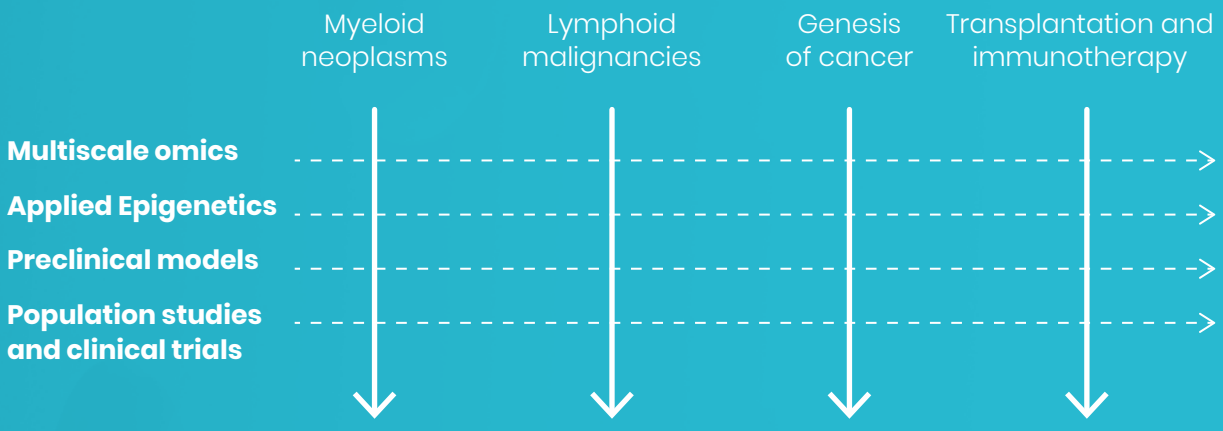
Preclinical models

Research groups at IJC have a long expertise in preclinical disease modelling using primary cell cultures, established cell lines, genetically engineered animal models, and patient-derived xenografts, including orthotopic models. The development of patient-derived ex vivo organoid-like models remains a challenge for both lymphoid tissues and the bone marrow.

Population studies and clinical trials

This programme brings together researchers involved in clinical trials testing the safety of new treatments (CAR-T, monoclonal antibodies, Bites, kinase, epigenetic inhibitors and targeted therapies) to compare them against gold standard treatments and to increase the number of treatment options. The leading role of IJC investigators in medical cooperation groups is instrumental for the execution of multi-centre studies and includes the first investigator-initiated CAR-T trial.

Vertical disease - Focus groups



TRANSVERSAL KNOWLEDGE AND TECHNOLOGY-DRIVEN PROGRAMMES

Genesis of cancer

Cancer Epigenetics

led by Manel Esteller

Transversal Programme:
Multiscale-Omics

OVERVIEW

The group continues the wide-ranging work on epigenetics that Manel Esteller, the group leader, has carried out during his career until now. Current research is devoted to the establishment of the epigenome and epitranscriptome maps for normal and transformed cells, the study of the interactions between epigenetic modifications and non-coding RNAs, and the development of new epigenetic drugs for cancer therapy.

Methylation of SRBC and SLFN11 have also been identified as resistance markers for platinum derivatives in human tumours and the regulator of EGFR TBC1D16 has been identified as a sensitizer for therapies with BRAF and MEK inhibitors.

From a multiomics standpoint, we have contributed to the characterization of drug sensitivity in 1,000 cancer cell lines and unveiled the reasons for those patients described as "exceptional responders".

OUR GOALS

Our group has had a long-standing interest in translating the use of epigenetic knowledge gained from research into biomarkers to predict clinical outcome and to assay new drugs to reverse the distorted epigenetic landscape.

For example, we have used epigenetic markers to predict response to anti-tumour therapies and following the initial observation that MGMT gene methylation predicted response to alkylating agents in glioma.

We have shown the relationship of methylation of MGMT with the response to alkylating agents in lymphoma; of WRN with the response to irinotecan; of BRCA1 with the response to PARP inhibitors and of DERL3 with the response to glycolysis inhibitors.

OUR CHALLENGES

Continuing with this translational side of our work, we are also interested in the development and study of new epigenetic drugs that target DNA methylation and histone modification writers, readers and erasers and could have an anti-cancer effect.

Interestingly, the "repertoire" of epigenetic modifications of DNA is fairly limited, as we recently reviewed. In sharp contrast, more than one hundred post-transcriptional modifications occur in RNA.

Until very recently it was almost impossible to make a good map of the epigenetic modifications of the RNA molecule, which hampered many

studies in this area and prevented advances in the study of the significance of each RNA modification. However, recent methodologies now allow the study of the so-called epitranscriptome. Knowledge in this area is limited and its study is the focus of intense research in the lab.

We have also a long-standing vocation for research in monogenic disorders affecting epigenetic genes, particularly in Rett syndrome. Over the years, we have identified the gene targets for MECP2, studied the genomics of Rett syndrome in detail and developed pre-clinical drug studies.

In a similar context, we are also curious about the epigenomic profiles of common diseases such as cardiovascular alterations and Alzheimer and other neurodegenerative diseases.

Finally, we have a strong interest in the establishment of new epigenomic platforms to elaborate comprehensive DNA methylome maps, our lab is the pioneer in the validation of the commonly used DNA methylation microarrays such as the 450K and the EPIC/850K, plus the mouse DNA methylation microarray.

KEYWORDS

Cancer epigenetics; DNA methylation; RNA epitranscriptomics; histone modification; epigenetic gene silencing

GROUP MEMBERS

ESTELLER BADOSA, MANEL
Group Leader

SETIÉN BARANDA, ESTEBAN FERNANDO
Associate Researcher

DÁVALOS VEGA, MARIA VERÓNICA
Associate Researcher

MUSULÉN PALET, EVA
Associate Researcher

FERRER AGUILAR, GERARDO
Associate Researcher

ARENAS LAHUERTA, ENRIQUE JAVIER
Postdoctoral Researcher

BUENO COSTA, ALBERTO
Postdoctoral Researcher

CAMPILLO MARCOS, IGNACIO
Postdoctoral Researcher

CRESPO GARCIA, EVA
Postdoctoral Researcher

JANIN, MAXIME HENRI
Postdoctoral Researcher

NOGUERA CASTELLS, ALEIX
Postdoctoral Researcher

ORŠOLIĆ, INES
Postdoctoral Researcher

CASADO PELAEZ, MARTA
PhD Student

GARCIA PRIETO, CARLOS ANTONIO
PhD Student

MARTINEZ VERBO, LAURA
PhD Student

POPOV, ANTON
PhD Student

QUERO DOTOR, CARLOS
PhD Student

SANTOS PUJOL, ELOY
PhD Student

VESELINOVA KALAYDZHIEVA, YOANA
PhD Student

XIE, YUMO
PhD Student

FERNANDEZ REBOLLO, IRENE
Junior Researcher

FRANQUESA SANCHEZ, ALEIX
Junior Researcher

SOLER RIERA, MARTA
Lab Technician

MARTIN TARIN, ELVIRA
Entrepreneur

Cancer Genetics

led by Montse Sanchez-Cespedes

Transversal Programme:
Multiscale-Omics

OVERVIEW

Lung cancer causes over 1.3 million deaths annually and remains the deadliest type of cancer worldwide. Although efforts in recent years to fully characterize human cancer on a genetic and molecular level have provided important insights to increase our understanding of the gene alteration profile underlying the development of Lung Cancer, the impact of this knowledge in the survival of patients remains modest. Our group is devoted to the genetic, epigenetic, and molecular study of the mechanisms that drive LC development. Ultimately, our purpose is to implement the clinical management of cancer patients and to design novel therapeutic strategies.

OUR GOALS

Our laboratory is currently engaged in several important projects:

1. Screening for factors that determine tumour immunoescape and the response to immunotherapy.
2. Genomic and genetic profiling of lung tumours to identify novel targets for therapeutics and determinants for the primary and acquired response to tyrosine kinase inhibitors (TKIs).
3. Genetic alterations at epigenetic factors: biological understanding and opportunity for novel therapeutics.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

1. What are the genetic and molecular abnormalities that trigger the development of cancer, particularly Lung Cancer?
2. How can we use genetic/molecular information to identify novel targets to implement Lung Cancer therapeutics?
3. What is the molecular basis for the lack of response to immunotherapy?
4. How can we predict and prevent acquired resistance to targeted therapeutics?

KEYWORDS

Targeted therapeutics; immunotherapy; epigenetic regulation; SWI/SNF-complex; MYC/MAX-pathway

GROUP MEMBERS

SANCHEZ - CESPEDES, MONTSE
Group Leader

ROMERO FERRARO, OCTAVIO ALFREDO
Associate Researcher

SAIGÍ MORGUÍ, MARIA
Postdoctoral Researcher

CUCURULL SALAMERO, MARC
PhD Student

DÍAZ MUÑOZ, ANA CRISTINA
PhD Student

MORILLAS VIÑUALES, JUAN
PhD Student

NAVAJAS CHOCARRO, PABLO
PhD Student

VILARRUBÍ PORTA, ANDREA
PhD Student

BARTOLESSIS ARIAS, ISABEL
Lab Technician

PROS SIMÓN, EVA
Lab Technician

Cancer Heterogeneity and Hierarchies

led by Verónica Rodilla

Transversal Programme:
Preclinical models

OVERVIEW

Our laboratory studies the key signals governing stem cell and cell fate specification during malignant progression and the mechanisms by which different signaling pathways control cell plasticity in cancer. Specifically, we use in vivo lineage tracing, live imaging, cytometry, and expression profile analysis as experimental tools to achieve our goals. Our group combines murine transgenic models, patient-derived xenografts, and 3D organoids to unravel cellular hierarchies within tumours, to gain a better understanding of cancer heterogeneity and drug resistance.

OUR GOALS

Our group is passionate about cellular hierarchies and tumour heterogeneity. Our main lines of research and specific goals are:

1. To illustrate cellular hierarchies within tumours.
2. To discover cytotoxic agents for specific cellular subpopulations.
3. To target the tumour niche to prevent the spread of cancer.

OUR CHALLENGES

We hope to answer the following questions through our research:

1. How can cellular plasticity improve treatment for cancer patients?
2. Can we achieve truly personalized medicine by identifying single or combinatorial therapies to target different cellular populations at the same time?
3. Can we prevent metastasis and/or relapses by targeting the most frequently colonized tissues?

KEYWORDS

Cellular hierarchies, heterogeneity, cell plasticity, senescence, tumour microenvironment

GROUP MEMBERS

RODILLA BENITO, VERÓNICA
Group Leader

GUARDIA VALENZUELA, CRISTINA
Postdoctoral Researcher

BALIBREA RULL, JOAN
PhD Student

ORTEGA ÁLVAREZ, DANIEL
PhD Student

TÉBAR GARCÍA, DAVID
PhD Student

VINUESA PITARCH, ELENA
PhD Student

OLIVARES OSUNA, DAVID
Lab Technician

SYDORENKO, MARIIA
Lab Technician

Cancer Immunogenomics

led by Eduard Porta

Transversal Programme:
Multiscale-Omics

OVERVIEW

Our research lies at the interface of artificial intelligence, molecular biology, and medical oncology, and we bring together experts from all three fields. We use computational approaches to study the interaction between genetic variants in cancer genomes and multiple aspects of cancer, ranging from the immune response against tumours to the susceptibility of cancer cells to different treatments.

OUR GOALS

Our main goal is to understand how genetic variation influences the immune response against cancer cells and vice versa. Specifically, we are working on the following lines:

1. Understanding how inherited genetic variants change the immune response against cancer cells.
2. Understanding how inherited genetic variants interact with biological sex to influence cancer predisposition.
3. Integration of protein structure and genetic data to identify new cancer-associated mutations.
4. Creating a molecular and cellular map of the tumour microenvironment in bladder cancer.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

1. Is it possible to use a person's genetic data to predict whether he/she will develop cancer?
2. Which genes play a role in the development of cancer?
3. How do genetic variants change the immune response against cancer cells?

KEYWORDS

Computational biology, cancer genomics, big data, GWAS, bladder cancer

GROUP MEMBERS

PORTA PARDO, EDUARD
Group Leader

IMBACH, KATHLEEN JANE
PhD Student

SIBAI, MUSTAFA
PhD Student

SHAHID, HIRA
PhD Student

ESCOBOSA OLMO, MARC
Lab Technician

GRASES MENDOZA, DANIELA
Lab Technician

NAGANATHAN, VIKRAM
Lab Technician

Cancer Metabolism

led by Lucas Pontel

Transversal Programme:
Applied epigenetics

OVERVIEW

Our laboratory is dedicated to understanding and exploiting the unique characteristics of cancer that could be targeted to halt the disease. We focus on the metabolic reprogramming of tumour cells, which has been recognized as a defining feature of cancer. Tumour cells often alter their metabolism to support their rapid growth and proliferation. However, these same metabolic reactions also produce harmful toxins, such as formaldehyde and reactive oxygen species, that can damage the cancer cells. Our research aims at identifying the mechanisms that cancer cells use to protect themselves from these toxins, and on exploiting these mechanisms to develop new cancer therapies.

OUR RESEARCH

1. Cellular defences against toxic metabolites in acute leukaemia.
2. Metabolic vulnerabilities in DNA repair deficient tumours.
3. Exploiting tumour-specific vulnerabilities for personalized treatment of refractory myeloid and lymphoblastic leukaemia.

This project focuses on uncovering druggable vulnerabilities in relapsed patients with AML and ALL, who have exhausted all current therapeutic options. We are developing a novel technology to identify druggable dependencies in patient-derived tumour biopsies, thus advising a personalized off-the-shelf drug for the treatment of these refractory cancers.

GROUP MEMBERS

PONTEL, LUCAS
Group Leader

BOURACHED SILVA, NOUR AL YOUSSEF
Lab Technician

Chromatin Biology

led by Alex Vaquero

Transversal Programme:
Applied epigenetics

OVERVIEW

The chromatin biology lab's primary purpose is understanding the mechanisms of the stress response and their impact on cancer and ageing. Specifically, the group focuses its efforts on defining the contribution of sirtuins to this response in the maintenance of genome stability, epigenetics, and metabolic homeostasis.

To fulfil this main objective, the group's work encompasses a wide range of research areas, from basic aspects of sirtuin biology to their contribution in the development of human pathologies such as leukaemia and ageing.

OUR GOALS

We aim at the identification of novel mechanisms and factors involved in the onset and development of blood malignancies, and the creation of tools that could be helpful for its diagnosis and treatment. In this regard, the group's main objectives are:

1. Understand the enzymatic duality of sirtuins and their specific contribution to sirtuin function.
2. Characterize sirtuin-dependent mechanisms of genomic stability.
3. Define the role of sirtuins in B-cell differentiation and characterize their functional implication in cancer.
4. Understand the involvement of sirtuin function in the beneficial effects of nutrient restriction on ageing development.
5. Develop a new methodology to measure the activity of sirtuins *in vivo*.

OUR CHALLENGES

Through our research, we seek to answer the following questions:

1. What is the physiological mechanism associated with the genotoxic and metabolic stress response?
2. What is the contribution of the sirtuin family of enzymes to the maintenance of genome stability after stress?
3. What is the implication of these mechanisms in the onset and development of blood cancers and ageing?

KEYWORDS

Stress response; sirtuins; epigenetics; leukaemia; ageing.

GROUP MEMBERS

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Endothelial Pathobiology and Microenvironment

led by Mariona Graupera

Transversal Programme:
Preclinical models

OVERVIEW

Our research is devoted to study the biology of the endothelium and its role in disease towards the development of therapeutic strategies to target this compartment. Specifically, we aim to discover the fundamental insights of vessel growth and function in developmental setting as well as to identify the pathological contexts in which the vasculature plays a critical role either intrinsically, as in vascular anomalies, or extrinsically as in cancer.

Over the past decade, we have taken advantage of the PI3K pathway as a paradigm to understand how intracellular roads regulate vessel morphogenesis, and how this knowledge can be translated into therapeutic opportunities for diseases with aberrant angiogenesis.

OUR GOALS

The Graupera lab is devoted to 5 main research lines:

1. Insights on developmental vessel growth and function.
2. Understanding oncoproteins-related developmental disorders.
3. To study tumour-stroma interaction.
4. Identify vascular therapies to treat metabolic disorders.
5. To study endothelial and hematopoietic cell interface

KEYWORDS

Endothelium, vascular compartment, homeostasis, next generation sequencing, single cell, high-resolution imaging

GROUP MEMBERS

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MUIXI PONSA, LAIA
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Epigenetics and Immune Disease

led by Esteban Ballestar

Transversal Programme:
Multiscale-omics

OVERVIEW

We aim at understanding the mechanisms underlying the deposition and removal of epigenetic modifications in immune cells, the influence of genetic and environmental determinants, and the acquisition of epigenetic alterations in immune-mediated disease including primary immunodeficiencies, autoimmune and autoinflammatory diseases. We also investigate the impact of the epigenetic regulation of immune cells in the microtumour environment.

OUR GOALS

Our main lines of research and specific goals are:

1. To understand the role of epigenetic control and its upstream determinants in relation with immune function.
2. To identify epigenetic alterations in immune-mediated diseases and investigate their clinical relevance.
3. To investigate the effects of immunomodulators and epigenetic compounds in shaping the epigenome and responses of immune cells.

OUR CHALLENGES

The study of epigenetic dysregulation can help understand the determinants of immune dysregulation and can have an impact in the treatment of these diseases. Therefore, with our research we want to answer:

1. How do immune cells translate the surrounding information provided by the direct contact

with other cells or the cytokines and other molecules into epigenetic profiles that determine their responses?

2. What is the relevance of the epigenetic alterations that are found in different immune mediated diseases in relation to the aberrant function of these cells?

3. How can we apply the knowledge on the epigenetic dysregulation in immune-mediated disease to the clinics?

KEYWORDS

Epigenetics, DNA methylation, Immune-mediated disease, autoimmune disease, primary immunodeficiency

GROUP MEMBERS

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Epigenetic Therapies

led by María Berdasco

Transversal Programme:
Applied epigenetics

OVERVIEW

Epigenetic therapies aim to modify the epigenome, the set of molecular processes that regulate gene expression without altering the DNA sequence and can change the course of a disease and its phenotype. There are now examples of epigenetic drugs for treating haematological malignancies approved by the United States Food and Drug Administration (FDA). However, the volume of promising preclinical evidence far exceeds the number of epigenetic research projects that have resulted in clinical applications to patients. Therefore, more translational studies that may lead to the development of more specific epigenetic drugs and more robust biomarkers are required.

OUR GOALS

Our research aims to ascertain the therapeutic benefit of targeting epigenetic alterations in cancer together with the epigenetic-based stratification of patients to predict therapy response. To achieve this, we develop research based on three specific aims:

1. Identification of the epigenetic alterations that act as drivers of tumour progression.
2. Validation of epidrugs that can efficiently revert aberrant epigenomes in cancer.
3. Stratification of patients based on their epigenetic profile to predict response to immunotherapy.

OUR CHALLENGES

Through our research, we aim to help answer the following questions:

1. Which epigenetic alternations represent targets for drugs to treat cancer?
2. How can we efficiently treat tumours caused by epigenetic alternations?
3. Who could benefit from therapeutic strategies based on epigenetics?

KEYWORDS

Epigenetic drug, epigenetic editing, epidrug, haematological malignancies, targeted therapies

GROUP MEMBERS

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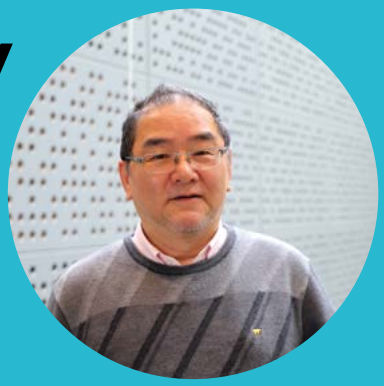
Research Specialist

TREMBECKA, OLIWIA PAULA
Student

Immunohematology and Glycobiology

led by Fumiichiro Yamamoto

Transversal Programme:
Preclinical models



OVERVIEW

We study the molecular genetic mechanisms for the expression of genetically incompatible glycan antigens and have thus far revealed several potential mechanisms, including the appearance of FORS1 induced by the deletion of exon 3 or 4 of the AT mRNA. Because altered splicing is a hallmark of cancer, this mechanism may be responsible, at least partially, for FORS1 expression in group A and AB individuals.

We also investigate the potential mechanism by which incompatible A antigens appear in group O individuals through complementation by recombination of DNA or trans-splicing of RNA and the expression of FORS1 due to changes in specificity resulting from incorrect intra-Golgi localization of modified glycosyltransferases.

OUR GOALS

Cancer growth indicates that the cancer cell-killing activities of natural immunity against genetically incompatible and/or cryptic glycans are ineffective and insufficient. However, they can be improved through active and/or passive immunization. Therefore, our goals are:

1. To investigate the use of genetically incompatible and/or cryptic glycan antigens as molecular targets for medical intervention.
2. To explore the possibility of using forced expression of genetically incompatible glycans to make cancer cells susceptible to natural immunity.

OUR CHALLENGES

If successful, the active immunization we advocate for could revolutionize the cancer treatment landscape, thereby dramatically reducing the financial burdens on patients and society. Through our research, we aim to answer the following questions:

1. What is the molecular genetic/epigenetic basis of glycan alterations in cancer?
2. Can we use cancer-specific glycans as molecular targets for cancer detection and immunotherapy?
3. Does the minitransfusion/injection of mismatched red blood cells expressing genetically incompatible and/or cryptic glycans improve humoral and cellular immunity against cancer cells expressing cancer-specific glycans?

KEYWORDS

Genetically incompatible glycan antigens, cryptic glycan antigens, cancer immunotherapy, disease susceptibility, ABO polymorphism

GROUP MEMBERS

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YAMAMOTO, MIYAKO
Lab Technician

Regulatory Genomics

led by Tanya Vavouri

Transversal Programme:
Multiscale-omics

OVERVIEW

Our aim is to contribute to a better understanding of gene regulation and the consequences of drug treatments and inter-individual genetic variation in gene expression. Although most of our research is based on data from animal model organisms or cell lines, we hope that, in the long term, the knowledge acquired will increase our understanding about humans.

Extensive aberrant gene expression and genome deregulation are extremely common in cancer, especially haematological forms, and treatments targeting gene regulation pathways are being used for haematological malignancies. Last, but not least, we hope that the data we generate and the analysis methods we develop serve as useful tools for the wider research community.

OUR GOALS

Our research focuses on three main areas:

1. Study the effect of the environment on gene expression changes that are transmitted from parents to their offspring.
2. Describe non-coding RNAs and other non-coding elements that influence gene expression.
3. Understand how epigenetic drugs affect gene expression and chromatin in different genomic contexts.

OUR CHALLENGES

We hope that our research sheds light on the following questions:

1. Which epigenetic mechanisms are involved in the transmission of acquired or variable traits between generations in humans and other animals?
2. Which non-coding DNA elements affect gene expression and therefore potentially phenotype?
3. How drugs (such as those used for the treatment of blood cancers) affect gene expression and the function of the non-coding parts of our genome?

KEYWORDS

Bioinformatics, gene regulation, epigenetic inheritance, germline, genomics.

GROUP MEMBERS

VAVOURI, TANYA
Group Leader

MITJAVILA VENTURA, ADRIÀ
Research Specialist

Regulatory RNA and Chromatin

led by Sònia Guil

Transversal Programme:
Applied epigenetics

OVERVIEW

We study the emerging roles of noncoding RNAs as key regulators of gene expression in physiological cellular programs and at the onset or during progression of human diseases, with a major focus on tumorigenesis and neurodevelopmental diseases. The research carried out by our group combines biochemical, cellular, and global genomic approaches to dissect mechanisms of gene expression regulation with the participation of ncRNAs, with the aim of revealing molecules of therapeutic/biomarker interest for clinical translation.

Our interest concentrates on the noncoding transcriptome, with the main aim of separating the wheat from the chaff to reveal true biologically relevant molecules and to understand how they are connected to broader gene regulatory networks.

OUR GOALS

Our research aims to:

1. Gain a better understanding of the biological relevance of ncRNAs for an informed use in therapeutic strategies.
2. Identify ncRNA candidates that act as master regulators of oncofetal genes, thereby revealing their validity as biomarkers in human cancer.
3. Developing new experimental tools for research into Rett syndrome.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

1. What is the precise contribution of the non-coding transcriptome to tumour biology?
2. How can we use RNA tools to improve treatment or diagnosis of human disease?
3. How can we better model neurodevelopmental diseases such as Rett syndrome to understand key initial changes in gene expression programs?

KEYWORDS

Noncoding RNAs, cancer epigenetics, gene expression regulation, stem cells, Rett syndrome.

GROUP MEMBERS

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Lymphoid malignancies

3D Chromatin Organization

led by Biola M. Javierre

Transversal Programme:
Applied epigenetics

OVERVIEW

We are a group of passionate scientists with an insatiable thirst for learning about spatiotemporal architecture of the genome and its role in cell differentiation and function in health and disease.

Although enhancers can be defined through well-characterized features, predicting their target genes at distal location remains challenging due to the high complexity of studying enhancer-promoter interactions, and the large variability according to cell-type and state.

This gap of knowledge is particularly problematic for understanding the molecular mechanisms associated to inherited and de novo acquired mutations and epimutations involved in common human diseases, which are all highly enriched at regulatory elements.

OUR GOALS

Our lab's main research goals, which are motivated by this gap in the knowledge, are as follows:

1. To define the cell type-specific 3D chromatin organization in human haematopoietic cells.
2. To identify the altered DNA topology in blood cancer.
3. To prioritize new candidate genes and pathways related to leukaemia and lymphomas.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

- Can the dynamic changes in chromatin interactions shape the transcription decisions controlling haematopoiesis and blood cell function?
- Which are the blood cell-type specific key factors orchestrating genome architecture?
- How does the altered genome architecture drive malignant transformation?
- What is the role of non-coding determinants in cancer predisposition, development and relapse?

KEYWORDS

Genome architecture, spatial-temporal chromatin organization, haematopoiesis, blood cancer, cis non-coding determinants, enhancer-promoter interactions

GROUP MEMBERS

JAVIERRE MARTINEZ, BIOLA M.
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PLANAS RIVEROLA, AINOA
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TOMÁS DAZA, LAUREANO
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VALERO MARTINEZ, BLANCA
PhD Student

DE HARO BLÁZQUEZ, RAÚL
Junior Researcher

URMENETA FLORISTÁN, BLANCA
Junior Researcher

Acute Lymphoblastic Leukaemia (ALL)

led by Josep Mª Ribera

Transversal Programme:
Multiscale-Omics

OVERVIEW

Our research focuses on analysing the genomic and epigenomic landscape of patients with adult ALL (acute lymphoblastic leukaemia) to find out genetic alterations that predict patients' response to treatment and to identify new alternative (targeted) therapies to apply to those patients. In this way, we aim to design more personalized treatments to increase the probability of survival of ALL patients.

The group's current research is divided into two main areas, according to the two main subtypes distinguished in ALL, Precursor B-cell acute lymphoblastic leukaemia (BCP-ALL) and T-cell acute lymphoblastic leukaemia (T-ALL).

OUR GOALS

We are convinced that new treatments for ALL patients can be obtained only through basic research. Therefore, our goals are:

1. To identify the genetic alterations leading to treatment resistance and disease recurrence in adult ALL.
2. To accurately define the risk of ALL by genetic analysis at diagnosis and relapse to decide on the most appropriate treatment.

OUR CHALLENGES

Although ALL is a rare form of cancer, it has a huge impact on patients, their relatives, and the health system. To find new therapies and provide new knowledge, our research hopes to:

1. Decipher the genetic complexity of ALL at both diagnosis and relapse.
2. Identify critical genetic lesions in ALL cells that could be targetable with new drugs.

KEYWORDS

Acute lymphoblastic leukaemia, adults, genomic analyses, minimal residual disease, treatment resistance

GROUP MEMBERS

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LOPES, THAYSA
Lab Technician

Cellular Immunotherapy and Gene Therapy

led by Javier Briones

Transversal Programme:
Population studies and clinical trials

OVERVIEW

The Cellular Immunotherapy and Gene Therapy Group is focused on the study of genetically modified T-cells expressing chimeric antigen-specific receptors (CARs) and their clinical application in patients with blood cancer.

The group currently focuses on studying T-cells genetically modified with chimeric antigen-specific receptors (CARs) and their clinical application in patients with blood cancer.

OUR GOALS

Our current lines of research concentrate on the following aspects of cellular immunotherapy:

1. Functional antitumor research into subtypes of memory T-cells.
2. Study of the antitumor efficacy of memory stem T-cells genetically modified with CARs.
3. Development of new CARs targeted against haematological malignancies.
4. Development of clinical immunotherapy trials with CAR T-cells on patients with lymphoid neoplasms.

KEYWORDS

CAR-T; T-Cells; Lymphoid Neoplasms.

GROUP MEMBERS

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Lab Technician

Cellular Systems Genomics

led by Elisabetta Mereu

Transversal Programme:
Multiscale-Omics

OVERVIEW

In the interface between genomics, digital pathology, and artificial intelligence ***the Cellular Systems Genomics*** group aims to define the spatiotemporal organization of complex tissues in health and disease, by the identification of key regulatory mechanisms driving heterogeneity in cellular identity and function, particularly in the context of inflammation, inflammatory disorders, and autoimmune diseases.
To address these questions, we will adopt a single-cell perspective, enabling the fine-grained and spatially resolved molecular profiling of tissues.

We will develop new machine learning approaches and open-source tools to unlock molecular mechanisms hidden in large-scale datasets. In a short-term perspective, these methods will help understand disease mechanisms, allowing the stratification of patients based on their molecular and cellular characteristics, ultimately providing new therapeutic targets for their treatments.

OUR GOALS

In the European Pancreas Atlas consortium, we are working to:

1. Build a first version of the Human Cell Atlas of the Pancreas.
2. The integration of distinct single-cell and spatial data types create a comprehensive transcriptional and epigenetic landscape of pancreas cell types within their spatial context.
3. Share user-friendly computational solutions, promoting open science, diversity and supporting an inclusive and collaborative environment.

KEYWORDS

Genomics, inflammation, autoimmunity, single cell, machine learning, computational analysis

GROUP MEMBERS

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Chronic Lymphocytic Leukaemia

led by Carolina Moreno

Transversal Programme:
Multiscale-Omics

OVERVIEW

Our group is constantly making hard efforts to gain further insights into the characteristics of the leukemic compartment and deepen on the impact of the tumour microenvironment. This knowledge can contribute to better understand the biologic events involved in the disease development and be used to develop new strategies for clinical management and therapy and eventually to improve the quality of life of patients with CLL.

OUR GOALS

Through our research, we aim to:

1. Make available better diagnosis, prognosis, and therapeutical strategies in CLL.
2. Extend the knowledge of molecular and cellular events implicated in CLL development.
3. Prevent clinical relapses in CLL.
4. Design feasible approaches to monitor MRD in CLL.
5. Find a cure to CLL patients.

OUR CHALLENGES

Inherent to the disease, CLL patients have a deregulated immune system, which predispose them to have disease complications, including recurrent infections and autoimmune phenomena. The understanding of how the immune cells of tumour microenvironment contribute to maintain the survival of leukemic cells is essential to design future therapeutic strategies aimed, not only at eradicating leukemic cells, but also at restoring the immune system.

KEYWORDS

Chronic Lymphocytic Leukaemia, B-cell receptor signalling, minimal residual disease, liquid biopsy, tumour microenvironment

GROUP MEMBERS

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Lymphocyte Development and Disease

led by Maribel Parra

Transversal Programme:
Applied Epigenetics

OVERVIEW

Acute lymphoblastic leukaemia (ALL) is the most common type of cancer in children under a year old. Even though the chances of survival in infants suffering from ALL have improved significantly in recent years, an exhaustive study of the mechanisms underlying this disease is still required to make further therapeutic advances.

How specific gene expression programs are selected and maintained, thus resulting in the proper generation of B cells, remains a fundamental question in biology. Conversely, how the aberrant establishment of cell- and lineage-specific gene transcriptional programs leads to the development of B-cell malignancies such as leukaemia and lymphoma also requires extensive research.

OUR GOALS

Our group focuses on:

1. To understand how gene silencing is established during normal and aberrant B-cell differentiation.
2. To transfer our basic knowledge in the epigenetics and transcriptional control of B-cell development to the clinical setting for infant B-ALL and DLBCL patients.
3. To implement a 3D organoid platform for DLBCL patient samples to perform compound library screenings aimed at unveiling new drugs for use in combinatorial therapy with current immunotherapy in a personalized manner.

OUR CHALLENGES

Through our research, we aim to answer the following questions:

1. How do B lymphocytes decide their identity? How is gene silencing established?
2. Why does HDAC7 expression improve the prognosis of some hematological diseases?
3. Why is HDAC7 underexpressed in pro-B-ALLA and DLBCL?
4. How can we restore HDAC7 expression in pro-B-ALL and DLBCL to impair disease progression?
5. Can we implement 3D organoids from DLBCL patients aimed at drug screening towards a precision medicine strategy and immunotherapy improvement?

KEYWORDS

B lymphocyte development; Epigenetics; Transcriptional regulation; HDAC; B cell acute lymphoblastic leukemia (B-ALL); Diffuse large B-cell lymphoma (DLBCL)

GROUP MEMBERS

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OCON GABARRO, INGRID
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COLLAZO OTERO, OLGA
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Lymphoid Neoplasms

led by Tomás Navarro

Transversal Programme:
Population studies and clinical trials

OVERVIEW

Our research is focused on the study of rare lymphomas, such as those that affect immunosuppressed patients, in terms of both clinical and genetic aspects. We have made important contributions to this field and our current objective is to reveal genetic and epigenetic characteristics of lymphoid neoplasms that occur mainly in immunosuppressed individuals. The purpose is to identify markers to improve the accuracy with which these patients are managed. Furthermore, we aim to implement liquid biopsy as a tool for diagnosis and follow-up of aggressive lymphomas.

OUR GOALS

Our main areas of research are:

1. Genetic studies on HIV-related lymphomas.
2. Liquid biopsy in aggressive lymphomas.
3. Genetic studies on plasmablastic lymphoma.

OUR CHALLENGES

We expect that the results of our studies will lead to changes in the management of these rare lymphoid neoplasms and improve the poor prognosis of some lymphoid malignancies, such as plasmablastic lymphoma. Through our research, we hope to answer the following questions:

1. What genetic and epigenetic mechanisms are involved in the development of HIV-related lymphomas?
2. Which biomarkers can be used for an earlier diagnosis of lymphoid neoplasms in populations at high risk of developing these disorders, such as HIV-infected and transplanted patients?
3. How can we apply liquid biopsy in the diagnosis and follow-up of aggressive lymphomas?

KEYWORDS

Non-Hodgkin's lymphoma, Hodgkin lymphoma, HIV, Epstein-Barr virus, diagnosis, prognosis, marker, treatment, targeted therapy, early detection

GROUP MEMBERS

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Lab Technician

Lymphoma Translational

led by Gaël Roué

Transversal Programme:
Preclinical models

OVERVIEW

Our research is centred on the development of innovative preclinical models of B-cell lymphoma that can be used to unravel the complex role of tumour-lymphoma crosstalk during the development of the disease and the acquisition of refractoriness in current regimens. To that end, we intend to reproduce the original composition and architecture of tumours in the laboratory to carry out a complete transcriptomic and proteomic analysis and develop new pharmacological entities in collaboration with academic experts and clinical-level pharmaceutical companies, all with a view to fostering the bench-to-bedside transfer of new and tailored therapeutic strategies.

OUR GOALS

Our main areas of research are:

1. Development of a patient-derived xenograft platform for the evaluation of new targeted therapies in aggressive B-cell lymphomas.
2. Modulation of the lymphoid microenvironment by intrinsic protein homeostasis in aggressive B-cell lymphoma.

OUR CHALLENGES

Through our research, we aim to understand the following:

1. To what extent intrinsic protein homeostasis can regulate the complex tumour-stroma crosstalk in different models of aggressive B-cell lymphoma.
2. How germinal centre-derived lymphoma can be sensitized to immune checkpoint blockade therapy.
3. How multiomics analysis of paired treatment-naïve and therapy-refractory B-cell lymphoma can help in the design of efficient and personalized therapies.

KEYWORDS

B-cell non-Hodgkin's lymphoma (NHL), tumour modelling, proteostasis, tumour microenvironment, immunotherapy

GROUP MEMBERS

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Group Leader

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PROFITOS PELEJA, NURIA
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THIROUARD, LAURA
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RAJMONOVA, ANEZKA
PhD Student

VIC, SAMUEL
PhD Student

GORJON DE PABLO, GEMA
Lab Technician

MARIN ESCUDERO, PAU
Lab Technician

PARRA PARRA, JERONIMO
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PELLICER TRAGANT, MIREIA
Research Specialist

Mechanisms of cancer and ageing Lab (South)

led by Salvador Macip

Transversal Programme:
Multiscale-Omics

INTRODUCTION

We study the mechanisms that determine resistance to treatment and relapse in B cell malignancies (especially CLL and DLBCL) and the molecular pathways involved in age-related diseases, with particular emphasis on the role of senescent cells in cancer and ageing phenotypes. We also investigate prognostic/diagnostic markers of ageing and anti-senescent therapies for healthy ageing and as adjuvant treatments for leukaemia.

Since 2008, we are studying combination therapies for B cell malignancies to reduce resistance to treatment and relapse. We are characterizing the mutations that confer resistance to leukaemia cells and looking for markers that could allow the stratification of patients (i.e. finding the right treatment for each patient, in what is called personalized or precision medicine).

OUR GOALS

Through our research, we are trying to answer the following questions:

1. What determines the resistance of B cell malignance to treatments and the eventual relapse, and how can they be prevented?
2. What role do senescent cells play in resistance/relapse of leukaemia and in other age-related diseases?
3. Can anti-senescence drugs be used as adjuvants in leukaemia treatment?

OUR CHALLENGES

We hope to develop new markers for patient stratification and define new combination therapies that can reduce resistance/relapse in B cell malignancies. We want to ameliorate cancer and other age-related diseases.

GROUP MEMBERS

MACIP MARESMA, SALVADOR
Group Leader

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RIUS BONET, JÚLIA
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Multiple Myeloma

led by Albert Oriol

Transversal Programme:
Population studies and clinical trials

OVERVIEW

Our clinical research team participates in the main international collaborative phase I to phase III trials establishing the current standards of care, with a particular focus on the optimal combinations of agents with clinically relevant synergies.

Active trials are already focusing on the efficacy of next-generation combinations, including antibody-drug conjugates, T-cell engagers, and CAR-T cells. We are interested in the identification of subjects unlikely to respond to optimized first-line strategies and, therefore, of ideal candidates for such trials with novel immunotherapeutic approaches.

OUR GOALS

Our main goals are:

1. To define standards of treatment that provide a long-lasting response in most individuals.
2. To identify patients who will probably be cured and will safely remain treatment-free.
3. To identify patients who are unlikely to be disease-free for long with current treatments and search for alternative treatment options that can be applied before recurring disease causes organic damage.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

1. What patients are unlikely to obtain prolonged benefits from current standards?
2. Would they benefit from early intervention with alternative agents?
3. Can we identify patients who will potentially be cured or are unlikely to relapse and safely spare them the burden of continuous therapy?

KEYWORDS

Multiple myeloma, synergistic combinations, immuno-drug conjugates, T-cell engagers, CAR-T cells.

GROUP MEMBERS

ORIOL ROCAFIGUERA, ALBERT
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IBARRA FERNANDEZ, GLADYS
Attending Physician

Nuclear Architecture in Leukemia

led by Grégoire Stik

Transversal Programme:
Multiscale-Omics

OVERVIEW

The main goal of our lab is to understand the molecular mechanisms that induce and control the malignancy of leukemic cells. For that, we combine and integrate state-of-the-art genomics technology, genome-engineering tools, optogenetic and advanced microscopy imaging to study gene regulatory network in human leukemic cells.

We focus particularly on the role of the three-dimensional (3D) genome organization in leukemic phenotype and how fusion protein induced by chromosomal translocation can alter the chromatin organization. Beyond our fundamental discoveries, we aim to uncover new targets and biomedical applications for the treatment of lymphoid malignancies.

OUR GOALS

The research in our lab develops around the following axes:

1. Uncovering the biophysical properties of the chimeric E2A-PBX1 oncogene and its role on 3D genome alteration and pathogenesis of B cell acute leukaemia
2. Identification and characterization of genome topology alteration in B cell acute lymphoblastic leukaemia
3. Characterization of transcription factor mutations and their role in 3D genome organization alteration and leukemogenesis

OUR CHALLENGES

The genome is highly organized in the nucleus into various structures including compartments, domains and loops. These structures are crucial to maintain the physical interactions between regulatory regions and gene expression. The comprehensive integration of the 3D genome organization with other layers of the gene regulatory network is therefore crucial to uncover the molecular mechanisms beyond the disease and identify new potential therapeutic targets.

KEYWORDS

Genomics, 3D genome organisation, Acute Lymphoblastic Leukaemia, Transcription Factors, Translocations

GROUP MEMBERS

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Stem Cell Biology, Developmental Leukemia and Immunotherapy

led by Pablo Menéndez

Transversal Programme:
Preclinical models

OVERVIEW

Our group is interested in understanding the cellular origin, etiology, and pathogenesis of childhood leukaemia. We aim to ascertain the cell in which mutations occur and we strive to discover which cells are responsible for triggering relapses. Furthermore, we work to identify new therapeutic targets and develop more targeted, less toxic therapies. To achieve this, our laboratory uses various approaches, including genetic studies, epigenetic techniques, and animal models, as well as adoptive cell immunotherapy tools.

OUR GOALS

Our group is currently involved in various lines of research in pursuit of the following objectives:

1. To understand the etiology and pathogenesis of leukaemia in breastfeeding infants.
2. To gain a better understanding of the role of bone marrow (BM) stroma in chemoresistance in acute myeloid leukaemia (AML).
3. To improve adoptive cellular immunotherapies against ALL-B, ALL-T and AML.

Our overall goal is to contribute towards curing 100% of childhood leukaemia or convert them into chronic conditions, without generating lifelong toxicities.

OUR CHALLENGES

Through our research, we aim to:

1. Identify the cellular origin, cellular and molecular mechanisms, and the genetic and epigenetic composition of ALL-B in breastfeeding infants.
2. Contribute to the development of new therapeutic strategies in AML targeted towards reducing the resistance mediated through the BM microenvironment and that are particularly effective against LICs.
3. Develop adoptive cellular immunotherapies against ALL-B, ALL-T and AML using allogeneic T-cells without genome editing to eliminate TCR, CD3 and other molecules that play a role in immunological synapse.

KEYWORDS

Paediatric leukaemia, stem cells, immunotherapy, MLL rearrangements, PDX models

GROUP MEMBERS

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APOSTOLOV, APOSTOL KONSTANTINOV
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Stem Cells and Cancer

led by Anna Bigas

Transversal Programme:
Multiscale-Omics

OVERVIEW

Our research group investigates how to generate and maintain the stem cells in the hematopoietic system under physiological conditions but also how these processes are mimicked by the tumours for their perpetuation. We constantly improve our research by implementing novel technology to understand the process of normal and malignant hematopoietic development. Our research includes basic studies at the molecular level to understand cellular processes in the context of mouse models and human patients.

OUR GOALS

We are currently working on several projects that deal with different functional aspects of normal hematopoietic stem cell regulation as well as leukaemia initiating cells:

1. Generation of hematopoietic stem cells.
2. Understanding T Acute Lymphoblastic Leukaemia (T-ALL) development and T-cell lymphoma.
3. GATA2 deficiency syndrome.
4. Understanding cell transformation.

OUR CHALLENGES

Through our research, we aim to understand the following:

1. What signals are imposed in embryonic HSCs that affect the adult hematopoietic system?
2. What are the molecular mechanisms that impose resistance to treatment in T-ALL cells?
3. What are the basic mechanisms that control cell transformation?

KEYWORDS

Embryonic haematopoiesis, T-ALL, CTCL, GATA2, Notch, NFkB, hematopoietic stem cell, leukemic stem cells.

GROUP MEMBERS

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IGLESIAS PIQUERAS, ARNAU
Lab Technician

T-Cell Lymphoma

led by Laura Mondragón

Transversal Programme:
Preclinical models

OVERVIEW

Our research is focused on the better understanding of the molecular mechanisms leading to T cell lymphomas appearance. We will develop our research by determining possible defective mechanisms during thymopoiesis and, by developing preclinical mice models for the study of T cell lymphomas, such as angioimmunoblastic
T cell lymphoma.

With this knowledge we expect to design and validate new therapeutic treatments more specific and effective than the ones currently available to improve patient's survival and quality of life.

OUR GOALS

Through our research, we aim to:

1. Make available new therapies to treat angioimmunoblastic T cell lymphoma and reduce mortality in those patients.
2. To improve life expectancy of patient's suffering from this type of disease.
3. Finding new strategies to improve patient's chances to recover from this disease and significantly improve their quality of life.
4. To unveil the molecular mechanisms leading to T cell lymphoma appearance
5. To provide new therapeutic targets to design more specific and effective therapeutic treatments to fight these group of haematological diseases.

OUR CHALLENGES

There are some questions we are trying to answer with our research:

1. When does defects in T cells leading to T cell lymphoma appearance start?
2. Which are the specific T cell populations responsible for T cell lymphoma induction?
3. Can we design more specific and effective therapeutic treatments for this type of disease?

KEYWORDS

thymopoiesis, t cell lineage selection, T cell receptor, T cell activation, lymphoma

GROUP MEMBERS

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Myeloid Neoplasms

Chromatin, Metabolism and Cell Fate

led by Marcus Buschbeck

Transversal Programme:
Applied epigenetics

OVERVIEW

We seek to bridge the gap between basic molecular research and translational research by exploring chromatin regulation, in particular the molecular biology of histone variants. We aim to exploit this knowledge for the identification of novel intervention strategies for the treatment of blood cancers. We focus on the continuum of myeloid diseases, ranging from the premalignant expansion of altered clones to chronic myelodysplastic syndromes and acute myeloid leukaemia.

OUR GOALS

Through our research, we aim to gain a better understanding of the epigenetic mechanisms that contribute to the development of blood cancers. Particularly:

1. To mine the chromatin regulatory space to identify novel drug targets that can either help improve current treatments or intercept disease at an early asymptomatic stage.
2. To study histones from the protein core of the nucleosome, particularly the variant macroH2A.

OUR CHALLENGES

Through our research, we hope to answer the following questions:

1. How do epigenetic mechanisms operate on the molecular level?
2. How do chromatin and histone variants contribute to cell fate transitions?
3. How can we exploit this knowledge for the development of novel therapeutic strategies?

KEYWORDS

myelodysplastic syndrome, acute myeloid leukaemia, chromatin, nuclear organization, histone variants

GROUP MEMBERS

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Descriptive Epidemiology, Genetics and Cancer Prevention

led by Rafael Marcos Gragera

Transversal Programme:
Population studies and clinical trials

OVERVIEW

One of the main lines of research of the group is the epidemiology of haematological neoplasms, with the aim of determining the incidence, prevalence, and survival of this type of cancer. The results obtained aim to provide useful and reliable information to design and/or improve the appropriate health resources and describe the population trends of this group of diseases.

OUR GOALS

Specifically, our research objectives aim at:

1. Establishing the prevalence, incidence, and survival of myeloid, lymphoid and histiocytosis neoplasms globally and according to the respective subtypes.
2. To analyse the temporal trend of the incidence and survival of haematological neoplasms in the context of the evolving therapeutic background.
3. Determine epidemiological parameters based on sex and age.
4. Carry out etiological studies of haematological neoplasms according to each of the histological subtypes.
5. To study the genetic and environmental risk factors related to haematological neoplasms.
6. Describe the risk factors and epidemiology of multiple myeloma based on its precursor cells.
7. Analyse the associations between comorbidity and the survival of lymphoid and myeloid neoplasms.
8. Evaluate the population effectiveness of new therapies in a real population and the impact on survival.
9. Identify changes in the classification, definition and coding of haematological

neoplasms and establish working protocols to have homogeneous tools that allow epidemiological comparisons at the international level.

OUR CHALLENGES

Through our research, we aim to understand the following:

1. What is the incidence of haematological neoplasms in the territory?
2. What is the survival of each of the histological subtypes of neoplasia?
3. How have changes in the coding of haematological neoplasms over time affected the epidemiological determinants of this group of diseases?

KEYWORDS

Incidence, survival, mortality, lymphoid neoplasms, myeloid neoplasms, histiocytosis, haematological neoplasms

GROUP MEMBERS

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Epigenetic Control of Haematopoiesis

led by José Luis Sardina

Transversal Programme:
Multiscale-Omics

OVERVIEW

We study how aberrant DNA methylation at distal gene regulatory regions poisons the chromatin to trigger corrupted gene expression signatures in cells, thus eventually leading to the onset and progression of haematological neoplasms. This line of research has implications for a broad spectrum of patients suffering from blood diseases sharing an abnormal genome-wide DNA methylation landscape.

OUR GOALS

Through our research, we aim to:

1. Unravel the different layers of intricated epigenetic information that specify which subsets of genes define the cellular identity in every one of the cells of the hematopoietic system.
2. Apply this knowledge to better understand how and when deleterious transcriptional programs leading to cellular transformation are activated.

OUR CHALLENGES

There is an urgent need for novel therapies for acute myeloid leukaemia, since barely any drugs introduced in the last decades have increased the overall survival its patients. Hence, our research aims to shed light on the following questions:

1. What is the interplay between DNA (hydroxy) methylation and chromatin dynamics at distal gene regulatory regions during hematopoietic cell fate decisions?
2. What are the molecular mechanisms underlying the role of TET2 in the epigenetic control of the chromatin at distal gene regulatory regions during leukaemia onset and progression?
3. What is the role of mRNA methylation-mediated post-transcriptional control in myeloid cell differentiation?

KEYWORDS

DNA methylation; TET enzymes; Chromatin; Haematological malignancies; Stem cells

GROUP MEMBERS

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OBIOLS HURTADO, MIREIA
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VALCARCEL XIMENIS, GEMMA
PhD Student

Haematological Diagnosis

led by Josep Nomdedéu

Transversal Programme:
Applied epigenetics

OUR RESEARCH

In our lab, we focus on both malignant and non-malignant haemopathologies to offer better diagnostics, understand its biological characteristics, and develop new treatments. We study acute leukaemia multi-omics and platelet pathologies like thrombocytopenia, thrombocytopathies and thrombosis.

OUR GOALS

Through our research, we aim to:

1. Consolidate the characterization of haematological tumours and complex, rare, and genetic noncancerous hematopathologies.
2. Include the results of mass-analysis genomic and proteomic platforms in diagnostic algorithms and establish prognostic factors for hematological disorders.
3. Develop functional cell culture and animal (murine) models.
4. Consolidate cooperation with the GAIT-2 project, especially regarding platelet and other blood cell participation in thrombosis generation.

KEYWORDS

Malignant hemopathologies, thrombocytopathies, thrombosis

GROUP MEMBERS

NOMDEDÉU GUINOT, JOSEP
Group Leader

Haematological Diseases, Transplant and Cell Therapy

led by Jordi Sierra

Transversal Programme:
Population studies and clinical trials

OUR RESEARCH

Our research focuses on the molecular and cellular physiopathology of blood cancers, particularly on acute myeloid leukaemia (LMA) and chronic lymphatic leukaemia (CLL) where we seek to find new treatment options targeting molecular features. Also, we study the prognostic value of clinical and biological features in malignant hemopathies, like LMA and CLL.

We study the transplant of hematopoietic progenitors and its complications and develop new academic CAR-T cells enriched in T-memory stem cells to treat T and B Hodgkin lymphomas.

OUR CHALLENGES

It is paramount that we improve the prognosis of haematological patients by using new more precise therapies, and less toxic. Therefore, through our research, we aim to:

1. Improve the genotypic and immunophenotypic characterization of AML and CLL, to identify new prognostic factors and administer targeted therapy.
2. Improve the safety and effectiveness of hematopoietic transplantation and expand the number of patients who can benefit from it.
3. Develop new CAR-T products that enhance the currently commercially available ones.

OUR GOALS

The main goals of our research are:

1. Identify new prognostic parameters for risk and therapeutic stratifications.
2. Molecularly characterize acute myeloid leukaemia and determine the prognostic value of known genes and other genes of uncertain significance.
3. Evaluate targeted therapy in cell lines and animal models (together with Dr. Mangues' group).
4. Reduce toxicity and increase the availability of allogeneic transplants.
5. Preclinical (mouse) and clinical studies on immunotherapy for lymphoproliferative diseases. Development of non-commercial CAR-T cell therapies.

KEYWORDS

Hematopoietic transplantation, CAR-T cells, Immunotherapy, Acute Myeloid Leukaemia, Chronic Lymphocytic Leukaemia

GROUP MEMBERS

SIERRA GIL, JORDI
Group Leader

Leukaemia and Immuno-Oncology

led by Laura Belver

Transversal Programme:
Preclinical models

OVERVIEW

Since 2020, our work has focused on the study of the molecular mechanisms driving Juvenile myelomonocytic leukaemia (JMML) and the exploration of alternative therapeutic strategies specifically designed for these patients.
To achieve this, we incorporate different methods into epigenetics, systems biology, functional genomics, and biochemistry, to help address critical questions about the origin and progression of JMML and to identify new therapeutic targets for the treatment of this disease.

OUR GOALS

The specific goals of our research programme are as follows:

1. To create a centralized JMML sample repository and patient-derived xenograft (PDX) collection.
2. To develop a comprehensive molecular analysis of JMML patients to define accurate diagnostic and stratification criteria.
3. To identify new potential therapeutic targets and develop specific therapies for the treatment of JMML.

We are confident that our results will have an important impact on the diagnosis and treatment of JMML by increasing knowledge of the disease and expanding the therapeutic options open to these patients.

OUR CHALLENGES

With our research, we aim to answer the following questions:

1. What is the relevance of non-coding somatic mutations in the generation and development of JMML?
2. Can non-coding mutations predict the prognosis of JMML patients?
3. What are the best therapeutic targets for the development of JMML-specific treatments?

KEYWORDS

Leukaemia, JMML, PTPN11, experimental therapeutics, CAR-T cells, rare diseases, paediatric diseases, sequencing, diagnosis, therapeutic targets, preclinical models, drug discovery

GROUP MEMBERS

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Myelodysplastic Syndromes

led by Francesc Solé

Transversal Programme:
Multiscale-Omics

OVERVIEW

Our research focuses on unravelling the heterogeneity of myelodysplastic syndromes (MDS), mainly using genomic techniques. We study MDS patients who harbor a specific cytogenetic alteration: the deletion of the long arm of chromosome 5. Our aim is to improve the genetic characterization of these patients by studying the impact of adjunct cytogenetic abnormalities on their prognostic stratification; how cytogenetics and mutations can influence the response to lenalidomide treatment; the molecular landscape of MDS through next-generation sequencing techniques; and, finally, intratumoral heterogeneity before and after lenalidomide treatment using single-cell techniques.

OUR GOALS

Through our research, we intend to contribute to a better understanding of MDS from a genomic point of view, contributing to refine the current criteria to diagnose this disease and predict patient outcomes to select the best possible treatment. Hence, our research addresses the following lines:

1. Evaluating the feasibility of using peripheral blood samples to perform genetic analyses (SNP-A and NGS) in MDS.
2. Monitoring mutational burden in low-risk MDS patients using sequential peripheral blood samples to minimize invasive techniques on these patients.
3. Genetic characterization of myelodysplastic syndromes / myeloproliferative neoplasms (MDS/MPN) to define the genetic changes that could contribute to the differential diagnosis and prognostic stratification of these patients.
4. Genetic characterization of therapy-related myeloid neoplasms.
5. Mechanisms of progression from clonal haematopoiesis to MDS.

OUR CHALLENGES

Our research can translate into a more efficient use of public healthcare resources and improve the quality of life for patients. Therefore, we want to shed light on the following questions:

1. How might genomic techniques contribute to refining the current criteria for MDS diagnosis, prognostic stratification, and treatment response?
2. Can peripheral blood samples be useful to monitor MDS patients through next-generation sequencing?
3. Could single-cell studies help us better understand intratumoral heterogeneity and clonal evolution from CHIP to MDS and TRMN (therapy-related myeloid neoplasms)?

KEYWORDS

Myelodysplastic syndromes, chronic myelomonocytic leukaemia, intratumor heterogeneity, myelodysplasia, cytopenia, CHIP, TRMN

GROUP MEMBERS

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Myeloid Neoplasms

led by Lurdes Zamora and Blanca Xicoy

Transversal Programme:
Multiscale-Omics

OVERVIEW

Since 2004, our group has been studying MN, with a particular focus on characterizing genetic and epigenetic lesions to find new diagnostic, prognostic and therapeutic markers that could help us better diagnose and treat patients with these diseases. First, we started with karyotype and single nucleotide polymorphism arrays (SNP-A) to help us detect alterations at chromosome level, and we are currently performing studies at gene level (mutational profile studies) and analyzing the impact that telomere size could have on the development of the disease.

OUR GOALS

Our research focuses mainly on the following areas:

1. Chronic myelomonocytic leukaemia (CMML).
2. The classification and prognosis of the group of diseases termed myelodysplastic syndromes (MDS).
3. Chronic myeloid leukaemia (CML).
4. BCR-ABL1 negative classic myeloproliferative neoplasms (MPNs).

OUR CHALLENGES

Our research is highly socially relevant because we promote capacity building, advancing knowledge, help in making informed decisions and improve the health in general terms, with economic benefits for the whole society. Through our research, we aim to answer the following question:

> How can we improve diagnosis, prognosis stratification, treatment response and life expectancy in chronic myelomonocytic leukaemia?

KEYWORDS

Myeloproliferative neoplasms, chronic myeloid leukaemia, myelodysplastic syndromes, MPN/MDS, acute myeloid leukaemia.

GROUP MEMBERS

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Myeloid Neoplasms (Clínic)

led by Jordi Esteve

Transversal Programme:
Population studies and clinical trials

OVERVIEW

Myeloid neoplasms are a group of diseases in which the bone marrow produces an abnormal quantity of precursors for red blood cells, platelets, or certain types of white blood cells. This leads to a variety of symptoms and from fatigue to bones fragility and, eventually, to a higher risk of developing Acute Myeloid Leukaemia (AML).
Despite the advances produced during the last decades, not all those diagnosed benefit from efficient therapies. Advancing in the knowledge of myeloid neoplasms is, therefore, paramount to increase both prognosis and survival of patients.

OUR GOALS

Our research group is searching for key molecular features of myeloid neoplasms that could be used as therapeutic targets. We are focusing our efforts towards:

1. Myeloma and other monoclonal gammopathies
2. Mechanisms of progression in monoclonal gammopathies
3. Myeloid neoplasms
4. Lymphoid neoplasms

Also, we are seeking to improve the overall knowledge of the neoplasm microenvironment, the conditions where malignant cells live and proliferate, as well as how the body defences respond to it.

GROUP MEMBERS

ESTEVE REYNER, JORDI
Group Leader

Oncogenesis and Antitumor Drugs

led by Ramon Mangues

Transversal Programme:
Preclinical models

OVERVIEW

Current treatments lack selectivity towards cancer cells, which induces insufficient anticancer activity and produces severe adverse effects that limit their dosage. We are developing self-assembling protein-based nanoparticles for the treatment of haematological and solid cancers that are highly selective in targeting receptors overexpressed in cancer stem cells. They display a wide therapeutic window by avoiding renal clearance while internalizing into and selectively eliminating cancer target cells and enhancing the uptake of the payload drug into cancer tissues, with negligible uptake or toxicity in normal tissues.

We have achieved high antitumor and antimetastatic effects using apoptotic, genotoxic or microtubule inhibitor drugs as payloads, and we are now testing novel payloads that use non-apoptotic cell death mechanisms.

OUR GOALS

The aims of our lab are:

1. To develop nanomedicines that can effectively render cancers that have disseminated or relapsed sensitive to therapy by acquiring resistance to current therapy.
2. Ensure that the repeated administration of these novel nanomedicines induces potent anticancer activity, while maintaining low or absent toxicity in normal tissues.
3. Develop a formulation of amyloid structured inclusion bodies whose capacity for the sustained release of therapeutic nanoparticles into the blood could be subcutaneously administered once a month.

OUR CHALLENGES

Ninety percent of cancer patients die of metastases that do not respond to current treatments. Therefore, patients who develop metastases are considered incurable. Through our research, we aim to answer the following questions:

1. Is the selective elimination of cancer stem cells a relevant clinical target to improve therapy in different cancer types with acquired resistance and disseminated disease?
2. Will protein-based targeted nanoparticles that incorporate non-apoptotic and immunogenic cell death polypeptides increase cure, response and survival rates while reducing side effects once tested in patients?
3. What are the underlying mechanisms that dictate the highly selective accumulation of protein nanoparticles targeting the CXCR4 receptor we observe in cancer tissues?

KEYWORDS

Biotechnology, nanomedicine, targeted drug delivery, oncotherapy, metastases

GROUP MEMBERS

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UNZUETA ELORZA, UGUTZ
Postdoctoral Researcher

CARRASCO DIAZ, LUIS MIGUEL
PhD Student

GARCIA LEON, ANNABEL
PhD Student

NAVAS JIMENEZ, LUIS CARLOS
Lab Technician

Transcriptional Dynamics in Leukaemia

led by Sergi Cuartero

Transversal Programme:
Applied epigenetics

OVERVIEW

We study the mechanisms that regulate transcription during hematopoietic differentiation and investigate the leukemogenic potential of mutations in transcriptional regulators and epigenetic modifiers. We are also looking into the role of mutations in proteins that drive the three-dimensional organization of the genome. These mutations alter transcriptional dynamics and can impair normal differentiation.

OUR GOALS

Our main goals are:

1. To understand the role of mutations in hematopoietic transcription factors and chromatin regulators in acute myeloid leukaemia (AML).
2. To characterize the impact of inflammatory signaling on normal hematopoietic differentiation and during leukemic progression.

OUR CHALLENGES

Acute myeloid leukaemia (AML) is the one of the most aggressive forms of leukaemia, and there is an urgent need to find new treatment options. While we now know **what** genes are recurrently mutated in AML, we still do not understand **why** these mutations are malignant. Through our research, we aim to answer the following questions:

1. What transcriptional mechanisms are deregulated in acute myeloid leukaemia?
2. How do inflammatory signals influence leukemic progression?
3. Can we use inflammatory modulation to attenuate the severity of myeloid malignancies?

KEYWORDS

Haematopoiesis; chromatin; AML; MDS; cohesin; inflammation

GROUP MEMBERS

CUARTERO BETRIU, SERGI
Group Leader

LORENZI FARÍAS, LUCÍA
Postdoctoral Researcher

MARTINEZ CEBRIAN, GERARD
Postdoctoral Researcher

CADEFAU FABREGAT, MARIA
PhD Student

JULIA VILELLA, ERIC
PhD Student

PICARDI MORAIS DE CASTRO, CARINI
PhD Student

YERA FERNANDEZ, LAURA
Lab Technician

Transplantation and immunotherapy

Barcelona Endothelium Team (BET)

led by Enric Carreras

Transversal Programme:
Population studies and clinical trials

OVERVIEW

Our group has extensive experience in the study of the endothelial dysfunction that develops in association with different vascular pathologies, such as the early complications associated with hematopoietic cell transplantation, obesity, chronic kidney disease, thrombotic microangiopathies and sepsis.

We also explore strategies for the protection of this endothelial dysfunction to improve patient health. In this regard, one of our main interests is to evaluate different compounds that potentially exhibit the capacity to protect the endothelium and to decipher their mechanisms of action.

OUR GOALS

Our main lines of research are:

1. To characterize the endothelial activation and dysfunction associated with cardiometabolic diseases through in vitro models.
2. To elucidate the mechanisms that lead to endothelial dysfunction.
3. To investigate agents with potential protective effects on the endothelium to prevent complications.
4. To find soluble markers with prognostic and diagnostic value for vascular complications.
5. To study complement pathways and complement deficiencies in thrombotic microangiopathies.
6. To assess platelet physiology and alterations of haemostasis by using perfusion devices to explore adhesive and cohesive properties of platelets under flow conditions.

OUR CHALLENGES

Hematopoietic cell transplantation (HCT) has been the major curative therapy for several haematological, metabolic, and neoplastic disorders. However, the efficacy of this procedure is limited by life-threatening complications, the most important of which is graft versus host disease (GvHD), which has a high mortality rate. Through our research, we aim to answer the following questions:

1. What are the pathophysiologic mechanisms that characterize endothelial dysfunction?
2. How can we avoid the vascular complications associated with hematopoietic cell transplantation?
3. Which is the role of the complement system in vascular complications?

KEYWORDS

Endothelium, Inflammation, Diagnostic and prognostic markers, Thrombotic microangiopathies (TMA), Drugs

GROUP MEMBERS

CARRERAS PONS, ENRIC
Group Leader

PALOMO DE UDAETA, MARTA
Postdoctoral Researcher

YOUSSEF, LINA
Postdoctoral Researcher

DE MONER RAFEL, BLANCA
PhD Student

RAMOS LOPEZ, ALEX
PhD Student

Haematology Research

led by David Gallardo

Transversal Programme:
Population studies and clinical trials

OVERVIEW

The research group in haematology is devoted to clinical and translational trials in haematology, focused on diagnosis, prognosis, and the development of new therapies to treat haematological malignancies such as leukaemia and myelomas.

The group uses a variety of approaches such as genetic studies of the immune response, pharmacogenomics in response to treatment, analysis of polymorphisms as disease predictors and the study of cell populations using flow cytometry for the characterization of residual disease.

OUR GOALS

Through our research, we aim to:

1. Investigate biological, clinical, and epidemiological aspects of haematological diseases.
2. Carry out translational research projects focused on finding prognostic factors or treatment response predictors.
3. Carry out clinical research, promoting participation in clinical trials for haematological diseases and participating in national and international cooperative groups.

KEYWORDS

Haematology, myeloblastic leukaemia, multiple myeloma, chronic lymphatic leukaemia, residual disease

GROUP MEMBERS

GALLARDO GIRALT, DAVID
Group Leader

AGUILAR BALTA, LUIZ ANDRE
Attending Physician

ANGONA FIGUERAS, ANNA
Attending Physician

BLANCO BLANCO, ANTONIO
Attending Physician

BUCH VILLA, JOAN
Attending Physician

BUSTINS TARRATS, ANNA
Attending Physician

CERDÀ SABATER, MARIA
Attending Physician

COLL JORDA, ROSA
Attending Physician

CRUZ GARCÍA, DAVID
Attending Physician

DÍAZ SANTA, JOHANA
Attending Physician

GARZÓN MORENO, ANA
Attending Physician

GONZÁLEZ MONTES, YOLANDA
Attending Physician

KELLEHER, NICHOLAS
Attending Physician

LLOPIS PUIGMARTÍ, FRANCISCA
Attending Physician

LLOVERAS GUELQUE, NATALIA
Attending Physician

MOSTACEDO MARASOVI, SILVIA
Attending Physician

RONCERO VIDAL, JOSEP
Attending Physician

SANTOS CARVAJAL, NAZLY
Attending Physician

SITGES ARRIAGA, MARTA
Attending Physician

TUSET ANDÚJAR, ESPERANZA
Attending Physician

VELARDE LÓPEZ DE AYALA, Mª PILAR
Attending Physician

VILA BOU, JORDI
Attending Physician

GONZÁLEZ BÁRTULOS, MARTA
Research Specialist

LARA GASCÓN, SANDRA
Research Specialist

RODRÍGUEZ ROMANOS, ROCÍO
Research Specialist

CASADO PUERTAS, LORENA
Administrative Assistant

Stem Cell Transplantation and Cellular Immunotherapy

led by Álvaro Urbano-Ispizua

Transversal Programme:
Population studies and clinical trials

OVERVIEW

We conduct research into cell immunotherapy treatments for patients with advanced malignant blood disorders, who tend to have a very short life expectancy. To treat such patients, we develop CAR-T and CAR-NK therapies based on adding chimeric antigen receptors (CAR) to cells of the immune system, such as T-lymphocytes and NK cells, respectively. CARs help recognize and attack tumour cells exclusively, specifically, and effectively, thereby preventing an autoimmune response and reducing secondary effects on healthy cells.

OUR GOALS

The basic aims of the lab are:

1. Study what happens at the molecular level between CAR-T and CB-NK cells throughout the process of recognizing, contacting, and attacking tumour
2. To examine what happens within the environment of the cells when they meet tumour cells.

Through our research, we aim to achieve the best possible scenario: to cure patients and ensure that they do not relapse.

OUR CHALLENGES

If we manage to enhance the efficacy of the CAR-T therapy and its permanence in patients to protect them from relapses, this breakthrough could be applied to patients with types of cancer other than MM. Therefore, through our research we hope to answer the following questions:

1. How are tumour cell resistance mechanisms against immune cells developed?
2. How can these tumour cell resistance mechanisms against immune cells be avoided?
3. How can the persistence and efficacy of CART cell treatment be increased?

KEYWORDS

Multiple myeloma, B-cell malignancies, chimeric antigen receptors, T lymphocytes, NK cells, cord blood-derived NK cells, haematological malignancies, B-cell maturation antigen

GROUP MEMBERS

URBANO - ISPIZUA, ALVARO
Group Leader

Core Facilities

Bioinformatics Unit

The Bioinformatics Unit at IJC provides both internal and external researchers with high-quality computational analysis services covering all project aspects related to clinical and biological data. This includes experimental design and data analysis for microarray experiments and Next Generation Sequencing, statistical consulting, data integration, interpretation and reporting, as well as software development and data management.

The unit further provides training workshops on different bioinformatics related topics, such as working in a Linux environment, the use of high-performance computing (HPC) resources, the R programming language, working with containers, best practices, etc., and supervises students.

General services

- Data analysis, including consulting on experimental design and selection of the appropriate workflow and tools, data visualizations, report generation
- Custom analyses and tailored software development
- Data management, transfer/submission from/to public repositories (GEO, SRA, EGA)
- Support for grant and project proposal writing
- Supervision of students, bioinformatics training

Genomics

- Genotyping and variant calling from whole-exome sequencing (WES), whole genome sequencing WGS, amplicon sequencing and SNP microarrays,

Transcriptomics

- Differential expression analysis from RNA-seq (polyA, totalRNA) and miRNA, mRNA microarrays, target prediction
- Analysis of alternative splicing from RNA-seq
- Variant calling (e.g., RNA editing) from RNAs-eq

Epigenomics

- Analysis of 5mC and 5hmC DNA methylation by microarray (450K, EPIC, mouse), or NGS (whole-genome bisulfite sequencing (WGBS), reduced-representation bisulfite sequencing (RRBS))
- Chromatin analysis by ChIP-seq, DNAse-seq, ATAC-seq

Epitranscriptomics

- Analysis of RNA Protein binding by CLIP-seq (binding and motif prediction)

GROUP MEMBERS

MERKEL, ANGELIKA
Core Facility Leader

BECCHI, LORENZO
Bioinformatician

DE VILLASANTE LLAQUET, IZAR
Bioinformatician

LARIO CRESPO, EMILIO
Bioinformatician

Cell Immortalization Unit

The Cell Immortalization Unit of the Josep Carreras Leukaemia Research Institute offers Infection of B-cells with Epstein–Barr virus (EBV) leads to more and subsequent immortalization. This is considered as the method of choice for generating lymphoblastoid cell lines (LCLs).

Cell culture is an essential tool to study the fundamentals of genetic background variables. With the development of personalized medicine, this applies increasingly to the development and safety testing of drugs. Infection of B-cells with Epstein–Barr virus (EBV) leads to more and subsequent immortalization. This is considered as the method of choice for generating lymphoblastoid cell lines (LCLs). After successfully production of LCLs, different parameters including temperature, serum concentration, type of culture medium, and CO2 concentration must be evaluated on EBV-transformed B-cells. Our unit can produce LCLs and optimize condition.

Applications

- This immortalization technology enables rapid, efficient, and reliable production of unlimited numbers of personalized cells.
- To produce control material for rare genetic disorders.
- Lymphocyte Immortalization technique let to preserve of DNA, RNA, and proteins samples, that appears to be a valid strategy for further studies.
- To determine optimized condition for reliable and reproducible LCLs from different sources.
- Testing drugs analysis.
- Allows us to have enough biological sample without having to access the patient again

GROUP MEMBERS

DE LA TORRE GÓMEZ, CAROLINA
Core Facility Leader

SETIÉN BARANDA, ESTEBAN FERNANDO
Core Facility Technician

Cytogenetics Unit

The Cytogenetics Unit in collaboration with the Hematology Service from Hospital ICO-Germans Trias i Pujol (Badalona) is responsible for analytical tests belonging to the Hematology Service from samples of whole blood, serum, plasma, urine, body fluids, bone marrow, lymph nodes, spleen, and tumour masses. The available analysis includes Cytogenetics (karyotype), FISH and SNP-microarrays (in collaboration with Unit of Microarrays from IJC).

The Cytogenetics Unit includes the Laboratory of Cytogenetics of the Institut Català d'Oncologia (ICO) from Badalona. The Unit process more than 3000 samples per year from ICO Badalona, from ICO Girona and ICO Bellvitge.

Services

- Conventional cytogenetics culture and karyotype performance
- Fluorescence in situ hybridization (FISH) with commercial probes
- QF-PCR.
- Microarrays. SNP microarrays

GROUP MEMBERS

GRANADA FONT, ISABEL
Core Facility Leader

GRAU CAT, JAVIER
Postdoctoral Researcher

CISNEROS SALA, ADELA
Senior Researcher

MÉNDEZ LOPEZ, ALEIX
Core Facility Technician

SANTAFÉ COLLADO, ENCARNACIÓ
Core Facility Technician

VILLENA PERMANYER, M CARMEN
Core Facility Technician

Genomics Unit

The Genomics Unit focuses on the application of high throughput genomic and epigenomic technologies to support cutting-edge biomedical research.

The facility houses specialized equipment to provide genomic services to the IJC community as well as to external customers.

We have long standing experience in genome-wide characterization of DNA methylation profiles using Illumina Infinium Technology (Human MethylationEPIC v2.0 and Mouse Methylation BeadChips).

We offer different levels of service depending upon user needs, including experimental design, sample quality control, processing, and basic data analysis.

Services

Array-based applications

> DNA Methylation analysis
> SNP Genotyping and CNV analysis

Equipment: Illumina iScan with Autoloader system & TECAN Freedom EVO liquid-handling robot

Next Generation Sequencing (NGS) applications

> Targeted resequencing
> Small genome sequencing
> Metagenomics (16S rRNA)

Equipment: Illumina MiSeqDX (for diagnostic testing)

Pyrosequencing applications

> Quantitative analysis of DNA methylation levels
> Determination of DNA variant allele frequencies (SNPs/ indels)

Equipment: Qiagen PyroMark Q48 Autoprep System

DNA isolation from a range of sample types (primary cells, cell lines, frozen and paraffin-embedded tissues)

Nucleic acid quantification and **quality control** assessment

GROUP MEMBERS

PLUVINET ORTEGA, RAQUEL
Core Facility Leader

ARRIBAS JORBA, CARLES
Facility Technician

Microarrays Unit

The Microarrays Unit (UM) is a service focused on DNA and RNA microarray solutions towards a personalized medicine and participates in the Cytogenetic European Quality Assessment (CEQA).

Molecular cytogenetics

Microarray studies can offer various solutions for cytogenetic applications:

> Detection of whole genome gains and losses at a high resolution.
> Analysis of whole genome absences of heterozygosity.
> SNPs genotyping and genome-wide association studies.
> RNA Analysis Solution

Gene expression profile studies on either human or mouse are suitable for:

> Detection of genes and pathways involved in diseases, treatment responses and biological processes.
> Predictive models based on gene expression profiles.
> Pharmacogenomics and toxicogenomics studies.
> Alternative splicing detection.
> Classification of samples on gene signatures.
> Analysis of miRNA.
> Microarray analysis on compromised samples with degraded and/or low quantity samples.
> Quality sample analysis

In addition, to the microarray procedure we also offer:

> DNA and RNA quantification and quality control analysis.
> Optical genome mapping (OGM) (Bionano) to detect structural and copy number alterations at a high resolution.
> Hand made FISH probes from the CHORI BAC collection.

High throughput qPCR

The Biomark HD system is a high throughput qPCR that runs IFCs in either real-time or end-point read modes, bringing PCR solutions to a range of applications. The 48x48 Dynamic Array combines up to 48 samples and 48 assays, generating 2304 different assays in one single run. The 96x96 Dynamic Array combines up to 96 samples and 96 assays, generating 9216 different assays. In addition, the FLEXsix IFC incorporates six 12x12 partitions that can be organized in any configuration, in up to six separate experimental runs.

Applications

> Genotyping
> Targeted Gene expression
> Digital PCR

Equipment

> Affymetrix/Thermofisher Research Platform: GCS3000 with autoloader
> Agilent Bioanalyzer 2100
> NanoDrop 2000 Spectrophotometer
> Saphyr (Bionano) equipment for OGM. Renting

GROUP MEMBERS

MALLO FAJULA, MARIA DEL MAR
Core Facility Leader

ABEL CAMPOS, MARIA
Core Facility Technician

ARANEDA TAPIA, RICARDO ANDRES
Core Facility Technician

CARES BESUALTO, CAROLINA
Core Facility Technician

DE HARO CAMPS, NURI
Core Facility Technician

SILVERIO AYALA, AIDA
Core Facility Technician

TIJERO SANTOS, JESSICA
Core Facility Technician

Proteomics Unit

The Proteomics Unit of the Josep Carreras Leukaemia Research Institute, part of the Carlos III Health Institute (ISCIII) and the Proteomics Network ProteoRed, offers mass spectrometry services to the academic and to the private sector under request.

The unit's main activity is to promote the incorporation of proteomics as a key tool for the development of clinical and basic projects at our institution. Our main work consists of offering innovative, high-quality proteomic and peptidomic services that allow the best therapeutic and human health solutions to be selected.

Biomarker discovery from a wide range of samples to improve precision medicine at different levels: a) early diagnostic, and b) prognosis to predict disease progression and guide treatment selection.

How do we support you?

- By providing scientific and technological support to high-level research projects in the field of proteomics according to international standard procedures.
- By providing researchers with scientific advice, from the project's planning and experimental design stage to the execution phase, processing of samples and interpretation of results, and support during presentations and writing of results for publication.
- Through dissemination and training for researchers on the methodology and applications of the techniques offered.
- By contributing to the promotion of innovation in health technologies and the transfer of the knowledge generated to the public health service, and supporting genetic, epigenetic and pharmacogenetic diagnosis.

Our services

Proteomic analysis is a very powerful approach to addressing key challenges in clinical and health research. This approach can be used for different aspects of clinical and health sciences, such as biomarker discovery, drug target identification and food technology.

GROUP MEMBERS

DE LA TORRE GÓMEZ, CAROLINA
Core Facility Leader

BAUZA MARTINEZ, JULIA
Postdoctoral Researcher

BRENELLI DE LIMA, TATIANI
Postdoctoral Researcher

ESPINOSA ALCANTUD, MARIA DOLORES
Postdoctoral Researcher

BECH SERRA, JOAN JOSEP
Research Specialist

DIAZ RIERA, ELISA
Core Facility Technician

GONZÁLEZ NIETO, JÈSSICA
Core Facility Technician

JARNE SANZ, IGNASI
Core Facility Technician

MARTINEZ LASTRA, CARLOTA
Core Facility Technician

TRIGUERO OLMO, CARLA
Core Facility Technician

Sample Handling Circuit Unit

The Josep Carreras Leukaemia Research Institute (IJC) location ICO-GTP houses the Germans Trias i Pujol Hospital and Institute (IGTP-HUGTP) Sample Handling Circuit Unit, which manages the processing and storage of voluntarily donated samples of haematological neoplasms.

The samples are stored in the collection entitled "IJC Leukaemia and other blood disease" Sample Collection. The IJC Sample Handling Unit receives the bulk of its samples from the Catalan Institute of Oncology at the Germans Trias i Pujol Hospital (ICO-HUGTP, Badalona). Samples received from other hospitals are processed in an identical way.

The technical staff of the IJC have created a database of patients, donors and samples received and processed according to required specifications for the tracking of each sample in the collection. The staff verify the quality, security and tracking of the data and samples throughout the process and starting at extraction. Every year the Unit process and cryopreserve approximately 1000 samples from patients with hematologic cancers.

GROUP MEMBERS

SOLE RISTOL, FRANCESC
Core Facility Leader

ARANDA CEBRIAN, JESSICA
Core Facility Technician

GONZALEZ ALEMAN, YLENIA
Core Facility Technician

JANSAT VILALTA, NÚRIA
Core Facility Technician

RUIZ CORTÉS, ROCÍO
Core Facility Technician

Single Cell Unit

The Single Cell Unit aims to provide scientific services to the Josep Carreras Institute community and is equipped with cutting-edge technology to apply single-cell technology to basic and translational genomic and transcriptomic studies.

Single Cell approaches allow us to identify cell populations that are impossible to isolate with less resolute technologies previously used, such us bulk sequencing, allowing to characterize cell populations and thus identify differences at the genetic and phenotypic level within tumour tissues.

These techniques can, therefore, reveal the cellular heterogeneity of tumours and help identify cells resistant to standard treatments or more prone to proliferate.

The Single Cell Unit is equipped with 2 Chromium Controller (10x Genomics), for single cell analysis at the transcriptomic level, a Nikon ECLIPSE Ti Series inverted microscope and a CytAssit equipment (10X Genomics), for spatial transcriptomics at tissue level and a Tapestri platform (Mission Bio), for single cell analysis at the genomic and proteomic level.

These technologies provide a comprehensive, scalable solution for cell characterization, gene expression profiling and DNA sequencing of up to tens of thousands of cells.

Services

ChromiumTM Controller (10x Genomics):

> Single-cell RNA-seq (gene expression)
> Single-cell RNA-seq (gene expression) + Feature Barcoding
> Single-cell Immune profiling (GEX 5' + TCR/BCR)
> Single-cell ATAC-seq
> Single-cell Multiome (ATAC + GEX)

Spatial Transcriptommics (10X Genomics):

> Visium Spatial Gene Expression for Fresh-Frozen (FF) tissues
> Visium Spatial Gene Expression FFPE tissues
> Visium CytAssist Spatial Gene Expression for FF & FFPE tissues

Tapestri Platform (Mission Bio):

> Single-cell targeted DNA-seq (mutation analysis)
> Single-cell targeted DNA-seq (mutation analysis + CNV analysis)
> Single-cell DNA-seq + cell-surface protein analysis

GROUP MEMBERS

MATA GARCIA, CATERINA
Core Facility Leader

COLETO MARTIN, PAULA
Core Facility Technician

GARCIA TERCERO, LAURA
Core Facility Technician

LÓPEZ JIMÉNEZ, LIDIA
Core Facility Technician

PÉREZ GARRIDO, MARIA ELENA
Core Facility Technician

Management Units

Management

Together with Dr. Manel Esteller, Ana Garrido is part of the management team that contributes to the development of the general policy and strategic planning, enabling and translating scientific vision and strategic objectives into a clearly articulated operational strategy.

Her main objectives as Strategy and Acting Managing Director are:

- Strategic and operational organization of the Institute.
- Management, in accordance with the marked guidelines of the governing bodies, of human resources, hiring staff, incidents, separation and termination of employment contracts, HR organizational policies, as well as the management of scholarships and grants, encouraging policies of Corporate Social Responsibility and attracting and retaining talent.
- Detection of the needs derived from the activity of the Institute Research Groups and the rest of the units from the economic and management point of view.
- Implementation of an agile model focused on researchers that favours their performance and the best concentration in scientific activity.

The Economic Development Manager manages and coordinates the financial control of the Institute. Her main functions are linked to the control and supervision of finances and, ultimately, she acts as a link between the Institute's management and accounting.

GROUP MEMBERS

GARRIDO ANGLADA, ANA
Strategy Director and Acting Managing Director

BOIX MONTEMAYOR, HEURA
Economic Development Manager

Business Development Unit (Middle East)

The ME Business Development Manager is in charge of the Institute's growth strategy in the Middle East Region. She analyses and identifies new opportunities for the Institute to expand by developing partnerships with key international actors in the health and research sector of the ME region.

GROUP MEMBERS

EL-GHAUCHE EL-HALLAK, RANIA
International Business Development Manager

Communication Unit

Passionate about spreading the latest discoveries of our scientists and bring their research efforts closer to society, in any form. The unit strives to keep our partners closer and updated, and to foster the staff's sense of belonging.

GROUP MEMBERS

DÍAZ LÓPEZ, HELENA
Communication Manager

BADAL SOLER, MARTI
Communication Specialist

BERZOSA FERNÁNDEZ, BEATRIZ
Communication Specialist

OLMO GONZÁLEZ, AINOA
Communication Specialist

Data Management Unit

Aimed at delivering and maintaining all necessary infrastructure to efficiently keep institutional data available at all levels: strategic, technical, administrative and for transparent accountability in front of local or international management bodies.

GROUP MEMBERS

CARRIO REIG, MARTA
Data Manager

DE HIGES ALBERICH, PAU TADAYUKI
Data Specialist

Finance Unit

Its mission is to keep track of the actual finance situation of the Institute, rigorously and transparently, to support data driven strategic decision making in the short, medium, and long run.

GROUP MEMBERS

CALONGE CORTÉS, MARIA CRISTINA
Finance Manager

AMADO BALLANO, ERIKA
Finance Specialist

CARPALLO LOAYSSA, LYDIA
Finance Specialist

FINESTRES MARTINEZ, XAVIER
Finance Specialist

MATOS SILVA, AWILDA
Finance Specialist

MURE FERNANDEZ, MIREIA
Finance Specialist

VILANOVA CUADRA, YAIZA
Finance Specialist

Human Resources Unit

Its mission is to plan, organize and execute all processes related to the professional development of the staff and their commitment with the organization, within the framework of current regulations, including training opportunities and occupational risk prevention.

GROUP MEMBERS

CHICO GENEROSO, LETICIA B.
HR Manager

LATORRE REQUELME, IRENE
HR Specialist

SOUIRJI GOMEZ, SOFIA
HR Specialist

VARGAS SOLETO, BRIAN
HR Specialist

VERA SANCHEZ, MIREIA
HR Specialist

Infrastructure Unit

This Unit assures the proper functioning of all the facilities of the Institute. It coordinates facility maintenance and janitorial services and guarantees efficient and effective delivery of logistics for on-site activities.

GROUP MEMBERS

TORRES PALENZUELA, SERGIO
Infrastructure Manager

ALONSO BELTRAN, DOMINGO
Infrastructure Specialist

LOPEZ GONZALEZ, CARLOS
Infrastructure Specialist

PEREZ GARCIA, MARIA ISABEL
Recepcionist

FERNÁNDEZ GARCÍA, SANDRA
Recepcionist

Innovation Unit

In order to promote, maintain and invigorate knowledge and technology transfer at the Institute the main objectives of the Innovation Unit are: to establish a culture of innovation, valorisation and translation of results among professionals; to promote the effective transfer of the research results for the benefit of health especially for leukaemia patients, and to align the technology produced with the market and the industry.

To this end, the Innovation Unit explores the development of collaborative projects with centres and companies; providing specific training actions to research staff and management to improve and enhance the efficiency of public-private co-operation; systematizing communication both internally and externally; giving support to research in terms of intellectual property and innovation-related competitive calls, developing regulations according to current legislation, and promoting the diffusion and commercialization of its technology portfolio.

GROUP MEMBERS

RIERA GUERRA, ANNA
Innovation Manager

GINES MOLINA, ALBA
Project Manager

IT Unit

The unit's objective is to support the Institute's staff in the use and purchasing of IT components -hardware, software, and systems and keep the institutional IT systems online and secure while ensuring its efficiency.

GROUP MEMBERS

JUBANY LÓPEZ, MARC
IT Manager

ALCANTÁRA RUIZ, JOSE ANTONIO
IT Specialist

CONTRERAS PEÑA, FRANCISCO
IT Specialist

Lab Management Unit

Its aim is to support researchers in their daily work in laboratories so that their research can be carried out with the best equipment, in the best state and with maximum safety.

GROUP MEMBERS

PEREZ LADAGA, ALBERT
Lab Manager

GARCIA FERRAN, ALBA
Lab Technician

MORENO ZAMBRANA, ELISABET
Lab Technician

Purchasing Unit

The unit's aim is to optimize purchasing at the institutional level according to the legal framework for public research bodies, to be more efficient, fast, and agile, avoid unnecessary costs and save resources for research.

GROUP MEMBERS

REYES IBORRA, LAIA
Purchasing Manager

ALVAREZ MOYANO, JESSICA
Purchasing Specialist

BLANCO RUIZ, RUTH
Purchasing Specialist

MONTSERRAT SANCHEZ, QUIQUE
Purchasing Specialist

VERGÉS COLOMINAS, ANNA
Purchasing Specialist

Research Grants Unit

Its objective is the attraction of public and private competitive funding, both nationally and internationally, as well as the proactive management of the granted research projects. They support researchers throughout the life cycle of projects, from the detection of opportunities, the preparation of proposals and the training of research consortiums, to the management of projects in all areas beyond the economic.

GROUP MEMBERS

GIL GUIÑON, ESTEL
Strategic Projects' Manager

GARCIA GALAN, MARIA JESUS
Project Manager

MARGARYAN, MELINE
Project Manager

LAGUNAS VILA, LAIA
Project Manager

MANCUSO PONCE, CHIARA
Project Manager

MARTIN NUÑEZ, MARTA
Project Manager

MARTINEZ ESCRIBANO, BEATRIZ
Project Manager

PADIAL MELIÁN, VERÓNICA
Project Manager

RODRIGUEZ AYUSO, NURIA
Project Manager

SORO ARNAIZ, INES
Project Manager

SPINOSA, VITTORIA
Project Manager

DOLSET VILLALOBOS, SARAI
Project Support

Support Unit

The Support Unit supports the governing bodies of the Institute in daily administrative tasks, agendas as well as in travel procedures.

GROUP MEMBERS

MARIN MANZANERA, ESPERANZA
Management Assistant

IZQUIERDO SÁNCHEZ, IRMA
Management Administrative Assistant

FARRÉ VIADER, LAURA
Management Assistant

Travel Unit

The Travel Unit facilitates the international mobility of the Institute's researchers by managing flights and hotels bookings as well as any other travel-related costs in an effective and cost-efficient manner.

GROUP MEMBERS

MATOS BERGADA, LAURA
Travel Administrative Assistant


Institut de Recerca
CONTRA LA LEUCÈMIA
Josep Carreras

Communication

New Institutional Website

This 2023, the Josep Carreras Leukaemia Research Institute launched its new institutional website:

www.carrerasresearch.org

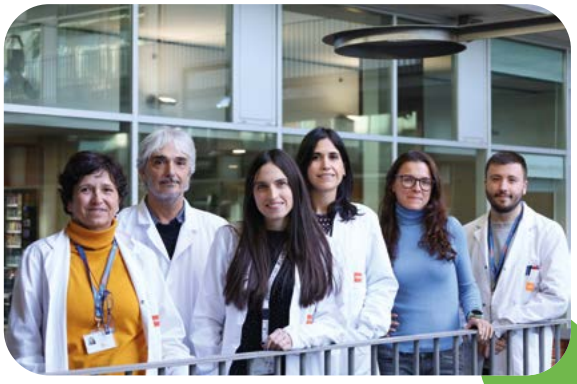
With a new corporate visual identity and offering a better user experience, this brand-new website offers the latest news, publications and activities of IJC researchers as well as comprehensive institutional information.

Selected Press Releases

January

Pathway identified for overcoming treatment resistance in a particular type of leukaemia. A study led Dr. Anna Bigas, Principal Investigator of the Stem Cell and Cancer Research Group at the Josep Carreras Leukaemia Research Institute and the Hospital del Mar Medical Research Institute, has revealed the key role a protein plays in identifying patients with T-cell acute lymphoblastic leukaemia who will not respond to standard treatment.

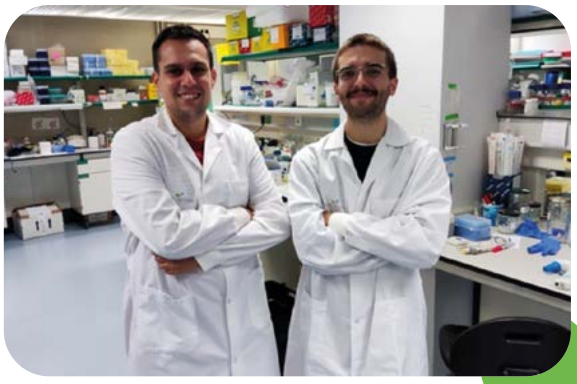
https://www.carrerasresearch.org/en/news/pathway-identified-for-overcoming-treatment-resistance-in-a-particular-type-of-leukemia



Researchers from the Hospital 12 de Octubre and the Josep Carreras Institute create a cell therapy based on STAb cells for a type of leukaemia with few treatment options. Researchers of the Hospital Universitario 12 de Octubre in Madrid and the Josep Carreras Leukaemia Research Institute have developed

a cell therapy for a type of leukaemia which currently has very few treatment options. The innovative STAb therapy has been developed thanks to funding from the Spanish Association Against Cancer (AECC).

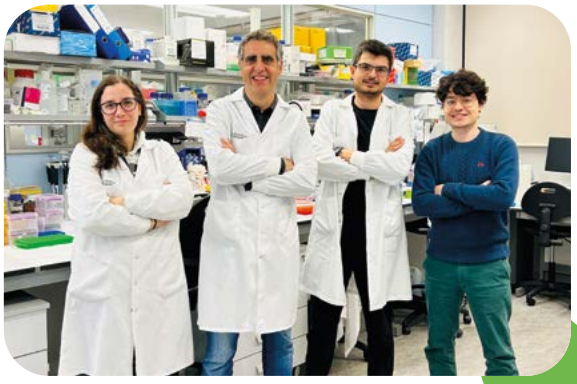
https://www.carrerasresearch.org/en/news/researchers-from-the-hospital-12-de-octubre-and-the-josep-carreras-institute-create-a-cell-therapy-based-on-stab-cells-for-a-type-of-leukemia-with-few-treatment-options



February

A study by the Cancer Epigenetics group selected among the best articles in Leukaemia. The high-impact journal Leukemia recognizes a study of the Cancer Epigenetics Group, led by Dr Manel Esteller at the Josep Carreras Leukaemia Research Institute, among the "Readers Choice: The best of Leukemia 2022". The research describes how highly proliferative leukaemia cells end up becoming normal cells that no longer multiply, by changing the epigenetic modifications of a type of its genetic material: the messenger RNA.

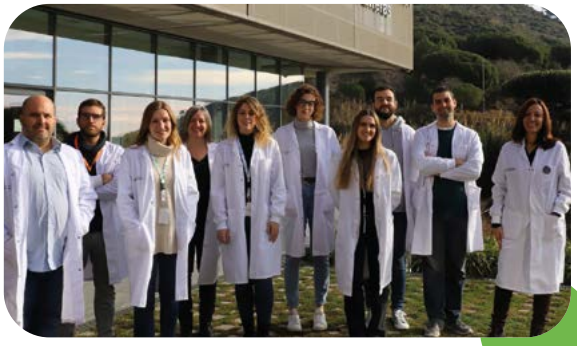
https://www.carrerasresearch.org/en/news/a-study-by-the-cancer-epigenetics-group-selected-among-the-best-articles-in-leukemia



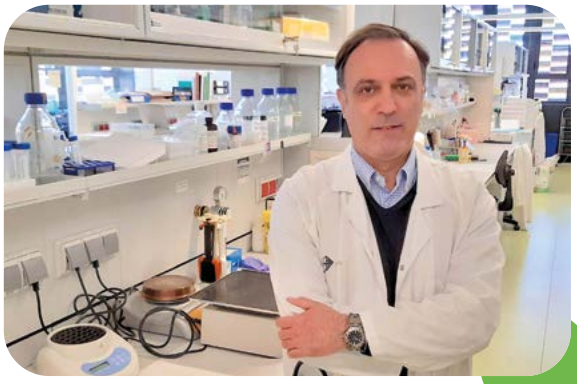
April

Researchers find out why some lung tumours avoid immunotherapy and how to predict it in advance. The oncogenic activation of MYC, a critical gene in cancer progression, has the potential to identify lung cancer patients who may respond poorly to immunotherapy (ICB). This is the main conclusion of a study recently published by a team of researchers led by Dr. Montse Sanchez-Cespedes, Principal Investigator of the Cancer Genetics group at the Josep Carreras Leukaemia Research Institute. Their findings highlight a major contributor to poor response and suggest a new approach to selecting patients who will benefit from ICB or require alternative treatments well in advance.

https://www.carrerasresearch.org/en/news/researchers-find-out-why-some-lung-tumors-avoid-immunotherapy-and-how-to-predict-it-in-advance



May



Launch of a clinical trial with CAR-T against lymphoma, developed by Dr. Briones, member of the Josep Carreras Institute. The first patients are being treated with a CAR-T drug against B lymphomas in a Phase I study. This new advanced therapy drug offers a therapeutic proposal, unique in Spain, for patients with some types of lymphatic cancer that have not responded well to conventional treatments. CAR-T 19 SP is the second drug of this type produced and developed entirely at the Research Institute of the Hospital de la Santa Creu i Sant Pau - IIB-Sant Pau, which already has two academic CAR-Ts of its own production. The research project is led by Dr. Javier Briones, head of the Cellular Immunotherapy and Gene Therapy Research Group at IIB-Sant Pau, member of the Josep Carreras Leukaemia Research Institute and head of the Clinical Haematology Unit of the Haematology Service of the Hospital de Sant Pau.

https://www.carrerasresearch.org/en/news/launch-of-a-clinical-trial-with-car-t-against-lymphoma-developed-by-dr-briones-member-of-the-josep-carreras-institute

Genomic studies gain importance in the diagnosis of new generation in hematologic cancer. The researchers Eulàlia Genescà and Francesc Solé, from the Josep Carreras Leukaemia Research Institute, have organized the third edition of the course NEXT, New Generation Diagnosis in Leukaemia; together with the Spanish Society of Hematology and Hemotherapy (SEHH). The course, which has the support of the Spanish Program for Hematology Treatments (PETHEMA) of the SEHH, has shown that the diagnosis of leukaemia, and of haematological cancer in general, is at the same level in Spain as in countries with a recognized track record, according to both experts.

https://www.carrerasresearch.org/en/news/genomic-studies-gain-importance-in-the-diagnosis-of-new-generation-in-hematologic-cancer

July

IMMERGE: A New Generation of Experts in Immunodeficiencies in Europe will be trained at the Josep Carreras Institute. Dr. Esteban Ballestar and Dr. José Luis Sardina, Group Leaders at the Josep Carreras Leukaemia Research Institute, will coordinate the IMMERGE project (Storming Immune Monogenic Conditions through Multiomic and Gene Editing Approaches). This project is a Marie Skłodowska Curie Action Doctoral Network funded by the European Commission under the Horizon Europe framework programme. Its objective is to train 12 Doctoral candidates to become world-class experts and provide new answers to tackle primary immunodeficiency patients.

https://www.carrerasresearch.org/en/news/immerge:-a-new-generation-of-experts-in-immunodeficiencies-in-europe-will-be-trained-at-the-josep-carreras-institute-

August

A proteogenomic approach offers the deepest and broadest view of what happens into a cancer cell. Dr. Eduard Porta, group leader of the Josep Carreras Leukaemia Research Institute, together with researchers from the Clinical Proteomic Tumor Analysis Consortium, describes in a recent study in the journal Cell how DNA alterations in cancer driver genes translate into specific malfunctions in the cell's machinery, leading to its oncogenic transformation.

https://www.carrerasresearch.org/en/news/a-proteogenomic-approach-offers-the-deepest-and-broadest-view-of-what-happens-into-a-cancer-cell%0D

November

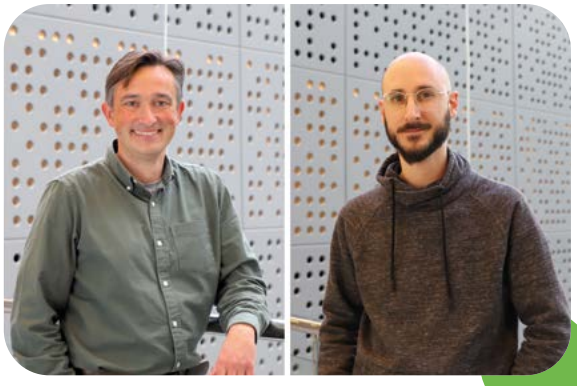
New research from the Josep Carreras Institute identifies a key protein in blood vessel's growth. New research led by Dr. Mariona Graupera, group leader at the Josep Carreras Leukaemia Research Institute, identifies the class II PI3K-C2b protein, a member of the PI3 family of kinases, as one of the key regulators of blood vessels growth in humans and other mammals. Mutations in these family of proteins may lead to vascular malformations and the precise understanding of the whole process is instrumental in opening the door to new therapeutic approaches in the future.

https://www.carrerasresearch.org/en/news/new-research-from-the-josep-carreras-institute-identifies-a-key-protein-in-blood-vessels-growth

December

RegioneReloaded software boosts the analysis of how multiple genomic datasets are associated. Researchers from the Buschbeck lab at the Josep Carreras Leukaemia Research Institute have improved their previous package RegioneR to allow it to analyse multiple region sets along complete genomes in a computationally efficient way. The new software, named RegioneReloaded, will be used to compare the relative positions of multiple genomic features, like transcription factor binding sites or methylation hot spots, all at once, to extract valuable information on how the genome is organised in health and disease.

https://www.carrerasresearch.org/en/news/regionereloaded-software-boosts-the-analysis-of-how-multiple-genomic-datasets-are-associated



Scientific Dissemination

The Josep Carreras Leukaemia Research Institute is a public institution with a strong commitment towards society. On this regard, the Institute is constantly seeking for new ways of disseminating the results and impacts of our research. It is precisely for this reason that bringing the research of the Josep Carreras Institute closer to the public is one of our fundamental values.

During 2023, the communication team has been strengthening all the communication channels of the institute, either online (X, formerly known as Twitter, Instagram and LinkedIn) or offline (direct contact with our publics). As a result, there has been a significant growth in our audience and some of the programmes have been reorganized to offer a better experience, like InstiCiència and the summer internships from high school students.

As a strategic partnership, during 2023 the institute has signed a new agreement with the Catalunya La Pedrera Foundation to offer a training programme in the framework of the Barcelona International Youth Science Challenge (BIYSC) and host a group of international students for two weeks in a high-level training.

A second strategic partnership was established with the Badalona's city council to create a popular science event during the Science Week, in November. Under this agreement, the Institute organized an evening with open talks and workshops in the City Hall and also in the street, to get into close contact with our neighbours downtown. This event is called to be repeated every November and become the seed of a larger Science Festival in the future.

"A handful of science" is an outreach activity for kids admitted in paediatric facilities. The action consists of three different workshops aimed at providing quality entertainment to patients, aged 6 to 17, pulling them out of their daily routine at the hospital. As a secondary objective, the project intends to foster trust in science and knowledge and provide some biological context to their personal situation.

The workshops of "A handful of science" have received full funding from La Caixa Foundation and are equipped with high-end experimental and communication materials, in the hands of the Josep Carreras Leukaemia Research Institute

Outreach professionals. The project has already secured visits to the paediatric units of the main Catalan hospitals during 2024.

In addition, we participated in the main scientific dissemination events in Barcelona and Catalonia through talks and workshops. These actions are indicated in the list below:

- UB Science Festival, organized by the University of Barcelona, where Dr. Esteller is chairman of genetics, we presented a workshop aimed at understanding the vulnerabilities of cancer cells.
- Barcelona Science Festival, organized by the City Council through the Barcelona Institute of Culture (ICUB), giving a talk and a workshop on DNA visualisation and staining.
- European Research Night, organized by the Catalan Association for Scientific Communication with funding from the European programme MSCA a workshop on onion DNA purification by using simple chemicals at the Horta Library.
- #100tifiques, organized by the FCRi and the BIST: networking and talks in schools by researchers from the centre on the day of Women and Girls in Science, February 11th.

It is worth mentioning that all the Conferences and Seminars organized by the Institute have been transformed into hybrid events with online streaming. These talks are delivered by national and international speakers and have the aim to facilitate access to the latest developments in leukaemia research.

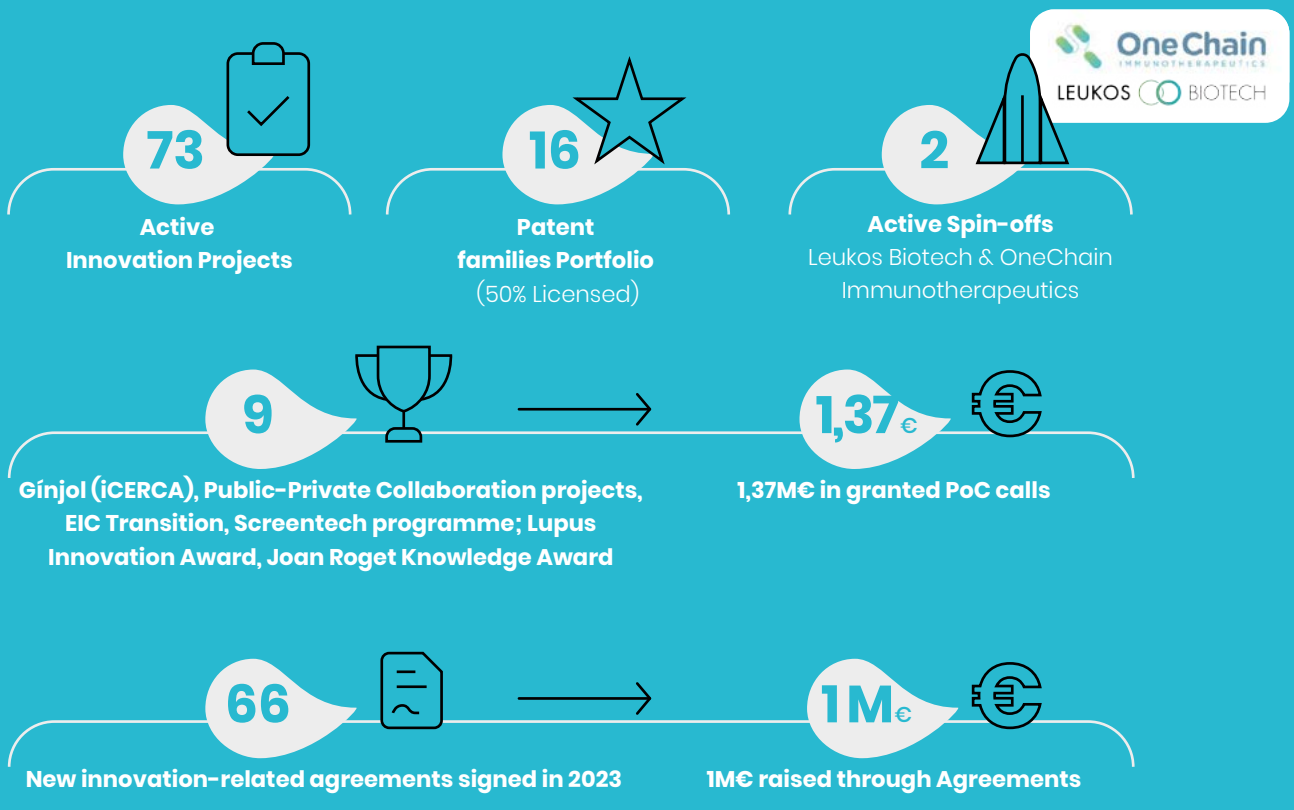
The Josep Carreras Leukaemia Research Institute has maintained its collaboration with the Josep Carreras Foundation, with whom we have close ties. Every year, the Josep Carreras Foundation celebrates the Unstoppable Day and the Week against Leukaemia, organizing activities for patients, relatives and civil society. Researchers from the Josep Carreras Leukaemia Research Institute participated in the 2023 edition of the Unstoppable Day as experts in round tables and lectures aimed at informing the public.

Facts & figures

Innovation

The Josep Carreras Institute is committed to bringing the cure of leukaemia and other haematological malignances to patients. To do so and contribute to society and country's progress, it fosters the generation of new knowledge together with the development of new therapies and technologies.

In 2023, the results of our research in terms of innovation were as follows:



In terms of technology transfer, during this last period, the Institute has managed 73 innovation projects and 16 patent families. It currently has 2 active spin-offs: Leukos Biotech, which stems from the research of Dr. Ruth Muñoz's group and OneChain Immunotherapeutics, from research of Dr. Pablo Menéndez's group.

The innovation unit has organized 2 training sessions: in Florence, in March within the framework "Intercept" (Marie Skłodowska-Curie Actions (MSCA) - Innovative Training Networks (ITN)) and at the Josep Carreras Institute in November, open to all IJC staff, and which included a round table of innovation leaders.

In 2023, 66 innovation contracts worth more than one million euros were signed and 9 Proof of Concept calls worth almost one and a half million euros were obtained. Overall, in 2023 the Institute raised almost 6M€ in knowledge transfer activities through projects with companies (1M€), technology platform services (1M€), licences and spin-offs (100k) and competitive grants to advance innovation projects (1.4M€ in PoC and 2.4M€ in research calls).

This year 2023 the Innovation Unit, together with the spin-off OneChain Immunotherapeutics has received the Joan Roget Knowledge Transfer Award from the Catalan Foundation for Research and Innovation (FCRI).

Teaching and Training

International Congresses

IMMUNO-model COST Action Conference
The 1st IMMUNO-model COST Action Conference "Exploring the Frontiers of Cancer Immunotherapy: From Models to Breakthroughs" took place on 1-2 June 2023 at the Josep Carreras Institute and online. Co-organised by Dr. Laura Belver and the COST Action IMMUNO-model CA21135, the conference aimed to accelerate the translation of experimental findings into clinical practice. Attendees had the opportunity to share their latest research, discuss challenges, and explore innovative strategies for advancing the field of immunotherapy research.

The Future Now:
Emerging Leaders in Biomedicine
This Symposium was an example of good institutional co-organization between the Josep Carreras Leukaemia Research Institute (IJC), the Vall d'Hebrón Institute of Oncology (VHIO), the Institute for Bioengineering of Catalonia (IBEC), the Institute of Molecular Biology of Barcelona (IBMB), the Centre for Genomic Regulation (CRG) and the Department of Medicine and Life Science (MELIS) of the University Pompeu Fabra. The conference aimed to create a space for networking, sharing cutting-edge research and fostering scientific collaborations between senior postdoctoral researchers and junior group leaders in Barcelona.

Distinguished, Invited and Open Lectures

The Institute has the pleasure to receive national and international well-renowned researchers in the cancer research-related field. They deliver a 1-hour lecture on their research, career, and findings, which is open to all the Institute and the scientific community.

Young Researchers Seminars (31)

The Young Researchers Seminars are 20-min talks given by our PhD Students and young Postdoctoral Investigators, in which they explain an aspect of their research to their IJC fellows and respond to their questions. This is the perfect opportunity for them to practice an activity that they will have to face not only in their thesis defence, but also on numerous occasions throughout their research career.

Thesis read (16)

Current doctoral thesis (73)

Courses and Seminars

Training courses

Researchers from the Institute periodically offer highly-specialized sciences courses.

24 – 26 April - NEXT, New Generation Diagnosis in Leukemia, co-organised by Spanish Society of Hematology and Hemotherapy (SEHH), Dr. Francesc Solé and Dr. Eulàlia Genescà

05 - 07 July - 4th EVBO Summer School, co-organised by the European Vascular Biology Organisation and the Endothelial pathobiology and microenvironment group of the Josep Carreras Institute

10 – 11 November – Preceptorship: Advances in Acute Lymphoblastic Leukaemia, co-organised by Incyte and Dr. Josep Maria Ribera

Seminars

February

Invited Lecture: "The impact of Molecular characterization in hematological malignancies: The example of Waldenström's macroglobulinemia Dr. Ramón García-Sanz, University Hospital of Salamanca. Salamanca, Spain

March

Open Ad-Hoc Lecture: "Visualizing the genome and transcriptome with Super Resolution Microscopy" Dr. Alvaro Castells, Guangzhou Institute of Biomedicine and Health. Guangzhou, China

Distinguished Lecture: "Targeting RNA modifications and hypoxia signalling pathways to eliminate cancer stem cells in acute myeloid leukaemia" Dr. Kamil Kranc, Barts Cancer Institute. London, United Kingdom

Invited Lecture: "Dissecting the function of copy number alterations in cancer" Dr. Pancho Barriga, Vall d'Hebron Institute of Oncology (VHIO). Barcelona, Spain

Distinguished Lecture: "Precision oncology in myeloid malignancies" Dr. Elli Papaemmanuil, Memorial Sloan Kettering Cancer Center. New York, United States

Distinguished Lecture: "A perspective view of the role for abnormal DNA methylation in the origins in human cancers" Dr. Stephen Baylin, The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins University. Baltimore, United States

Distinguished Lecture: "Guiding drug and cell based cancer therapy with mitochondria" Dr. Anthony Letai, Dana-Farber Cancer Institute, Harvard Medical School. Boston, United States

April

Open Lecture: "Mechanisms of B cell to macrophage transdifferentiation" Dr. Thomas Graf, Centre for Genomic Regulation (CRG). Barcelona, Spain

Invited Lecture: "Dissecting novel functions of epitranscriptomic modifications" Dr. Diana Guallar, Center for Research in Molecular Medicine and Chronic Diseases (CiMUS). Santiago de Compostela, Spain

May

Open Ad-Hoc Lecture: "Blood stem cells: a manual to build the engine" Dr. Vincenzo Calvanese, University College London. London, United Kingdom

June

Distinguished Lecture: "Interplay between LRRK2 kinase and Rab GTPases in Parkinson's disease" Dr. Dario Alessi, University of Dundee. Dundee, Scotland, United Kingdom

Distinguished Lecture: "Hematopoietic Stem Cells in Stress, Disease, and Aging" Dr. Emmanuelle Passegué, Columbia University Irving Medical Center (CUIMC). New York, United States

September

Open Lecture: "Deciphering the epigenetic regulation of acute myeloid leukemia to find novel treatment strategies" Dr. Andreas

Lennartsson, Department of Biosciences and Nutrition, Karolinska Institutet. Solna, Sweden

Distinguished Lecture: "How to improve the treatment of high risk MDS" Dr. Pierre Fenaux, Hospital St Louis, University of Paris. Paris, France

Invited Lecture: "Targeting DNA damage response to overcome cancer drug resistance" Dr. Maria Mayan, Biomedical Research Institute A Coruña. A Coruña, Spain

Open Lecture: "Epigenetic Genome Maintenance in Normal Physiology and Malignancy: Lessons from a Macro-Histone" Dr. Philipp Oberdoerffer, John Hopkins Medicine. Baltimore, United States

October

Distinguished Lecture: "Viral mimicry and mitochondrial dysfunction in driving Inflammasome Signaling in Cancer Cells" Dr. Feyruz Rassool, University of Maryland School of Medicine. Baltimore, United States

November

Invited Lecture: "Kinases that control the link between inflammation and colon cancer" Dr. Ana Cuenda, National Centre for Biotechnology. Madrid, Spain

Open Lecture: "Aging, clonal hematopoiesis and secondary leukemia upon stress in Fanconi anemia" Dr. Jean Soulier, Saint-Louis Hospital and University Paris Cité. Paris, France

Invited Lecture: "Discovery of a E3 ubiquitin-ligase as drug target and biomarker in colon cancer" Dr. Angelica Figueroa, Biomedical Research Institute A Coruña. A Coruña, Spain

Institutional Events

IJC Retreat, 3 November 2023

The 2023 Retreat of the Josep Carreras Institute was the most inclusive and special one. For the first time, it brought together Research, Core Facilities and Management colleagues at PortAventura World. This year's retreat offered the perfect opportunity to share insights about the work done during the year, but also to enjoy the park and make new bonds with colleagues from different groups and units.

Financial Data

The Institute's pioneering mixed-funding model is partially financed by the Josep Carreras Foundation. It also receives core funding from the Catalan government and is reliant on competitive funding for its research activities.

In 2023, there was a 11,68 % increase in income from public funds and the provision of services.

With respect to spending, this one increased by 11,07% compared to the previous year.

	2022	2023	
Incomes	**18.792.033**	**20.986.155**	**11,68**
Contributions from the generalitat	4.089.268	3.995.614	
Other transfers (FIJC)	1.000.000	1.000.000	
Services	3.263.095	3.113.573	
Project	9.103.001	11.548.593	
Overheads	1.336.669	1.328.376	
Operational expenses	**17.119.712**	**19.014.537**	**11,07**
Staffing costs	4.461.440	4.548.863	
Information technologies services	153.875	159.580	
Communication	35.403	43.087	
Building maintenance	1.158.743	984.782	
Laboratories maintenance	262.241	255.726	
Research support	105.120	87.281	
Project	9.830.449	11.190.297	
Scientific-technical services (Platforms)	595.845	930.587	
Biobank	13.669	13.330	
Management support services	224.037	257.353	
Other	129.047	325.108	
VAT prorata	97.827	87.232	
Heritage		3.957	
Reimbursement of subsidies and other management losses	52.018	127.351	
Result of the activity	**1.672.321**	**1.971.618**	
Extraordinary result	**0**	**0**	
Operating income	**1.672.321**	**1.971.618**	
Financial performance	**-1.369.742**	**-823.882**	
Result before amortization	**302.579**	**1.147.737**	
Amortization	**-1.933.451**	**-2.216.913**	
Result	**-1.630.872**	**-1.069.176**	

Awards

Dr. Manel Esteller

26 May
Award **Admirables in Biomedical Research**, from **Diario Médico** and **Correo Farmacéutico** in recognition of his research in epigenetics and its alterations in human diseases, especially in cancer

https://www.carrerasresearch.org/en/news/dr-manel-esteller-receives-the-admirables-award-in-biomedical-research

06 June
Recognition as the best researcher in the fields of Medicine and Genetics in Spain according to **Research.com**

https://www.carrerasresearch.org/en/news/dr-manel-esteller-director-of-the-josep-carreras-leukaemia-research-institute-considered-the-best-researcher-in-the-fields-of-medicine-and-genetics-in-spain-%0D

03 July
Award **Jané Mateu**, from the **Jané Mateu Foundation** for his scientific career in biomedical research

https://www.carrerasresearch.org/en/news/dr-manel-esteller-awarded-with-the-jane-mateu-foundation-award

26 September
Appointment as member of the **Royal European Academy of Doctors** (RAED)

https://www.carrerasresearch.org/en/news/dr-manel-esteller-director-of-the-josep-carreras-leukaemia-research-institute-elected-member-of-the-prestigious-royal-european-academy-of-doctors%0D

16 October
Recognition among the most influential researchers in the world across all scientific disciplines in the annual list of **Stanford University**

https://www.carrerasresearch.org/en/news/dr-manel-esteller-recognized-among-the-worlds-leading-scientists-by-stanford-university

27 November
Award **Rafael Hervada for Biomedical Research**, from the **I.M.Q. San Rafael Foundation** of A Coruña for his research in the use of Artificial Intelligence (AI) in cancer genomics, infectious diseases such as COVID-19 and the study of virtual twins; as well as for the development of new technologies for the study of Epigenetics and its alterations in diseases

https://www.carrerasresearch.org/en/news/dr-manel-esteller-receives-the-rafael-hervada-award-for-biomedical-research-

07 December
Recognition as the second best scientist in Spain considering all research disciplines, according to the 2023 ranking of leading scientists of **Research.com**. The ranking also places Dr. Esteller at the top of the lists in Medicine and Genetics among scientists in Spain

https://www.carrerasresearch.org/en/news/dr-manel-esteller-ranked-as-the-second-best-scientist-across-all-research-areas-in-spain%0D

Dr. Montse Sanchez-Cespedes

20 January
Award from the **Royal National Academy of Pharmacy** for her work "Precision medicine in immunotherapy and lung cancer"

https://www.carrerasresearch.org/en/news/dr-montse-sanchez-cespedes-receives-the-award-of-the-royal-national-academy-of-pharmacy

Dr. Fumiichiro Yamamoto

11 October
Award **James Blundell Award 2023**, from the British Blood Transfusion Society for his contributions to the genetic and molecular description of the ABO system

https://www.carrerasresearch.org/en/news/dr-fumiichiro-yamamoto-receives-the-james-blundell-award-2023-from-the-british-blood-transfusion-society

Dr. Marcus Buschbeck

20 June
Appointment as member of the **European Hematology Association**'s Research Committee

https://www.carrerasresearch.org/en/news/dr-marcus-buschbeck-is-appointed-as-member-of-the-european-hematology-associations-research-committee

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15 November
Recognition of nine researchers of the Josep Carreras Institute (**Manel Esteller, Josep Maria Ribera, Montse Sanchez-Cespedes, Esteban Ballestar, Alejandro Vaquero, María Berdasco, Fumiichiro Yamamoto, Enric Carreras** and **Ciril Rozman**) among the world's most prominent in the scientific field according to the **Scopus database** by **Elsevier**

https://www.carrerasresearch.org/en/news/nine-researchers-of-the-josep-carreras-institute-among-the-worlds-most-prominent-in-the-scientific-field

Competitive Grants and Active Projects

Cancer Epigenetics

Manel Esteller

Type: Project
Year / Funding Entity: 2019 European Commission, MSCA-RISE-2019 Marie Skłodowska-Curie Actions – Research and Innovation Staff Exchange
PI: ESTELLER BADOSA, MANEL & BERDASCO MENENDEZ, MARIA
Reference: 872391
Title: DevelOpmeNt of Cancer RNA TherapEutics
Start Date: 01/05/2020 - **End Date:** 30/04/2024

Type: HR
Year / Funding Entity: 2019 Instituto de Salud Carlos III, Contratos Sara Borrell
PI: ESTELLER BADOSA, MANEL
Reference: CD19/00272
Title: Desarrollo de la isobutyl-deoxynyboquinone en Glioma Pontino Intrinseco Difuso: una oportunidad terapéutica en oncología pediátrica.
Start Date: 15/03/2020 - **End Date:** 14/03/2023

Type: HR
Year / Funding Entity: 2019 European Commission, H2020 - MSCA - IF-2019 Marie Skłodowska-Curie Actions - Individual Fellowship
PI: ESTELLER BADOSA, MANEL
Reference: 896403
Title: La senescencia como factor clave en la leucemogénesis y la homeostasis de la médula ósea en el envejecimiento
Start Date: 01/09/2021 - **End Date:** 31/08/2023

Type: Project
Year / Funding Entity: 2018 Cancer Research UK, Accelerator Award
PI: ESTELLER BADOSA, MANEL
Reference: A29372/GEACC19003CED
Title: PREDICT-Meso: PRE-malignant Drivers Combined with Target-Drug validation in Mesothelioma
Start Date: 01/04/2020 - **End Date:** 30/03/2025

Type: Project
Year / Funding Entity: 2017 Cancer Research UK, Accelerator Award
PI: ESTELLER BADOSA, MANEL
Reference: A26825/GEACC18004TAB
Title: ACRCelerate: Colorectal Cancer Stratified Medicine Network
Start Date: 02/08/2019 - **End Date:** 31/10/2023

Type: HR
Year / Funding Entity: 2018 Ministerio de Educación, Cultura y Deporte, Ayudas para la formación de profesorado universitario (FPU)
PI: ESTELLER BADOSA, MANEL
Reference: FPU2017-02423
Title: Epigenética y Epitranscriptómica del cáncer: el papel de las modificaciones del ARN en cáncer
Start Date: 01/07/2019 - **End Date:** 31/07/2022

Type: Project
Year / Funding Entity: 2019 Ministerio de Ciencia, Innovación y Universidades , Retos Colaboración
PI: ESTELLER BADOSA, MANEL
Reference: RTC2019-006951-1
Title: Aproximació immunoterapèutica al tractament del limfoma de no-Hodgkin mitjançant el desenvolupament d'un inhibidor selectiu de HDAC6
Start Date: 01/01/2020 - **End Date:** 30/09/2023

Type: HR
Year / Funding Entity: 2019 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: ESTELLER BADOSA, MANEL
Reference: PRE2019-089958
Title: Disrupción epigenética y genética de las modificaciones del RNA en cáncer
Start Date: 01/08/2020 - **End Date:** 31/07/2024

Type: Project
Year / Funding Entity: 2021 Fundación Uno Entre Cien Mil , VIII Beca "fundación unoentrecienmil" Para la investigación en el área de la leucemia infantil
PI: ESTELLER BADOSA, MANEL
Reference:
Title: B-ALL troubling epigenetic dysregulation might represent a new opportunity for therapy
Start Date: 15/07/2021 - **End Date:** 14/07/2023

Type: Project
Year / Funding Entity: 2021 Fundació La Marató de

TV3, Marató TV3: COVID-19
PI: FERRER AGUILAR, GERARDO
Reference: 202131-32
Title: Síndrome inflamatòria multisistèmica associada a COVID-19 en nens (MIS-C): bases genètiques, epigenètiques i immunopatogèniques.
Start Date: 23/09/2021 - **End Date:** 22/09/2024

Type: HR
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, AYUDAS JUAN DE LA CIERVA FORMACIÓN 2020
PI: ESTELLER BADOSA, MANEL
Reference: FJC2020-044658-I
Title: Single cell analysis of clonal heterogeneity in myelodysplastic syndromes treated with azacitidine
Start Date: 01/07/2022 - **End Date:** 30/06/2024

Type: HR
Year / Funding Entity: 2020 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts a Doctorats Industrials
PI: ESTELLER BADOSA, MANEL
Reference: 2020 DI 20
Title: Novel algorithms for disruptive 3D microscopy data processing, visualization and analysis, using massive GPU parallelization and Artificial Intelligence (AI) applied to cancer epigenetics
Start Date: 01/11/2020 - **End Date:** 31/10/2023

Type: Project
Year / Funding Entity: 2021 Fundació privada Olga Torres , Becas de investigación en cancer de colon
PI: ESTELLER BADOSA, MANEL
Reference: FOT_MEsteller
Title: Deciphering the epigenomic signature induced by the carcinogenic pks+ E. coli and its role in colorectal tumorigenesis. and its role in colorectal tumorigenesis
Start Date: 01/01/2022 - **End Date:** 31/12/2023

Type: Project
Year / Funding Entity: 2021 Fundació "La Caixa", CAIXARESEARCH HEALTH 2022
PI: ESTELLER BADOSA, MANEL
Reference: HR22-00732
Title: Somatic mutations and clonal hematopoiesis as predictors and drivers of heart failure progression
Start Date: 01/10/2022 - **End Date:** 30/09/2025

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, Proyectos de generación de conocimiento
PI: ESTELLER BADOSA, MANEL
Reference: PID2021-125282OB-I00
Title: Uso de aproximaciones de célula única para decifrar la epigenómica del cáncer y las epidrogas
Start Date: 01/09/2022 - **End Date:** 31/08/2025

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, Ayudas a proyectos estratégicos orientados a la transición ecológica y a la transición digital
PI: MUSULÉN PALET, EVA
Reference: TED2021-131248B-I00
Title: AlgoRitmoS de aprEndizaje Profundo en el diagnóstico de adenomas y del cáNcer cOlorrectal precoz
Start Date: 01/12/2022 - **End Date:** 30/11/2024

Type: Network
Year / Funding Entity: 2016 Instituto de Salud Carlos III, INCORPORACIÓN DE NUEVAS ÁREAS TEMÁTICAS Y NUEVOS GRUPOS CIBER
PI: ESTELLER BADOSA, MANEL
Reference: CB16/12/00312
Title: Centro de Investigación Biomédica en Red Cáncer
Start Date: 01/01/2017 - **End Date:** 31/12/2024

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: ESTELLER BADOSA, MANEL
Reference: 2021 SGR 01494
Title: Grup d' Epigenètica del Càncer
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts d'indústria del coneixement per a l'any 2021 (llavor i producte)
PI: ESTELLER BADOSA, MANEL
Reference: 2021 PROD 00020
Title: Development and validation of a DNA methylation signature for predicting the response

to chimeric antigen receptor (CAR)-T cell therapy
Start Date: 19/10/2022 - **End Date:** 18/04/2024

Type: Project
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a projectes de valorització i transferència de coneixement desenvolupats per innovadors en estades en entitats del sistema de recerca i innovació de Catalunya (innovadors) per a l'any 2021
PI: ESTELLER BADOSA, MANEL
Reference: 2021 INNOV 00011
Title: Spin-off per comercialitzar línies cel·lulars immortalizades de limfòcits
Start Date: 07/12/2022 - **End Date:** 06/06/2024

Type: Project
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, Prueba de concepto 2022
PI: ESTELLER BADOSA, MANEL
Reference: PDC2022-133476-I00
Title: Study of validation and valorisation to the market of EPICART, a signature for predicting the response to CAR T-cell therapy (EPICART2M)
Start Date: 01/12/2022 - **End Date:** 30/11/2024

Type: Project
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, CONCESIÓN DIRECTA DE SUBVENCIONES A DIVERSAS ENTIDADES PARA EL DESARROLLO DE PROYECTOS DE CIENCIA DE EXCELENCIA
PI: ESTELLER BADOSA, MANEL
Reference:
Title: Proyecto Proteoma del Cáncer
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2022 Instituto de Salud Carlos III, Sello de excelencia isciii-health-acciones individuales MSCA
PI: ESTELLER BADOSA, MANEL
Reference: IHMC22/00035
Title: Epitranscriptomic regulation of DNA methylation in Acute myeloid leukemia
Start Date: 01/04/2023 - **End Date:** 31/03/2025

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Convocatòria d'ajuts Joan Oró per a la contractació de personal investigador predoctoral en formació.
PI: ESTELLER BADOSA, MANEL
Reference: 2023 FI-1 00832
Title: Estudis d'epigenètica del càncer a nivell de cèl·lula única.
Start Date: 01/06/2023 - **End Date:** 31/12/2023

Type: Project
Year / Funding Entity: 2021 CENTRO DE INVESTIGACIÓN BIOMÉDICA EN RED, Acciones Cooperativas y Complementarias Intramurales (ACCI) 2021
PI: ESTELLER BADOSA, MANEL
Reference:
Title: Primer repositorio de datos de metilación de población de referencia española y mejora del estudio epigenético en pacientes con enfermedades raras no diagnosticados
Start Date: 17/01/2023 - **End Date:** 16/07/2024

Type: HR
Year / Funding Entity: 2022 Fundación Científica de la Asociación Española Contra el Cáncer, INVESTIGADOR AECC 2023
PI: ESTELLER BADOSA, MANEL
Reference: INVES234765FERR
Title: Revolutionizing Precision Medicine in Leukemia Patients
Start Date: 01/12/2023 - **End Date:** 30/11/2026

Type: HR
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formación de doctores 2022 (FPI 2022)
PI: ESTELLER BADOSA, MANEL
Reference: PRE2022-105015
Title: USO DE APROXIMACIONES DE CELULA UNICA PARA DECIFRAR LA EPIGENOMICA DEL CANCER Y LAS EPIDROGAS
Start Date: 01/11/2023 - **End Date:** 15/09/2027

Type: Project
Year / Funding Entity: 2023 Fundación Mutua Madrileña, AYUDAS A PROYECTOS DE INVESTIGACIÓN EN SALUD 2023
PI: ESTELLER BADOSA, MANEL
Reference: AP183262023
Title: IDENTIFICACIÓN DE DETERMINANTES DE RESPUESTA A QUIMIOINMUNOTERAPIA EN BIOPSIA LÍQUIDA, EN PACIENTES CON CÁNCER MICROCÍTICO DE PULMON
Start Date: 06/10/2023 - **End Date:** 05/10/2026

Type: Project
Year / Funding Entity: 2023 European Commission, Research and innovation actions supporting the implementation of the mission on cancer
PI: ESTELLER BADOSA, MANEL
Reference: 101136622
Title: TUMOUR-HOST INTERACTIONS IN LIVER CANCER OF CHILDHOOD AND ADULTS
Start Date: 01/12/2023 - **End Date:** 30/11/2028

Type: HR
Year / Funding Entity: 2021 Fundación Científica de la Asociación Española Contra el Cáncer, POSTDOCTORAL AECC
PI: ESTELLER BADOSA, MANEL
Reference: POSTD211413AREN
Title: OVERCOMING CANCER IMMUNOTHERAPY RESISTANCE: NEW COMBINATORIAL STRATEGIES TO IMPROVE IMMUNOTHERAPIES
Start Date: 01/10/2023 - **End Date:** 30/06/2025

Cancer Genetics

Montse Sanchez-Cespedes

Type: HR
Year / Funding Entity: 2019 Fundación Científica de la Asociación Española Contra el Cáncer, Investigador AECC
PI: SANCHEZ CESPEDES, MONTSE
Reference: INVES19045ROME
Title: The CESAR Therapeutic Strategy (Cancer Epigenetic Short-circuit Adapted Response)
Start Date: 01/12/2019 - **End Date:** 30/11/2023

Type: HR
Year / Funding Entity: 2018 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: SANCHEZ CESPEDES, MONTSE
Reference: PRE2018-084624
Title: Disección funcional de las vias moleculares MYC/MAX y SWI/SNF para potenciar el desarrollo de nuevas terapias epigenéticas en cancer
Start Date: 01/05/2020 - **End Date:** 30/06/2023

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: SANCHEZ CESPEDES, MONTSE
Reference: PID2020-114541RB-I00
Title: Análisis funcional de la inactivación de complejos involucrados en la represión transcripcional en el desarrollo del cáncer de pulmón. (TRARECAN)
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: Project
Year / Funding Entity: 2021 Asociación para la Investigación del Cáncer de Pulmón en Mujeres, BECAS ICAPEM 2021
PI: PROS SIMÓN, EVA
Reference: ICAPEM 2021
Title: DISECCIÓN DE LOS MECANISMOS GENÉTICOS Y MOLECULARES DE RESISTENCIA A LOS INHIBIDORES TIROSINA QUINASA EN ADENOCARCINOMAS DE PULMÓN DE MUJERES NO FUMADORAS PORTADORES DE REORDENAMIENTOS DE RET
Start Date: 16/11/2021 - **End Date:** 15/11/2023

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: SANCHEZ - CESPEDES, MONTSE
Reference: 2021 SGR 01377
Title: Cancer Genetics
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2021 Ministerio de Universidades, Contratos predoctorales para la formación de profesorado universitario-FPU
PI: SANCHEZ CESPEDES, MONTSE
Reference: FPU21/00047
Title: Inactivación genética de moléculas involucradas en la represión transcripcional: análisis funcional y papel en el desarrollo del cáncer de pulmón
Start Date: 01/01/2023 - **End Date:** 30/04/2025

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, CONVOCATÒRIA DELS AJUTS JOAN ORÓ PER A LA CONTRACTACIÓ DE PERSONAL INVESTIGADOR PREDOCTORAL EN FORMACIÓ (FI 2023)
PI: SANCHEZ CESPEDES, MONTSE
Reference: 2023 FI-1 00667

Title: Estudio de los factores que determinan la evasión tumoral del reconocimiento inmunológico y respuesta a inmunoterapia.
Start Date: 01/05/2023 - **End Date:** 30/04/2026

Cancer Heterogeneity and Hierarchies

Verónica Rodilla

Type: HR
Year / Funding Entity: 2018 Ministerio de Economia y Competitividad, Ramón y Cajal
PI: RODILLA BENITO, VERÓNICA
Reference: RYC2018-024099-I
Title: In vivo models to study cellular hierarchies and cancer
Start Date: 01/05/2020 - **End Date:** 30/04/2025

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: RODILLA BENITO, VERÓNICA
Reference: PID2020-114647RA-I00
Title: Estudio de linajes celulares en cáncer de mama para entender las dinámicas de crecimiento tumoral y su plasticidad celular
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2021 Departament de Salut, Generalitat de Catalunya, Subvencions per a la contractació de personal investigador en formació (PIF-SALUT)
PI: RODILLA BENITO, VERÓNICA
Reference: SLT017/20/000140
Title: PIF-Salut Elena Vinuesa. Estudis clonals per entendre les jerarquies i plasticitat cel·lular en el càncer de mama
Start Date: 15/07/2021 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 Fundación FERO, III PROYECTO FERO-GHD en Cáncer de Mama 2021
PI: RODILLA BENITO, VERÓNICA
Reference: PFERO2021.01
Title: Defining new biomarkers for an improved diagnosis and better treatment of choice
Start Date: 01/06/2021 - **End Date:** 31/05/2023

Type: Project
Year / Funding Entity: 2021 Fundación Científica de la Asociación Española Contra el Cáncer, LAB AECC 2021
PI: RODILLA BENITO, VERÓNICA
Reference: LABAE211626RODI
Title: Tumor heterogeneity comprehension for an improved diagnosis and treatment choice for TNBC (triple negatiu)
Start Date: 01/12/2021 - **End Date:** 30/11/2024

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS JUAN DE LA CIERVA FORMACIÓN
PI: RODILLA BENITO, VERÓNICA
Reference: FJC2021-047741-I_
Title: Heterogeneidad tumoral y plasticidad celular del cáncer de mama
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Cancer Immunogenomics

Eduard Porta

Type: Project
Year / Funding Entity: 2020 Fundación Científica de la Asociación Española Contra el Cáncer, LAB AECC 2020
PI: PORTA PARDO, EDUARD
Reference: LABAE20038PORT
Title: Un mapa molecular y celular del cáncer de vejiga para guiar el tratamiento neoadyuvante
Start Date: 01/12/2020 - **End Date:** 30/11/2023

Type: HR
Year / Funding Entity:2 019 Ministerio de Ciencia e Innovación, Subprograma de ayudas para contratos Ramon y Cajal
PI: PORTA PARDO, EDUARD
Reference: RYC2019-026415-I
Title: RYC Eduard Porta
Start Date: 01/09/2021 - **End Date:** 31/08/2026

Type: HR
Year / Funding Entity: 2021 Fundació "La Caixa", BECAS DE DOCTORADO INPhINIT RETAINING 2022
PI: PORTA PARDO, EDUARD
Reference: 118772
Start Date: 16/10/2022 - **End Date:** 15/10/2025

Type: HR
Year / Funding Entity: 2021 Fundació "La Caixa", BECAS DE DOCTORADO INPhINIT RETAINING 2022
PI: PORTA PARDO, EDUARD
Reference: 122913
Start Date: 16/10/2022 - **End Date:** 15/10/2025

Type: Project
Year / Funding Entity: 2021 European Commission, A COMPETITIVE HEALTH-RELATED INDUSTRY 2022
PI: PORTA PARDO, EDUARD
Reference: 101095717
Title: Scaling Up secure Processing, Anonymization and generation of Health Data for EU cross border collaborative research and Innovation
Start Date: 01/01/2023 - **End Date:** 31/12/2025

Type: Project
Year / Funding Entity: 2022 Asociación Española de Investigación sobre el Cáncer, III AYUDA DE INVESTIGACIÓN EN CÁNCER FERO-ASEICA
PI: PORTA PARDO, EDUARD
Reference: BFERO2022.06
Title: Mapping the activity of Cancer Hallmarks to predict the success of cancer treatments
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Cancer Metabolism

Lucas Pontel

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PLAN COMPLEMENTARIO DE BIOTECNOLOGÍA APLICADA A LA SALUD DEL PLAN DE RECUPERACIÓN, TRANSFORMACIÓN Y RESILIENCIA
PI: PONTEL, LUCAS BLAS
Title: Precision Medicine in FA: drug screening to identify a mutation specific drug
Start Date: 31/01/2023 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: PONTEL, LUCAS BLAS
Reference: PID2022-136694NB-I00
Title: Multifaceted Roles of Cellular Nucleophiles in Hematopoietic Tumors
Start Date: 01/09/2023 - **End Date:** 31/08/2026

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, Ayudas para contratos ramón y cajal
PI: PONTEL, LUCAS BLAS
Reference: RYC2021-032395-I
Title: The role of metabolism in disease aetiology
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Chromatin Biology Laboratory

Alejandro Vaquero

Type: HR
Year / Funding Entity: 2020 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a la contractació de personal investigador novell per a l'any 2020. FI-DGR 2020
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: 2020 FI_B 00293
Title: "Sirtuin-dependent protection of genome stability under stress and its implications in cancer and aging"
Start Date: 01/04/2020 - **End Date:** 31/03/2023

Type: Project
Year / Funding Entity: 2020 Fundación Científica de la Asociación Española Contra el Cáncer, Proyectos Estratégicos AECC 2020
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: PROYE20042VAQU
Title: Descifrando el papel de SIRT7 en el desarrollo de linfocitos B y la formación de Leucemias
Start Date: 01/12/2020 - **End Date:** 30/11/2023

Type: HR
Year / Funding Entity: 2018 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: PRE2018-084435
Title: Protección de la estabilidad del genoma por sirtuínas en condiciones de estrés y sus implicaciones en cáncer y envejecimiento
Start Date: 01/05/2020 - **End Date:** 31/08/2023

Type: Project
Year / Funding Entity:2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: PID2020-117284RB-I00
Title: PAPEL DE LAS SIRTUÍNAS EN LA REGULACIÓN EPIGENÉTICA Y LA INTEGRIDAD GENÓMICA EN RESPUESTA A ESTRÉS Y SU IMPLICACIÓN EN CÁNCER Y ENVEJECIMIENTO (SIREPINOME)
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2021 Deutsche Forschungsgemeinschaft, Walter Benjamin Abroad Fellowship 2021
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: 493080688
Title: Role of the SIRT7/NPM pathway in lung cancer progression
Start Date: 01/11/2021 - **End Date:** 31/08/2023

Type: HR
Year / Funding Entity: 2021 European Commission, MSCA POSTDOCTORAL FELLOWSHIPS 2021
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: 101065013
Title: Role of the SIRT7-NPM-c-Myc pathway in lung cancer
Start Date: 01/09/2023 - **End Date:** 31/08/2025

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a la contractació de personal investigador novell (FI-2022)
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: 2022 FI_B 00924, 2023 FI-2 00924
Title: Role of sirtuins in epigenetic regulation and genome integrity in stress respnse and their implication in cancer and aging
Start Date: 01/07/2022 - **End Date:** 30/06/2025

Type: Network
Year / Funding Entity:2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: VAQUERO GARCÍA, ALEJANDRO
Reference: 2021 SGR 01378
Title: Grup de biologia de la cromatina
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Endothelial Pathobiology and Microenvironment

Mariona Graupera

Type: Project
Year / Funding Entity: 2020 European Commission, H2020_MSCA_ITN-2020 Marie Skłodowska-Curie Actions – Innovative Training Networks
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 955951
Title: Deconstructing the evolution of metastasis
Start Date: 01/03/2021 - **End Date:** 28/02/2025

Type: HR
Year / Funding Entity: 2020 European Commission, H2020 - MSCA - IF-2020 Marie Skłodowska-Curie Actions - Individual Fellowship
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 101026227
Title: PIK3CA-Related Overgrowth Spectrum:molecular mechanisms and preclinical modelling of PIK3CA VARIANTs
Start Date: 01/09/2022 - **End Date:** 31/08/2024

Type: Project
Year / Funding Entity: 2020 Leducq Foundation, Transatlantic Networks of Excellence Program 2020
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 21CVD01
Title: Brown Fat and Cardiovascular Health: Genetic Determinants and Molecular Mechanisms
Start Date: 01/01/2022 - **End Date:** 31/12/2026

Type: Project
Year / Funding Entity: 2020 Worldwide Cancer Research, March 2020 grant round
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 21-0159
Title: Identifying properties of tumour suppressive pericytes for cancer therapy
Start Date: 01/03/2021 - **End Date:** 31/08/2024

Type: Project
Year / Funding Entity: 2021 Fundació "La Caixa", Immunoepigenetics Research Program
PI: GRAUPERA GARCIA - MILA, MARIONA
Title: Estudi de l'activació de la via de la PI3K en malformacions vasculars oncogèniques.
Start Date: 01/03/2021 - **End Date:** 30/06/2022

Type: HR
Year / Funding Entity: 2019 Fundació "La Caixa", Junior Leader 2020 Retaining
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: LCF/BQ/PR20/11770002
Title: Pathogenic and pharmacologic study of cutaneous capillary malformations and Sturge-Weber syndrome.
Start Date: 01/03/2021 - **End Date:** 29/12/2023

Type: Project
Year / Funding Entity: 2021 Cloves Syndrome Community, 2021 Research Grant Program
PI: ANGULO URARTE, ANA
Title: Identifying the molecular impact of PIK3CA variants in PROS towards stratification of patients and personalized medicine.
Start Date: 01/09/2021 - **End Date:** 31/08/2022

Type: Project
Year / Funding Entity: 2020 European Commission, H2020_MSCA_ITN-2020 Marie Skłodowska-Curie Actions – Innovative Training Networks
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 955534
Title: PI3K/PTEN-related monogenic disease to understand cancer.
Start Date: 01/07/2021 - **End Date:** 30/06/2025

Type: Project
Year / Funding Entity: 2019 PTEN Research Foundation, 2020 call
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: IJC-21-001
Title: Preclinical investigation of vascular malformations in PTEN hamartoma tumour syndrome
Start Date: 01/05/2021 - **End Date:** 31/08/2024

Type: Project
Year / Funding Entity: 2019 Fundación BBVA, Ayudas Fundación BBVA Equipos de Investigación Científica 2019
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: PR(19)BIO_MET_0061
Title: Endothelial molecular alterations induced by excessive energy intake - a new concept in obesity and metabolic disorders
Start Date: 01/02/2021 - **End Date:** 30/04/2023

Type: Project
Year / Funding Entity: 2018 Fundación Científica de la Asociación Española Contra el Cáncer, GRUPOS TRASLACIONALES AECC
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: GCTRA18006CARR
Title: Vulnerabilities of Tumour and Stroma Interactions in Castration-Naïve Metastatic Prostate Cancer
Start Date: 01/04/2021 - **End Date:** 30/09/2023

Type: HR
Year / Funding Entity: 2020 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a la contractació de personal investigador novell per a l'any 2020. FI-DGR 2020
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 2020 FI_B 00342
Title: Estudi patogènic i farmacològic de les malformacions capil·lars cutànies i del síndrome Struge-Weber
Start Date: 01/05/2021 - **End Date:** 30/04/2023

Type: Project
Year / Funding Entity: 2020 Fundació "La Caixa", Health Research 2021
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: HR21-00046
Title: Decoding the paracrine control of metabolic fitness by endothelial nutrient signaling
Start Date: 01/12/2021 - **End Date:** 30/11/2024

Type: Project
Year / Funding Entity: 2018 Fundació "La Caixa", Health Research 2018
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: LCF/PR/HR19/52160023
Title: Mapping the pathogenesis of vascular malformations
Start Date: 01/03/2021 - **End Date:** 01/11/2022

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: PID2020-116184RB-I00
Title: PIK3CA variants in PROS: cracking the Code of pathogenesis
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2018 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales

para la formacion de doctores (FPI)
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: PRE2018-084283
Start Date: 01/11/2021 - **End Date:** 30/06/2023

Type: Project
Year / Funding Entity: 2021 Fundació "La Caixa", CAIXARESEARCH HEALTH 2022
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: HR22-00316
Title: Understanding and promoting the growth and regenerative functions of blood vessels in heart disease
Start Date: 01/12/2022 - **End Date:** 30/11/2025

Type: HR
Year / Funding Entity: 2022 Institució Catalana De Recerca i Estudis Avançats, ICREA SENIOR CALL 2022
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: N/A
Title: Icrea Senior Call 2022
Start Date: 01/01/2023 - **End Date:** 31/12/2029

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: 2021 SGR 01320
Title: Patofisiologia de l'endoteli i metabolisme
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS CONTRATOS PREDOCTORALES PARA FORMACIÓN DOCTORES (FPI)
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: PRE2021-099260
Title: LAS VARIANTES DE PIK3CA IN PROS: DESCIFRANDO EL CODIGO DE PATOGENESIS
Start Date: 01/09/2022 - **End Date:** 30/08/2025

Type: Network
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, REDES DE INVESTIGACIÓN 2022
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: RED2022-134397-T
Title: Systemic and cellular interactions between cancer and metabolic signaling
Start Date: 01/06/2023 - **End Date:** 31/05/2025

Type: Project
Year / Funding Entity: 2022 Fundació "La Caixa", CAIXARESEARCH HEALTH CALL 2023
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: HR23-00090
Title: Applying DNA and optical barcoding to study endothelial progenitor cells in physiology and disease
Start Date: 31/12/2023 - **End Date:** 30/12/2026

Type: Project
Year / Funding Entity: 2023 Fundación FERO, V PROYECTO FERO-GHD EN CANCER DE MAMA 2023
PI: GRAUPERA GARCIA - MILA, MARIONA
Reference: PFERO2023.01
Title: Identifying angiokines that promote BCa metastatic growth in bone (kineMET)
Start Date: 15/10/2023 - **End Date:** 14/10/2025

Epigenetics and immune disease

Esteban Ballestar

Type: HR
Year / Funding Entity: 2018 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: BALLESTAR TARIN, ESTEBAN
Reference: PRE2018-083544
Title: Células mieloides y plasticidad epigenética: Mecanismos e implicaciones en procesos autoinmunes e inflamatorios
Start Date: 01/05/2020 - **End Date:** 30/06/2023

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: BALLESTAR TARIN, ESTEBAN
Reference: PID2020-117212RB-I00
Title: Entendiendo el papel de la Comunicación Celular en el Sistema Inmune en la Desregulación Epigenética en Inflamación (InflaEpiTalk)
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: Project
Year / Funding Entity: 2021 Fundació "La Caixa", CAIXARESEARCH HEALTH 2022
PI: BALLESTAR TARIN, ESTEBAN
Reference: HR22-00668

Title: Uncovering the Differentiation Determinants and Dynamics of Congenital Susceptibility to Infections
Start Date: 01/09/2022 - **End Date:** 31/08/2025

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: BALLESTAR TARIN, ESTEBAN & SARDINA ORTEGA, JOSÉ LUIS
Reference: 2021 SGR 01213
Title: Epigenètica i Malaltia Immunitària
Start Date: 01/01/2022 - **End Date:** 30/06/2025

Type: HR
Year / Funding Entity:2021 Ministerio de Ciencia e Innovación, AYUDAS CONTRATOS PREDOCTORALES PARA FORMACIÓN DOCTORES (FPI)
PI: BALLESTAR TARIN, ESTEBAN
Reference: PRE2021-098003
Title: ENTENDIENDO EL PAPEL DE LA COMUNICACION CELULAR EN EL SISTEMA INMUNE EN LA DESREGULACION EPIGENETICA EN INFLAMACION
Start Date: 01/08/2022 - **End Date:** 31/07/2026

Epigenetic therapies
María Berdasco

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: BERDASCO MENENDEZ, MARIA
Reference: PID2022-139279OB-I00
Title: Preclinical study of the use of epigenetic inhibitors as a personalized therapy for acute myeloid leukaemia patients carrying NUP98 gene fusions
Start Date: 01/09/2023 - **End Date:** 31/12/2026

Type: Project
Year / Funding Entity: 2019 European Commission, MSCA-RISE-2019 Marie Skłodowska-Curie Actions – Research and Innovation Staff Exchange
PI: ESTELLER BADOSA, MANEL & BERDASCO MENENDEZ, MARIA
Group: Cancer Epigenetics
Reference: 872391
Title: DevelOpmeNt of Cancer RNA TherapEutics
Start Date: 01/05/2020 - **End Date:** 30/04/2024

Regulatory Genomics
Tanya Vavouri

Type: Project
Year / Funding Entity: 2019 Ministerio de Ciencia, Innovación y Universidades , Generación del Conocimiento
PI: VAVOURI, TANYA
Reference: PID2019-111676GB-I00
Title: La evolución de nuevos ARN que interactúan con PIWI en mamíferos
Start Date: 01/06/2020 - **End Date:** 31/05/2023

Type: HR
Year / Funding Entity:2022 Fundació "la Caixa", BECAS DE DOCTORADO INPhINIT INCOMING 2022
PI: VAVOURI, TANYA SOULTANA
Reference: 120917
Title: The effect of transposable elements on gene regulation in mammals
Start Date: 01/11/2022 - **End Date:** 31/10/2025

Regulatory RNA and chromatin
Sònia Guil

Type: Project
Year / Funding Entity: 2019 Ministerio de Ciencia, Innovación y Universidades, Retos Investigación
PI: GUIL DOMÈNECH, SÒNIA
Reference: PID2019-111658RB-I00
Title: Pseudogenes como ARN oncofetales largos no codificantes: caracterización funcional e implicaciones para la terapia contra el cáncer
Start Date: 01/06/2020 - **End Date:** 31/05/2023

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar

suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: GUIL DOMÈNECH, SÒNIA
Reference: 2021 SGR 01309
Title: RNA regulador i cromatina
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2022 FinRett, III CONVOCATORIA DE AYUDAS A LA INVESTIGACIÓN EN SÍNDROME DE RETT DE FINRETT
PI: GUIL DOMÈNECH, SÒNIA
Title: Characterization of the RNA binding activity of wild-type and mutant MECP2 to improve gene replacement therapy for Rett syndrome
Start Date: 01/04/2023 - **End Date:** 31/03/2024

Type: Project
Year / Funding Entity: 2022 International Rett Syndrome, RETT SYNDROME INNOVATION AWARD 2022
PI: GUIL DOMÈNECH, SÒNIA
Reference: 4005
Title: Study of the paraspeckle-mitochondria crosstalk downstream of MECP2 (dys)function and the role of noncoding RNAs in emergent regulatory circuits
Start Date: 15/12/2022 - **End Date:** 14/12/2024

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: GUIL DOMÈNECH, SÒNIA
Reference: PID2022-142829OB-I00
Title: Study of the repertoire of RNA targets of the methyl-DNA binding protein MeCP2: their role in the physiopathology of Rett syndrome and utility as therapeutic tools.
Start Date: 01/09/2023 - **End Date:** 31/08/2026

Type: Project
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, PROYECTOS EN COLABORACIÓN PÚBLICO-PRIVADA 2022
PI: GUIL DOMÈNECH, SÒNIA
Reference: CPP2022-009793
Title: Desarrollo de un nuevo Inhibidor de HDAC6 para el tratamiento de síndrome de RETT
Start Date: 01/04/2023 - **End Date:** 31/03/2026

3D Chromatin Organization

Biola Javierre

Type: HR
Year / Funding Entity: 2019 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a la contractació de personal investigador novell per a l'any 2019. FI-DGR 2019
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: 2019 FI_B 00017
Title: Desxifrant noves dianes moleculars per a teràpies contra la leucèmia Limfoblàstica aguda infantil
Start Date: 01/04/2019 - **End Date:** 31/03/2022

Type: Project
Year / Funding Entity: 2019 European Hematology Association, EHA Advanced Research Grant
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: 4823998
Title: Dissecting the role of non-coding genome in B-precursor Acute Lymphoblastic Leukaemia under the THREEDIMENTIONAL genome architecture point of view
Start Date: 01/09/2021 - **End Date:** 31/08/2023

Type: Project
Year / Funding Entity: 2019 Deutsche José Carreras Leukämie Stiftung, Forschungsprojekte (R 19) 2019
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: DJCLS 08R/2019
Title: Deciphering the Oncogenic Role of the PRC1 Complexes Through Integration of Functional and Spatial Genomics in Diffuse Large B-cell Lymphoma
Start Date: 01/09/2020 - **End Date:** 31/08/2023

Type: Award
Year / Funding Entity: 2019 Fondation d'Entreprise l'Oreál, "For Women in Science"L'Oréal-UNESCO International Rising Talent
PI: JAVIERRE MARTINEZ, BIOLA M.
Title: ESTUDIO DE LA SUSCEPTIBILIDAD GENÉTICA ASOCIADA A LEUCEMIA LINFOBLÁSTICA AGUDA INFANTIL: IDENTIFICACIÓN DE NUEVAS DIANAS TERAPÉUTICAS
Start Date: 01/01/2019 - **End Date:** 31/12/2023

Type: HR
Year / Funding Entity: 2019 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: PRE2019-088005
Title: Organizacion dinamica 3D de la cromatina en la hematopoyesis humana: descripcion de nuevos genes asociados a enfermedades hematologicas
Start Date: 01/08/2020 - **End Date:** 31/07/2024

Type: Project
Year / Funding Entity: 2020 Wellcome LEAP Inc, Human Organs, Physiology, and Engineering (HOPE)
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: HOPE-2021-2754490174
Title: Engineering human B cells: accelerating modelling of disease,drug screenings and translation of cancer immunotherapy
Start Date: 01/04/2021 - **End Date:** 31/03/2024

Type: Project
Year / Funding Entity: 2021 Fundación Científica de la Asociación Española Contra el Cáncer, LAB AECC 2021
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: LABAE21981JAVI
Title: Enfoque multiómico para mejorar el manejo terapéutico de la leucemia linfoblástica aguda de células T
Start Date: 01/12/2021 - **End Date:** 30/11/2024

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2021
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: PID2021-125277OB-I00
Title: Descifrando el papel y la regulación de la arquitectura del genoma espacio-temporal en en la linfomagénesis de células B
Start Date: 01/09/2022 - **End Date:** 31/08/2025

Type: HR
Year / Funding Entity: 2022 Instituto de Salud Carlos III, CONTRATOS MIGUEL SERVET
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: CP22/00127
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: 2021 SGR 00771
Title: Leukemia 3D epigenomics
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2022 Fundación Científica de la Asociación Española Contra el Cáncer, AYUDAS PREDOCTORALES AECC 2023
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: PRDBA233916ALCA
Title: Deciphering the role and regulation of spatial-temporal genome architecture in B cell lymphomagenesis
Start Date: 01/12/2023 - **End Date:** 30/11/2026

Type: Network
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, REDES DE INVESTIGACIÓN 2022
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: RED2022-134768-T
Title: Red de Regulación Genómica/Regulatory Genomics Network – R2G
Start Date: 01/06/2023 - **End Date:** 31/05/2025

Type: Project
Year / Funding Entity: 2022 Fundació "La Caixa", CAIXARESEARCH HEALTH CALL 2023
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: HR23-00060
Title: Deciphering relapse in B-cell acute lymphoblastic leukemia
Start Date: 31/12/2023 - **End Date:** 30/12/2026

Type: HR
Year / Funding Entity: 2020 Ministerio de Universidades, CONVOCATORIA DE AYUDAS PARA LA FORMACIÓN DEL PROFESORADO UNIVERSITARIO - FPU 2020
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: FPU20/03798
Title: FPU 2020
Start Date: 01/01/2023 - **End Date:** 30/11/2025

Type: HR
2023 Ministerio de Ciencia e Innovación, Ayudas

para contratos predoctorales para la formación de doctores 2022 (FPI 2022)
PI: JAVIERRE MARTINEZ, BIOLA M.
Reference: PRE2022-102463
Title: Descifrando el papel y la regulación de la arquitectura del genoma espacio temporal en la linfomagenesis de células B
Start Date: 01/12/2023 - **End Date:** 30/11/2027

Acute Lymphoblastic Leukaemia

Josep Maria Ribera

Type: Project
Year / Funding Entity: 2019 Instituto de Salud Carlos III, Proyectos de investigacion en Salud
PI: GENESCA FERRER, EULALIA & RIBERA SANTASUSANA, JOSEP MARIA
Reference: PI19/01828
Title: Uso de la Secuenciación de Nueva Generación (NGS) como única herramienta genómica para la mejora del diagnóstico, el pronóstico y el tratamiento de pacientes adultos con leucemia linfoblástica de tipo T
Start Date: 01/01/2020 - **End Date:** 31/12/2022

Type: Project
Year / Funding Entity: 2016 Fundación Científica de la Asociación Española Contra el Cáncer, Grupos Coordinados Estables de Investigación
PI: RIBERA SANTASUSANA, JOSEP MARIA
Reference: GC16173697BIGA
Title: Exploring Mechanisms of Resistance in Adult and Pediatric T-Acute Lymphoblastic Leukemia
Start Date: 01/11/2016 - **End Date:** 31/10/2022

Type: Project
Year / Funding Entity: 2015 European Commission, H2020 JTI-IMI2 2015-06
PI: RIBERA SANTASUSANA, JOSEP MARIA
Reference: 116026
Title: Healthcare Alliance for Resourceful Medicines Offensive against Neoplasms in hematology
Start Date: 01/01/2017 - **End Date:** 30/06/2023

Type: Project
Year / Funding Entity: 2019 European Commission, IMI2-2019-19-01
PI: RIBERA SANTASUSANA, JOSEP MARIA
Reference: 945406
Title: Healthcare alliance for resourceful medicines offensive against neoplasms In hematology – PLUS.
Start Date: 01/10/2020 - **End Date:** 30/09/2023

Type: Network
2021 Instituto de Salud Carlos III, Redes de Investigación Cooperativa Orientada a Resultados en Salud
Reference: RD21/0017/0029
Title: TERAV (Red de Terapias Avanzadas)
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 Deutsche José Carreras Leukämie Stiftung, DJCLS PROJECT CALL 2021
PI: GENESCA FERRER, EULALIA
Reference: DJCLS 08 R/2022
Title: Development of innovative therapy strategies to overcome therapy resistance in the Primary therapy for adult T-cell acute lymphatic leukemia (T-ALL).
Start Date: 01/11/2022 - **End Date:** 31/10/2025

Type: Project
Year / Funding Entity: 2022 Instituto de Salud Carlos III, PROYECTOS DE I+D+I EN SALUD
PI: GENESCA FERRER, EULALIA
Reference: PI22/01880
Title: Identificación de factores genéticos y no genéticos para predecir recaídas y definir nuevas terapias en la leucemia linfoblástica aguda de células T del adulto (LLA-T)
Start Date: 01/01/2023 - **End Date:** 31/12/2025

Cellular Systems Genomics

Elisabetta Mereu

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS PARA CONTRATOS RAMÓN Y CAJAL 2021
PI: MEREU, ELISABETTA
Reference: RYC2021-032359-I
Title: Targeting inflammation in the era of single-cell genomics
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Type: Network
2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: MEREU, ELISABETTA
Reference: 2021 SGR 01586
Title: Inflammation in Aged Tissue Ecosystems(INFLAM-MATES)
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Chronic Lymphocytic Leukemia

Carolina Moreno

Type: Project
Year / Funding Entity: 2020 Deutsche José Carreras Leukämie Stiftung, Forschungsprojekte (R 20) 2020
PI: MORENO ATANASIO, CAROLINA
Reference: DJCLS 04 R/2021
Title: Definition of cellular components of the natural immune response in CLL
Start Date: 15/10/2021 - **End Date:** 14/10/2024

Lymphocyte development and disease

Maribel Parra

Type: HR
Year / Funding Entity: 2018 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)
PI: PARRA BOLA, MARIBEL
Reference: PRE2018-083183
Title: Mecanismos de represión transcripcional en la diferenciación temprana y terminal de linfocitos B
Start Date: 01/05/2020 - **End Date:** 30/06/2023

Type: Project
Year / Funding Entity: 2021 Instituto de Salud Carlos III, Proyectos de investigación en Salud (FIS)
PI: PARRA BOLA, MARIBEL
Reference: PI21/01451
Title: Hacia la medicina de precisión en lactantes con pro-B-LLA y reordenamiento t(4;11): Desarrollo de terapias combinatorias para la inducción dirigida del biomarcador pronóstico HDAC7
Start Date: 01/01/2022 - **End Date:** 31/01/2025

Type: Project
Year / Funding Entity: 2021 Deutsche José Carreras Leukämie Stiftung, DJCLS PROJECT CALL 2021
PI: PARRA BOLA, MARIBEL
Reference: DJCLS 07 R/2022
Title: Precision medicine in infant acute lymphoblastic leukemia: Modulating specific histone deacetylases to improve prognosis
Start Date: 01/10/2022 - **End Date:** 30/09/2025

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS PARA CONTRATOS RAMÓN Y CAJAL 2021
PI: ORIOL DE BARRIOS & PARRA BOLA, MARIBEL
Reference: RYC2021-031197-I
Title: Targeting epigenetic regulation in early lymphopoiesis: towards precision medicine in B cell malignancies
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: PARRA BOLA, MARIBEL
Reference: 2021 SGR 01533
Title: Lymphocyte Development and Disease
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2023 I-Cerca, 12TH EDITION 2023 - CALL FOR CERCA GÍNJOL PATENTS FUND
PI: PARRA BOLA, MARIBEL
Reference: 2023-12-015 IJC ALL-BePrecise-2
Title: Precision medicine in infant t(4;11) pro-B-ALL: targeting the novel biomarker HDAC7
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 European Science Foundation, FIGHT KIDS CANCER 2021-2
PI: PARRA BOLA, MARIBEL & MENÉNDEZ BUJÁN, PABLO
Reference: 21-FKC-EOI-020
Title: Finding a cure for MLL-rearranged infant acute lymphoblastic leukemia
Start Date: 15/01/2023 - **End Date:** 31/12/2024

Lymphoid Neoplasms

Tomàs Navarro

Type: Project
Year / Funding Entity: 2019 Instituto de Salud Carlos III, Proyectos de investigacion en Salud
PI: NAVARRO FERRANDO, JOSE TOMAS
Reference: PI19/01588
Title: Análisis epigenómico integral del linfoma plasmablástico: identificación de características epigenéticas para mejorar el diagnóstico y pronóstico de los pacientes.
Start Date: 01/01/2020 - **End Date:** 31/12/2022

Lymphoma Translational Group

Gaël Roué

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2021
PI: ROUÉ, GAËL
Reference: PID2021-123039OB-C21
Title: Generación de una colección de esferoides organotípicos 3D y de modelos PDX de LDCG completamente anotados para la evaluación preclínica de disruptores del link tumor-estroma
Start Date: 01/09/2022 - **End Date:** 31/08/2025

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: ROUÉ, GAËL
Reference: 2021 SGR 01535
Title: Teràpies personalitzades i bases moleculars dels limfomes agressius de cèl·lules B (TRANSFORB)
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2023 I-Cerca, 12TH EDITION 2023 - CALL FOR CERCA GÍNJOL PATENTS FUND
PI: ROUÉ, GAËL
Reference: 2023-12-018
Title: A new service platform for the generation of Hematological patient-derived Xenograft using in Ovo technology: enabling reliability and cost-efficiency in the preclinical screening of antitumor therapies.
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Nuclear Architecture in Leukemia

Gregoire Stik

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS PARA CONTRATOS RAMÓN Y CAJAL 2021
PI: STIK, GREGOIRE
Reference: RYC2021-032384-I
Title: Identifying the role of the biophysical properties of the chimeric E2A-PBX1 transcription factor on 3D genome alteration and pathogenesis of B-ALL leukemia
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: STIK, GREGOIRE
Reference: PID2022-140859OA-I00
Title: Uncovering the biomolecular properties of the chimeric oncogene E2A-PBX1 and its role on 3D genome alteration of B cell acute lymphoid leukaemia
Start Date: 01/09/2023 - **End Date:** 31/08/2026

Type: Project
Year / Funding Entity: 2019 Worldwide Cancer Research, April 2019 grant round
PI: SARDINA ORTEGA, JOSÉ LUIS & STIK, GREGOIRE
Reference: 20-0269
Title: Uncovering the regulation of chromatin structure by TET2 during leukemic cell fate decisions
Start Date: 01/03/2020 - **End Date:** 28/02/2023

Stem cell biology, developmental leukemia and immunotherapy

Pablo Menéndez

Type: Project
Year / Funding Entity: 2018 European Commission, H2020-SC1-BHC-2018-2020 (Topics 2018)
PI: MENÉNDEZ BUJÁN, PABLO
Reference: 825749
Title: Childhood Leukaemia: Overcoming distance between South America and Europe Regions
Start Date: 01/01/2019 - **End Date:** 31/12/2023

Type: HR
Year / Funding Entity: 2012 Institució Catalana De Recerca i Estudis Avançats, ICREA Senior Call 2012
PI: MENÉNDEZ BUJÁN, PABLO
Start Date: 01/01/2023 - **End Date:** 31/12/2029

Type: Project
Year / Funding Entity: 2020 Instituto de Salud Carlos III, Proyectos de investigación en Salud (FIS)
PI: BUENO UROZ, CLARA
Reference: PI20/00822
Title: TIM3, UNA NUEVA Y PROMETEDORA DIANA INMUNOTERAPÉUTICA EN LLA-B DE NOVO Y EN RECAÍDA
Start Date: 01/01/2021 - **End Date:** 31/12/2023

Type: Project
Year / Funding Entity: 2019 Ministerio de Ciencia, Innovación y Universidades , Retos Investigación
PI: MENÉNDEZ BUJÁN, PABLO
Reference: PID2019-108160RB-I00
Title: TIM3, una nueva y prometedora diana inmunoterapéutica en leucemia linfoblástica aguda B de novo y en recaída
Start Date: 01/06/2020 - **End Date:** 31/05/2023

Type: HR
Year / Funding Entity: 2019 Ministerio de Universidades, Ayudas para la formación de profesorado universitario (FPU)
PI: MENÉNDEZ BUJÁN, PABLO
Reference: FPU19/00039
Title: Explorando células efectoras alogénicas para inmunoterapia en leucemia aguda
Start Date: 01/11/2020 - **End Date:** 31/03/2024

Type: Project
Year / Funding Entity: 2020 Deutsche José Carreras Leukämie Stiftung, Forschungsprojekte (R 20) 2020
PI: MENÉNDEZ BUJÁN, PABLO
Reference: DJCLS 15R/2021
Title: Acute Myeloid Leukemia initiating cells: contribution of hypoxia/HIF pathway to chemoresistance and relapse
Start Date: 15/02/2022 - **End Date:** 14/02/2025

Type: HR
Year / Funding Entity: 2021 Fundación Científica de la Asociación Española Contra el Cáncer, Investigador AECC
PI: MENÉNDEZ BUJÁN, PABLO
Reference: INVES211226MOLI
Title: Contribución de la inestabilidad cromosómica en el desarrollo de la leucemia linfoblástica
aguda infantil con aneuploidías.
Start Date: 01/12/2021 - **End Date:** 30/11/2023

Type: Project
Year / Funding Entity: 2021 Fundación Científica de la Asociación Española Contra el Cáncer, Proyectos generales AECC
PI: BUENO UROZ, CLARA
Reference: PRYGN211192BUEN
Title: INMUNOTERAPIA REDIRIGIDA DE CELULAS-T UNIVERSAL DE ULTIMA GENERACIÓN PARA LEUCEMIA AGUDA
Start Date: 01/12/2021 - **End Date:** 30/11/2024

Type: Project
Year / Funding Entity: 2021 Fundació "La Caixa", CaixaImpulse Validate 2021
PI: MENENDEZ BUJAN, PABLO
Reference: HR18-00069
Title: CARIT4ES - Tailored adoptive CAR T-cell Immunotherapy for Ewing Sarcoma
Start Date: 20/12/2021 - **End Date:** 19/12/2023

Type: HR
Year / Funding Entity: 2021 Instituto de Salud Carlos III, Contratos Predoctorales de formacion en investigación (PFIS)
PI: MENÉNDEZ BUJÁN, PABLO
Reference: FI21/00161
Title: TIM3, A promising novel immunotherapeutic target for de novo and relapsed b-cell acute lymphoblastic.

Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, Proyectos de I+D+i en líneas estratégicas, en colaboración público-privada 2021
PI: BUENO UROZ, CLARA
Reference: PLEC2021-007518
Title: RECREACIÓN DEL NICHO EMBRIONARIO PARA LA PRODUCCIÓN DE CÉLULAS MADRE HEMATOPOYÉTICAS Y SUS DERIVADOS EN GASTRULOIDES HUMANOS
Start Date: 01/12/2021 - **End Date:** 30/11/2024

Type: HR
Year / Funding Entity: 2020 Ministerio de Ciencia, Innovación y Universidades , Ayudas para contratos predoctorales en el marco del Plan Estatal de I+D+i (FPI)
PI: MENÉNDEZ BUJÁN, PABLO
Reference: PRE2020-092778
Title: TIM3, UNA NUEVA Y PROMETEDORA DIANA INMUNOTERAPEUTICA EN LEUCEMIA LINFOBLASTICA AGUDA BDE NOVO Y EN RECAIDA
Start Date: 01/08/2021 - **End Date:** 31/07/2025

Type: Project
Year / Funding Entity: 2021 European Commission, TOOLS AND TECHNOLOGIES FOR A HEALTHY SOCIETY 2021
PI: MENÉNDEZ BUJÁN, PABLO
Reference: 101057250
Title: RNA PROCESSING FOR ANTI-CANCER IMMUNOTHERAPY
Start Date: 01/06/2022 - **End Date:** 31/05/2025

Type: HR
Year / Funding Entity: 2021 European Commission, MSCA POSTDOCTORAL FELLOWSHIPS 2021
PI: MENENDEZ BUJAN, PABLO
Reference: 101068558
Title: Contribution of Lipid Droplets to the pathogenesis and chemoresistance of Acute Myeloid Leukemia
Start Date: 01/09/2023 - **End Date:** 31/08/2025

Type: Project
Year / Funding Entity: 2022 Fundación Merck Salud, AYUDAS MERCK DE INVESTIGACIÓN 2022
PI: MENENDEZ BUJAN, PABLO
Reference: MERCK 2022
Title: Desarrollo de una innovadora inmunoterapia adoptiva de células CAR-T para sacorma de Ewing
Start Date: 10/07/2022 - **End Date:** 15/06/2025

Type: Project
Year / Funding Entity: 2021 European Science Foundation, FIGHT KIDS CANCER 2021-2
PI: PARRA BOLA, MARIBEL & MENÉNDEZ BUJÁN, PABLO
Reference: 21-FKC-EOI-020
Title: Finding a cure for MLL-rearranged infant acute lymphoblastic leukemia
Start Date: 15/01/2023 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS JUAN DE LA CIERVA FORMACIÓN
PI: MENÉNDEZ BUJÁN, PABLO
Reference: FJC2021-046789-I
Title: Next generation T-cell redirected immunotherapy for acute lymphocytic leukemia
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PROYECTOS EN COLABORACIÓN PÚBLICO-PRIVADA 2021
PI: MENENDEZ BUJAN, PABLO
Reference: CPP2021-008508
Title: Desarrollo de una nueva terapia CAR-T dirigida a CD1a para el tratamiento de leucemias/ linfomas de células T CD1a+
Start Date: 01/03/2022 - **End Date:** 28/02/2025

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PROYECTOS EN COLABORACIÓN PÚBLICO-PRIVADA 2021
PI: MENENDEZ BUJAN, PABLO
Reference: CPP2021-008676
Title: Desarrollo de una nueva tecnología de ingeniería genética aplicada en una terapia CAR-T
Start Date: 01/06/2022 - **End Date:** 31/05/2025

Type: HR
Year / Funding Entity: 2022 Lady Tata Memorial Trust, INTERNATIONAL AWARDS 2022

PI: MENENDEZ BUJAN, PABLO
Group: Stem cell biology, developmental leukemia and immunotherapy
Reference: 3465
Title: Contribution of Lipid Droplets to the pathogenesis and chemoresistance of Acute Myeloid Leukeamia
Start Date: 01/10/2022 - **End Date:** 31/08/2023

Type: Project
Year / Funding Entity: 2022 Fundación Uno Entre Cien Mil , IX BECA "Unoentrecienmil" PARA LA INVESTIGACIÓN EN EL ÁREA DE LA LEUCEMIA INFANTIL 2022
PI: BUENO UROZ, CLARA
Title: Novel and innovative therapeutic strategies for patients with childhood B acute lymphoblastic leukemia harboring MLL rearrangements
Start Date: 26/07/2022 - **End Date:** 25/07/2024

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: MENÉNDEZ BUJÁN, PABLO
Reference: 2021 SGR 00887
Title: Stem cell biology, developmental leukemia and immunotherapy
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 European Commission, European Commission, Proof of Concept Grants 2021 (ERC-2021-PoC)
PI: MENENDEZ BUJAN, PABLO
Reference: 101100665
Title: Byspecific CAR T-cells for the treatment of CD22/CD19 positive cancer
Start Date: 01/07/2023 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, PROYECTOS DE I+D+i EN LÍNEAS ESTRATÉGICAS, EN COLABORACIÓN PÚBLICO-PRIVADA 2022
PI: MENENDEZ BUJAN, PABLO
Reference: PLEC2022-009416
Title: Desarrollo de una inmunoterapia innovadora adoptiva de células CAR-T para sarcoma de Ewing
Start Date: 01/11/2022 - **End Date:** 31/10/2025

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, AJUTS A DOCTORATS INDUSTRIALS
PI: MENENDEZ BUJAN, PABLO
Reference: 2022 DI 43
Title: Development of new CAR-T treatment for glioblastoma multiforme
Start Date: 01/10/2022 - **End Date:** 30/09/2025

Type: Project
Year / Funding Entity: 2022 Fundación Científica de la Asociación Española Contra el Cáncer, PROYECTOS GENERALES AECC 2023
PI: MENENDEZ BUJAN, PABLO
Reference: PRYGN234975MENE
Title: Stem cell biology, developmental leukemia and immunotherapy.
Start Date: 01/12/2023 - **End Date:** 30/11/2026

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: MENÉNDEZ BUJÁN, PABLO
Reference: PID2022-142966OB-I00
Title: Chromosome instability and leukemia-initiating stem cell-driven pathophysiology of aneuploid childhood B-cell acute lymphoblastic leukemia.
Start Date: 01/09/2023 - **End Date:** 31/08/2026

Type: Project
Year / Funding Entity: 2022 Ministerio de Ciencia e Innovación, PROYECTOS EN COLABORACIÓN PÚBLICO-PRIVADA 2022
PI: MENENDEZ BUJAN, PABLO
Reference: CPP2022-009759
Title: Desarrollo de una terapia CAR-T dual dirigida a CD1a/CCR9 para el tratamiento de la leucemia linfoblástica aguda de células T R/R
Start Date: 01/10/2023 - **End Date:** 30/09/2026

Type: Project
Year / Funding Entity: 2022 European Commission, EIC TRANSITION 2022
PI: MENENDEZ BUJAN, PABLO
Reference: 101113067
Title: Next generation, off-the-shelf CD1a/CCR9-directed CAR immunotherapy for relapse/refractory T-cell acute

lymphoblastic leukemia
Start Date: 01/04/2023 - **End Date:** 31/03/2026

Stem Cells and Cancer

Anna Bigas

Type: HR
Year / Funding Entity: 2021 European Commission, MSCA POSTDOCTORAL FELLOWSHIPS 2021
PI: BIGAS SALVANS, ANNA & CUARTERO BETRIU, SERGI
Reference: 101068212
Title: Identification and characterization of long non-coding RNAs as drivers of stemness in hematopoietic stemcells and leukemia.
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2021 Deutsche José Carreras Leukämie Stiftung, DJCLS PROJECT CALL 2021
PI: BIGAS SALVANS, ANNA
Reference: DJCLS 14 R/2022
Title: Establishment of preclinical models of the juvenile myelomonocytic leukemia to develop new therapeutic approaches for high risk patients
Start Date: 01/10/2022 - **End Date:** 30/09/2025

T cell lymphomas

Laura Mondragón

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: MONDRAGÓN MARTÍNEZ, LAURA
Reference: PID2020-116049RA-I00
Title: Papel de Apaf-1 en la maduración de los timocitos TCR-gd y el desarrollo de linfomas - RAINCOAT
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2019 Ministerio de Ciencia e Innovación, Subprograma de ayudas para contratos Ramon y Cajal
PI: MONDRAGÓN MARTÍNEZ, LAURA
Reference: RYC2019-026522-I
Start Date: 01/04/2021 - **End Date:** 31/03/2026

Type: Project
Year / Funding Entity: 2022 Leukemia Research Foundation, Hollis Brownstein Research Grants Program - New Investigator Blood Cancer Research Grant Program (Leukemia, Lymphoma, Myeloma, MDS)
PI: MONDRAGÓN MARTÍNEZ, LAURA
Title: New therapeutic approach for treating angioimmunoblastic T cell lymphoma based on the discovery of a new Tfh
Start Date: 01/10/2022 - **End Date:** 30/09/2023

Chromatin, Metabolism and Cell Fate

Marcus Buschbeck

Type: Project
Year / Funding Entity: 2019 Fundació La Marató de TV3, Marató 2019: Càncer
PI: BUSCHBECK, MARCUS
Reference: 201907-30-31
Title: Explorant i explotant les variants d'histones com a dianes terapèutiques en la leucèmia mieloide aguda
Start Date: 20/01/2021 - **End Date:** 19/01/2024

Type: Project
Year / Funding Entity: 2020 European Commission, H2020_MSCA_ITN-2020 Marie Skłodowska-Curie Actions – Innovative Training Networks
PI: BUSCHBECK, MARCUS
Reference: 953407
Title: Exploring cell-to-cell heterogeneity and exploiting epigenetic regulation for the interception of myeloid disease cells.
Start Date: 01/01/2021 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2019 Ministerio de Ciencia e Innovación, Ayudas para contratos predoctorales para la formacion de doctores (FPI)

PI: BUSCHBECK, MARCUS
Reference: PRE2019-088529
Title: Regulacion de la arquitectura tridimensional de la cromatina por parte de las variantes de histona macroh2a y su capacidad de unir metabolitos.
Start Date: 01/10/2020 - **End Date:** 30/09/2024

Type: HR
Year / Funding Entity: 2021 Deutsche Forschungsgemeinschaft, Walter Benjamin Abroad Fellowship 2021
PI: BUSCHBECK, MARCUS
Reference: WI 5839/1-1
Title: Exploring epigenetic modulation in bone marrow stroma as novel therapeutic approach to prevent leukaemia
Start Date: 01/05/2022 - **End Date:** 30/04/2024

Type: HR
Year / Funding Entity: 2022 Fundación Científica de la Asociación Española Contra el Cáncer, INVESTIGADOR AECC 2022
PI: BUSCHBECK, MARCUS
Reference: INVES223200DIES
Title: A functional approach to accelerate the development of combinatorial drug therapies in blood cancers
Start Date: 01/11/2022 - **End Date:** 31/10/2025

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2021
PI: BUSCHBECK, MARCUS
Reference: PID2021-126907NB-I00
Title: Regulación de potenciadores de la expresión génica y detección de metabolitos por parte de variantes de histonas
Start Date: 01/09/2022 - **End Date:** 31/08/2025

Type: Project
Year / Funding Entity: 2022 Fundación Científica de la Asociación Española Contra el Cáncer, PROYECTOS GENERALES AECC 2022
PI: BUSCHBECK, MARCUS
Reference: PRYGN222668BUSC
Title: Re-educación epigenética del estroma en el microambiente de la médula ósea como enfoque terapéutico en la prevención de cáncer de sangre (EPISTROMA)
Start Date: 01/12/2022 - **End Date:** 30/11/2025

Type: HR
Year / Funding Entity: 2021 European Molecular Biology Organization, EMBO POSTDOCTORAL FELLOWSHIPS 2021 (Spring evaluation)
PI: BUSCHBECK, MARCUS
Reference: ALTF 81-2022
Title: Elucidating the role of the histone variant macroH2A1.2 as a metabolic sensor in cell fate
Start Date: 01/08/2022 - **End Date:** 31/07/2024

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: BUSCHBECK, MARCUS
Reference: 2021 SGR 00260
Title: Chromatin, metabolism and cell fate
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Epigenetic Control of Haematopoiesis

José Luis Sardina

Type: Project
Year / Funding Entity: 2019 Worldwide Cancer Research, April 2019 grant round
PI: SARDINA ORTEGA, JOSÉ LUIS & STIK, GREGOIRE
Reference: 20-0269
Title: Uncovering the regulation of chromatin structure by TET2 during leukemic cell fate decisions
Start Date: 01/03/2020 - **End Date:** 28/02/2023

Type: HR
Year / Funding Entity: 2019 Instituto de Salud Carlos III, Contratos Miguel Servet - Tipo 1
PI: SARDINA ORTEGA, JOSÉ LUIS
Reference: CP19/00176
Title: Role of TET2 in chromatin structure regulation during the onset and development of mieloid malignancies
Start Date: 01/01/2020 - **End Date:** 31/12/2024

Type: Project
Year / Funding Entity: 2019 Ministerio de Ciencia, Innovación y Universidades , Retos Investigación
PI: SARDINA ORTEGA, JOSÉ LUIS
Reference: PID2019-111243RA-I00

Title: Descifrando el impacto de TET2 sobre la estructura de la cromatina en el inicio leucémico
Start Date: 01/06/2020 - **End Date:** 31/05/2023

Type: HR
Year / Funding Entity: 2020 Ministerio de Ciencia, Innovación y Universidades , Ayudas para contratos predoctorales en el marco del Plan Estatal de I+D+i (FPI)
PI: SARDINA ORTEGA, JOSÉ LUIS
Reference: PRE2020-093881
Title: Descifrando el impacto de tet2 sobre la estructura de la cromatina en el inicio leucémico.
Start Date: 01/08/2021 - **End Date:** 31/07/2025

Type: Project
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, PROYECTOS DE GENERACIÓN DE CONOCIMIENTO 2022
PI: SARDINA ORTEGA, JOSÉ LUIS
Reference: PID2022-140376OB-I00
Title: Dissecting the DNA Methylation Underpinnings of Healthy and Malignant Myeloid Lineage Ageing
Start Date: 01/09/2023 - **End Date:** 31/08/2026

Type: Other
Year / Funding Entity: 2023 Ministerio de Ciencia e Innovación, ACREDITACIÓN R3
PI: SARDINA ORTEGA, JOSÉ LUIS
Group: Epigenetic Control of Haematopoiesis
Reference: CR32023-041341
Start Date: 05/10/2023 - **End Date:** 31/12/2100

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: BALLESTAR TARIN, ESTEBAN & SARDINA ORTEGA, JOSÉ LUIS
Reference: 2021 SGR 01213
Title: Epigenètica i Malaltia Immunitària
Start Date: 01/01/2022 - **End Date:** 30/06/2025

Genetics and Epigenetics in Myeloid Neoplasms

Blanca Xicoy & Lurdes Zamora

Type: HR
Year / Funding Entity: 2022 Lady Tata Memorial Trust, INTERNATIONAL AWARDS 2022
PI: ZAMORA PLANA, LURDES
Reference: 3436
Title: Dissection of clonal evolution and diversification in secondary and therapy-related acute myeloid leukaemias
Start Date: 01/10/2022 - **End Date:** 30/09/2023

Leukemia and Immuno-Oncology

Laura Belver

Type: Project
Year / Funding Entity: 2020 Fundación FERO, BECA FERO EN INVESTIGACIÓN ONCOLÓGICA TRASLACIONAL 2020
PI: BELVER MIGUEL, LAURA
Reference: BFERO2020.03
Title: Molecular pathways and targeted therapies in Juvenile Myelomonocytic Leukemia
Start Date: 01/12/2020 - **End Date:** 30/11/2022

Type: HR
Year / Funding Entity: 2020 Govern d'Andorra, Ajuts de tercer cicle de l'any 2020 - Modalitat 1 - Nous ajuts
PI: BELVER MIGUEL, LAURA
Reference: AJT-PRS2000176
Title: Mecanismes oncogènics en la Leucèmia Mielomonocítica Juvenil i teàpies dirigides pel seu tractament
Start Date: 02/01/2021 - **End Date:** 01/01/2024

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: BELVER MIGUEL, LAURA
Reference: PID2020-117645RA-I00
Title: Impacto funcional de las mutaciones no codificantes asociadas a enhancers en Leucemia Mielomonocítica Juvenil (JMML_ENH)

Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per a la contractació de personal investigador novell (FI-2022)
PI: BELVER MIGUEL, LAURA
Reference: 2022 FI_B 00595, 2023 FI-2 00595
Title: Analysis of the functional impact of non-coding mutations in Juvenile Myelomonocytic Leukemia
Start Date: 01/04/2022 - **End Date:** 31/03/2025

Type: HR
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Subprograma de ayudas para contratos Ramon y Cajal
PI: BELVER MIGUEL, LAURA
Reference: RYC2020-029400-I
Title: Genetics and molecular mechanisms in hematologic malignancies
Start Date: 01/01/2022 - **End Date:** 31/12/2026

Type: Project
Year / Funding Entity: 2022 Federación Española de Enfermedades Raras, VII CONVOCATORIA DE AYUDAS A LA INVESTIGACIÓN DE FUNDACIÓN FEDER
PI: BELVER MIGUEL, LAURA
Title: Desarrollo de nuevas terapias celulares para el tratamiento de pacientes de lupus eritematoso sistémico
Start Date: 01/01/2023 - **End Date:** 30/06/2024

Type: Project
Year / Funding Entity: 2022 Fundación Merck Salud, II AYUDA FUNDACIÓN MERCK SALUD-FUNDACIÓN FEDER A LA INVESTIGACIÓN CLÍNICA EN ENFERMEDADES RARAS
PI: BELVER MIGUEL, LAURA
Title: Diseño de terapias celulares basadas en péptidos DNA miméticos para el tratamiento de pacientes de lupus eritematoso sistémico
Start Date: 03/07/2023 - **End Date:** 03/07/2026

Myelodysplastic Syndromes

Francesc Solé

Type: Project
Year / Funding Entity: 2017 Instituto de Salud Carlos III, Acciones complementarias de programación conjunta internacional
PI: SOLE RISTOL, FRANCESC
Reference: AC18/00002
Title: An integrated European platform to conduct translational studies in myelodysplastic syndromes based on the EuroBloodNet infrastructure
Start Date: 01/01/2019 - **End Date:** 31/12/2021

Type: Project
Year / Funding Entity: 2019 Fundació La Marató de TV3, Marató 2019: Càncer
PI: SOLE RISTOL, FRANCESC
Reference: 201930-30
Title: Estratègia terapèutica per a la leucèmia basada en la disrupció dels lisosomes
Start Date: 30/07/2020 - **End Date:** 29/07/2023

Type: Project
Year / Funding Entity: 2018 Fundación Científica de la Asociación Española Contra el Cáncer, Ayudas a proyectos de investigacion en cáncer TRANSCAN (Translational Research on Rare Cancers)
PI: SOLE RISTOL, FRANCESC
Reference: TRNSC18003SOL
Title: An integrated European platform to conduct translational studies in myelodysplastic syndromes based on the EuroBloodNet infrastructure
Start Date: 01/12/2018 - **End Date:** 31/03/2022

Type: Project
Year / Funding Entity: 2020 Instituto de Salud Carlos III, Proyectos de investigación en Salud (FIS)
PI: SOLE RISTOL, FRANCESC
Reference: PI20/00531
Title: Caracterización genética de las neoplasias mieloides asociadas a tratamiento (Therapy related myeloid neoplasms, TRMN)
Start Date: 01/01/2021 - **End Date:** 31/12/2023

Type: Project
Year / Funding Entity: 2020 Deutsche José

Carreras Leukämie Stiftung, Forschungsprojekte (R 20) 2020
PI: SOLE RISTOL, FRANCESC
Reference: DJCLS 01R/2021
Title: Dissecting the mechanisms of clonal expansion in del(5q) myelodysplastic syndrome to selectively target the disease-initiating hematopoietic stem cells
Start Date: 01/10/2021 - **End Date:** 30/09/2024

Type: Network
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, Ajuts per donar suport a l'activitat científica dels grups de recerca de Catalunya (SGR-Cat 2021)
PI: SOLE RISTOL, FRANCESC
Reference: 2021 SGR 00560
Title: Grup de recerca de l'estudi de neoplasies hematològiques
Start Date: 01/01/2022 - **End Date:** 31/12/2024

Type: HR
Year / Funding Entity: 2022 Fundación Española de Hematología y Hemoterapia, BECAS DE INVESTIGACIÓN FEHH
PI: SOLE RISTOL, FRANCESC
Group: Myelodysplastic Syndromes
Title: Monitorización de la carga mutacional en pacientes con síndrome mielodisplásico de bajo riesgo en muestras de sangre periférica secuenciales
Start Date: 01/01/2023 - **End Date:** 31/12/2023

Type: HR
Year / Funding Entity: 2022 Agència de Gestió d'Ajuts Universitaris i de Recerca, CONVOCATÒRIA DELS AJUTS JOAN ORÓ PER A LA CONTRACTACIÓ DE PERSONAL INVESTIGADOR PREDOCTORAL EN FORMACIÓ (FI 2023)
PI: SOLE RISTOL, FRANCESC
Reference: 2023 FI-1 00200
Title: Genetic characterization of myelodysplastic syndromes with germline predisposition (gMDS) and therapy-related myeloid neoplasms (TRMN)
Start Date: 01/06/2023 - **End Date:** 31/05/2026

Transcriptional Dynamics in Leukemia

Sergi Cuartero

Type: Project
Year / Funding Entity: 2019 Jérôme Lejeune Foundation, Cycle 2019b- Down syndrome research
PI: CUARTERO BETRIU, SERGI
Group: Transcriptional Dynamics in Leukemia
Reference: #1902
Title: Myeloid leukemia in Down syndrome: exploring the interplay between transcriptional regulation and immune signalling
Start Date: 01/04/2020 - **End Date:** 06/01/2023

Type: Project
Year / Funding Entity: 2020 Ministerio de Ciencia e Innovación, Retos Investigación 2021
PI: CUARTERO BETRIU, SERGI
Reference: PID2020-117950RA-I00
Title: Descifrando el rol de las mutaciones en el complejode las cohesinas y la estructura 3D del genoma en leucemia mieloide (MYELO-3D)
Start Date: 01/09/2021 - **End Date:** 31/08/2024

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS PARA CONTRATOS RAMÓN Y CAJAL 2021
PI: CUARTERO BETRIU, SERGI
Reference: RYC2021-033018-I
Title: The role of cohesin and 3D genome organization in acute myeloid leukemia
Start Date: 01/01/2023 - **End Date:** 31/12/2027

Type: Project
Year / Funding Entity: 2021 American Society of Hematology, ASH GLOBAL RESEARCH AWARD
PI: CUARTERO BETRIU, SERGI
Title: Understanding the role of 3D genome organization in myeloid leukemia of Down Syndrome
Start Date: 01/07/2022 - **End Date:** 30/06/2025

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS CONTRATOS PREDOCTORALES PARA FORMACIÓN DOCTORES (FPI)
PI: CUARTERO BETRIU, SERGI
Reference: PRE2021-097862

Title: DESCIFRANDO EL ROL DE LAS MUTACIONES EN EL COMPLEJO DE LAS COHESINAS Y LA ESTRUCTURA 3D DEL GENOMA EN LEUCEMIA MIELOIDE
Start Date: 01/08/2022 - **End Date:** 31/07/2026

Type: HR
2021 European Commission, MSCA POSTDOCTORAL FELLOWSHIPS 2021
PI: BIGAS SALVANS, ANNA & CUARTERO BETRIU, SERGI
Reference: 101068212
Title: Identification and characterization of long non-coding RNAs as drivers of stemness in hematopoietic stemcells and leukemia.
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Barcelona Endothelium Team

Enric Carreras

Type: HR
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS JUAN DE LA CIERVA FORMACIÓN
PI: CARRERAS PONS, ENRIC
Reference: FJC2021-048123-I
Title: Deepening in the pathophysiology of the endothelial damage in various pathologies
Start Date: 01/01/2023 - **End Date:** 31/12/2024

Proteomics

Carolina de la Torre

Type: Project
Year / Funding Entity: 2021 Ministerio de Ciencia e Innovación, AYUDAS A PROYECTOS ESTRATÉGICOS ORIENTADOS A LA TRANSICIÓN ECOLÓGICA Y A LA TRANSICIÓN DIGITAL 2021
PI: DE LA TORRE GÓMEZ, CAROLINA
Reference: TED2021-130467B-C22
Title: Noves solucions contra microorganismes basades en pèptids bioactius i productes naturals. Col·laboració amb empresa BBTrends.
Start Date: 01/12/2022 - **End Date:** 30/11/2024

Type: Project
Year / Funding Entity: 2022 Instituto de Salud Carlos III, AYUDAS DE PROYECTOS DE INVESTIGACIÓN DE MEDICINA PERSONALIZADA DE PRECISIÓN 2022
PI: DE LA TORRE GÓMEZ, CAROLINA
Reference: PMP22/00004
Title: Caracterización multiómica del carcinoma escamoso de cabeza y cuello mediante biopsia gaseosa y líquida: aplicación diagnóstica, pronóstica y de seguimiento. HN-OMICS
Start Date: 01/01/2023 - **End Date:** 31/12/2025

Single Cell

Caterina Mata

Type: Project
Year / Funding Entity: 2022 Fundació la Marató de TV3, MARATÓ TV3: SALUT MENTAL
PI: MATA GARCIA, CATERINA
Reference: 202235-31
Title: Brain and blood coexpression networks using DDR1 as a seed gene in bipolar disorder. Identification of new biomarkers.
Start Date: 31/03/2023 - **End Date:** 30/03/2026

Publications

Indicators

222 **Number of indexed articles published per year**

12,70 **Median Impact F** actor per year

145 Q1 **Papers Q1**

65 D1 **Papers D1**

9451 **Citations at Web of Science** (Web of Science: 05/02/2024)

2023 Publications

Cancer Epigenetics

Manel Esteller

Chen J, Song Y, Li Y, Wei Y, Shen S, Zhao Y, You D, Su L, Bjaanaes MM, Karlsson A, Planck M, Staaf J, Helland Å, **Esteller M,** Shen H, Christiani DC, Zhang R, Chen F.A trans-omics assessment of gene-gene interaction in early-stage NSCLC. Mol Oncol. 2023 Jan;17(1):173-187. doi: 10.1002/1878-0261.13345. Epub 2022 Dec 5. PMID: 36408734 - Citations: 1 [23/01/2024] IF: 6,6 - QUARTILE 1

Orsolic I, Carrier A, Esteller M. Genetic and epigenetic defects of the RNA modification machinery in cancer Trends Genet. 2023 Jan;39(1):74-88. doi: 10.1016/j.tig.2022.10.004. Epub 2022 Nov 12. PMID: 36379743 - Citations: 6 [23/01/2024] IF: 11,4 - QUARTILE 1

van der Strate I, Kazemzadeh F, Nagtegaal ID, Robbrecht D, van de Wouw A, Padilla CS, Duijts S, **Esteller M**, Greco FA, Pavlidis N, Qaseem A, Snaebjornsson P, van Zanten SV, Loef C. International consensus on the initial diagnostic workup of cancer of unknown primary. Crit Rev Oncol Hematol. 2023 Jan;181:103868. doi: 10.1016/j.critrevonc.2022.103868. Epub 2022 Nov 23. PMID: 36435296 - Citations: 5 [23/01/2024] IF: 6,2 - QUARTILE 1

Davalos V; Esteller M. Cancer epigenetics in clinical practice. CA Cancer J Clin. 2023 Jul-Aug;73(4):376-424. doi: 10.3322/caac.21765. Epub 2022 Dec 13. PMID: 36512337 - Citations: 25 [23/01/2024] IF: 254,7 - QUARTILE 1

Petazzi P, Jorge-Torres OC, Gomez A, Scognamiglio I, Serra-Musach J, **Merkel A**, **Grases D**, Xiol C, O'Callaghan M, Armstrong J, **Esteller M**, **Guil S.** Global Impairment of Immediate-Early Genes Expression in Rett Syndrome Models and Patients Linked to Myelination Defects. Int J Mol Sci. 2023 Jan 11;24(2):1453. doi: 10.3390/ijms24021453. PMID: 36674969 - Citations: 2 [23/01/2024] IF: 5,6 - QUARTILE 1

Ortega-Alarcon D, Claveria-Gimeno R, Vega S, **Jorge-Torres OC, Esteller M**, Abian O, **Velazquez-Campoy A.** Unexpected thermodynamic signature for the interaction of hydroxymethylated DNA with MeCP2. Int J Biol Macromol. 2023 Mar 31;232:123373. doi: 10.1016/j.ijbiomac.2023.123373. Epub 2023 Jan 23. PMID: 36702223 - Citations: 2 [23/01/2024] IF: 8,2 - QUARTILE 1

Rodrigo-Calvo MT, Saez de Gordoa K, Lopez-Prades S, Archilla I, Diaz A, Berrios M, Camps J, **Musulen E**, Cuatrecasas M. Tumour Cell Seeding to Lymph Nodes from In Situ Colorectal Cancer Cancers (Basel). 2023 Jan 30;15(3):842. doi: 10.3390/cancers15030842. PMID: 36765800 - Citations: 1 [23/01/2024] IF: 5,2 - QUARTILE 2

Noguera-Castells A, García-Prieto CA, Álvarez-Errico D, Esteller M. Validation of the new EPIC DNA methylation microarray (900K EPIC v2) for high-throughput profiling of the human DNA methylome. Epigenetics.2023 Mar;18(1):2185742. doi: 10.1080/15592294.2023.2185742. PMID: 36871255 - Citations: 3 [23/01/2024] IF: 3,7 - QUARTILE 2

Santamarina-García M, Brea-Iglesias J, Bramsen JB, Fuentes-Losada M, Caneiro-Gómez FJ, Vázquez-Bueno JÁ, Lázare-Iglesias H, Fernández-Díaz N, Sánchez-Rivadulla L, Betancor YZ, Ferreiro-Pantín M, Conesa-Zamora P, Antúnez-López JR, Kawazu M, **Esteller M**, Andersen CL, Tubio JMC, López-López R, Ruiz-Bañobre J. MSIMEP: Predicting microsatellite instability from microarray DNA methylation tumor profiles. iScience. 2023 Feb 3;26(3):106127. doi: 10.1016/j.isci.2023.106127. eCollection 2023 Mar 17. PMID: 36879816 - Citations: 0 [23/01/2024] IF: 5,8 - QUARTILE 1

Davalos V, Lovell CD, Von Itter R, Dolgalev I, Agrawal P, Baptiste G, Kahler DJ, Sokolova E, Moran S,

Piqué L, Vega-Saenz de Miera E, Fontanals-Cirera B, Karz A, Tsirigos A, Yun C, Darvishian F, Etchevers HC, Osman I, **Esteller M**, Schober M, Hernando E. An epigenetic switch controls an alternative NR2F2 isoform that unleashes a metastatic program in melanoma Nat Commun. 2023 Apr 4;14(1):1867. doi: 10.1038/s41467-023-36967-2. PMID: 37015919 - Citations: 4 [23/01/2024] IF: 16,6 - QUARTILE 1

Alburquerque-Bejar JJ, Navajas-Chocarro P, Saigi M, **Ferrero-Andres A**, **Morillas JM, Vilarrubi A**, Gomez A, Mate JL, Munoz-Marmol AM, **Romero OA**, **Blecua P, Davalos V**, **Esteller M**, **Pros E**, **Llabata P**, **Torres-Diz M**, Esteve-Codina A, **Sanchez-Cespedes M**. MYC activation impairs cell-intrinsic IFNγ signaling and confers resistance to anti-PD1/PD-L1 therapy in lung cancer Cell Rep Med. 2023 Apr 18;4(4):101006. doi: 10.1016/j.xcrm.2023.101006. Epub 2023 Apr 11. PMID: 37044092 - Citations: 1 [23/01/2024] IF: 14,3 - QUARTILE 1

Mellid S, García F, Leandro-García LJ, Díaz-Talavera A, Martínez-Montes ÁM, Gil E, Calsina B, Monteagudo M, Letón R, Roldán-Romero JM, Santos M, Lanillos J, Valdivia C, Martínez-Puente N, de Nicolás-Hernández J, Jiménez S, Pérez-Martínez M, Honrado E, Coloma J, Cerezo A, Santiveri CM, **Esteller M**, Campos-Olivas R, Caleiras E, Montero- Conde C, Rodríguez-Antona C, Muñoz J, Robledo M, Cascón A. DLST mutations in pheochromocytoma and paraganglioma cause proteome hyposuccinylation and metabolic remodeling. Cancer Commun (Lond). 2023 Jul;43(7):838-843. doi: 10.1002/cac2.12427. Epub 2023 May 4. PMID: 37139660 - Citations: 1 [23/01/2024] IF: 16,2 - QUARTILE 1

Ribeiro ML, Profitós-Pelejà N, Santos JC, Blecua P, Reyes-Garau D, Armengol M, Fernández-Serrano M, Miskin HP, Bosch F, **Esteller M**, Normant E, **Roué G.** G protein-coupled receptor 183 mediates the sensitization of Burkitt lymphoma tumors to CD47 immune checkpoint blockade by anti-CD20/PI3Kδi dual therapy. Front Immunol. 2023 Apr 21;14:1130052. doi: 10.3389/fimmu.2023.1130052. eCollection 2023. PMID: 37153563 - Citations: 1 [23/01/2024] IF: 7,3 - QUARTILE 1

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Janin M, Davalos V, Esteller M. Cancer metastasis under the magnifying glass of epigenetics and epitranscriptomics Cancer Metastasis Rev. 2023 Dec 15. doi: 10.1007/s10555-023-10120-3.

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Gallardo-Gómez M, Rodríguez-Girondo M, Planell N, Moran S, Bujanda L, Etxart A, Castells A, Balaguer F, Jover R, **Esteller M**, Cubiella J, Gómez-Cabrero D, De Chiara L. Serum methylation of GALNT9, UPF3A, WARS, and LDB2 as noninvasive biomarkers for the early detection of colorectal cancer and advanced adenomas. Clin Epigenetics. 2023 Oct 4;15(1):157. doi: 10.1186/s13148-023-01570-1. PMID: 37794510 - Citations: 0 [10/01/2024] IF: 5,7 - QUARTILE 1

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Pham VN, Bruemmer KJ, Toh JDW, Ge EJ, Tenney L, Ward CC, Dingler FA, Millington CL, **Garcia-Prieto CA**, Pulos- Holmes MC, Ingolia NT, **Pontel LB**, **Esteller M**, Patel KJ, Nomura DK, Chang CJ. Formaldehyde regulates S-adenosylmethionine biosynthesis and one-carbon metabolism. Science. 2023 Nov 3;382(6670):eabp9201. doi: 10.1126/science.abp9201. Epub 2023 Nov 3. PMID: 37917677 - Citations: 0 [10/01/2024] IF: 56,9 - QUARTILE 1

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Llinàs-Arias P, Ensenyat-Mendez M, Íñiguez-Muñoz S, Orozco JIJ, Valdez B, Salomon MP, Matsuba C, Solivellas- Pieras M, Bedoya-López AF, Sesé B, Mezger A, Ormestad M, Unzueta F, Strand SH, Boiko AD, Hwang ES, Cortés J, DiNome ML, **Esteller M**, Lupien M, Marzese DM. Chromatin insulation orchestrates matrix metalloproteinase gene cluster expression reprogramming in aggressive breast cancer tumors. Mol Cancer. 2023 Nov 28;22(1):190. doi: 10.1186/s12943-023-01906-8. PMID: 38017545 - Citations: 0 [23/01/2024] IF: 37,3 - QUARTILE 1

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Campillo-Marcos I, Casado-Pelaez M, Davalos V, Ferrer G, Mata C, Mereu E, Roue G, Valcárcel D, Molero A, **Zamora L, Xicoy B, Palomo L, Acha P**, Manzanares A, Tobiasson M, Hellström-Lindberg E, **Sole F, Esteller M.** Single-Cell Multiomics Analysis

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Cancer Genetics

Montse Sanchez-Cespedes

Alburquerque-Bejar JJ, Navajas-Chocarro P, Saigi M, **Ferrero-Andres A**, **Morillas JM, Vilarrubi A**, Gomez A, Mate JL, Munoz-Marmol AM, **Romero OA**, **Blecua P, Davalos V**, **Esteller M**, **Pros E**, **Llabata P**, **Torres-Diz M**, Esteve-Codina A, **Sanchez-Cespedes M**. MYC activation impairs cell-intrinsic IFNγ signaling and confers resistance to anti-PD1/PD-L1 therapy in lung cancer Cell Rep Med. 2023 Apr 18;4(4):101006. doi: 10.1016/j.xcrm.2023.101006. Epub 2023 Apr 11. PMID: 37044092 - Citations: 1 [23/01/2024] IF: 14,3 - QUARTILE 1

Notario L, Cucurull M, Cerdà G, Sanz C, Carcereny E, Muñoz-Mármol A, Hernández A, Domènech M, Morán T, **Sánchez-Céspedes M**, Costa M, Mate JL, Esteve A, Saigí M. Characterization of a cohort of metastatic lung cancer patients harboring KRAS mutations treated with immunotherapy: differences according to KRAS G12C vs. non-G12C

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Cancer heterogeneity and hierarchies

Verónica Rodilla

Donna MLG, León MLC, Colas CG, Gunsett AP, Maniero SF, **Osuna DO**, Klimovsky E, Coradini L, Enrico D, Chacón M, Waisberg F. Breaking the unvirtuous cycle: barriers and opportunities for research and development in Paraguay. A case study Front Med (Lausanne). 2023 Nov 16;10:1266246. doi: 10.3389/fmed.2023.1266246. eCollection 2023. PMID: 38034550 - Citations: 0 [23/01/2024] IF: 3,9 - QUARTILE 2

Cancer immunogenomics

Eduard Porta

Liang WW, Lu RJ, Jayasinghe RG, Foltz SM, **Porta-Pardo E,** Geffen Y, Wendl MC, Lazcano R, Kolodziejczak I, Song Y, Govindan A, Demicco EG, Li X, Li Y, Sethuraman S, Payne SH, Fenyö D, Rodriguez H, Wiznerowicz M, Shen H, Mani DR, Rodland KD, Lazar AJ, Robles AI, Ding L; Clinical Proteomic Tumor Analysis Consortium. Integrative multi-omic cancer profiling reveals DNA methylation patterns associated with therapeutic vulnerability and cell-of-origin

Cancer Cell. 2023 Sep 11:S1535-6108(23)00253-2. doi: 10.1016/j.ccell.2023.07.013. PMID: 37582362 - Citations: 1 [23/01/2024] IF: 50,3 - QUARTILE 1

Li Y, **Porta-Pardo E,** Tokheim C, Bailey MH, Yaron TM, Stathias V, Geffen Y, Imbach KJ, Cao S, Anand S, Akiyama Y, Liu W, Wyczalkowski MA, Song Y, Storrs EP, Wendl MC, Zhang W, Sibai M, Ruiz-Serra V, Liang WW, Terekhanova NV, Rodrigues FM, Clauser KR, Heiman DI, Zhang Q, Aguet F, Calinawan AP, Dhanasekaran SM, Birger C, Satpathy S, Zhou DC, Wang LB, Baral J, Johnson JL, Huntsman EM, Pugliese P, Colaprico A, Iavarone A, Chheda MG, Ricketts CJ, Fenyö D, Payne SH, Rodriguez H, Robles AI, Gillette MA, Kumar-Sinha C, Lazar AJ, Cantley LC, Getz G, Ding L; Clinical Proteomic Tumor Analysis Consortium. Pan-cancer proteogenomics connects oncogenic drivers to functional states Cell. 2023 Aug 31:S0092-8674(23)00780-8. doi: 10.1016/j.cell.2023.07.014. PMID: 37582357 - Citations: 4 [23/01/2024] IF: 64,5 - QUARTILE 1

Terekhanova NV, Karpova A, Liang WW, Strzalkowski A, Chen S, Li Y, Southard-Smith AN, Iglesia MD, Wendl MC, Jayasinghe RG, Liu J, Song Y, Cao S, Houston A, Liu X, Wyczalkowski MA, Lu RJ, Caravan W, Shinkle A, Naser Al Deen N, Herndon JM, Mudd J, Ma C, Sarkar H, Sato K, Ibrahim OM, Mo CK, Chasnoff SE, **Porta-Pardo E**, Held JM, Pachynski R, Schwarz JK, Gillanders WE, Kim AH, Vij R, DiPersio JF, Puram SV, Chheda MG, Fuh KC, DeNardo DG, Fields RC, Chen F, Raphael BJ, Ding L. Epigenetic regulation during cancer transitions across 11 tumour types Nature. 2023 Nov 1. doi: 10.1038/s41586-023-06682-5. Online ahead of print. PMID: 37914932 - Citations: 0 [10/01/2024] IF: 64,8 - QUARTILE 1

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Cancer metabolism
Lucas Pontel

Monge ME, Martinefski MR, Bollini M, **Pontel LB.** UHPLC-HRMS-Based Analysis of S-Hydroxymethyl-Glutathione, GSH, and GSSG in Human Cells Methods Mol Biol. 2023 Jun 1;2675:117-132. doi: 10.1007/978-1-0716-3247-5_10. PMID: 37258760

Pham VN, Bruemmer KJ, Toh JDW, Ge EJ, Tenney L, Ward CC, Dingler FA, Millington CL, **Garcia-Prieto CA**, Pulos- Holmes MC, Ingolia NT, **Pontel LB**, **Esteller M**, Patel KJ, Nomura DK, Chang CJ. Formaldehyde regulates S-adenosylmethionine biosynthesis and one-carbon metabolism. Science. 2023 Nov 3;382(6670):eabp9201. doi: 10.1126/science.abp9201. Epub 2023 Nov 3. PMID: 37917677 - Citations: 0 [10/01/2024] IF: 56,9 - QUARTILE 1

Chromatin biology laboratory
Alejandro Vaquero

Rasti G, Becker M, **Vazquez BN**, **Espinosa-Alcantud M, Fernández-Duran I, Gámez-García A, Ianni A, Gonzalez J**, Bosch-Presegué L, **Marazuela-Duque A, Guitart-Solanes A**, Segura-Bayona S, **Bech-Serra JJ,** Scher M, Serrano L, Shankavaram U, Erdjument-Bromage H, Tempst P, Reinberg D, Olivella M, Stracker TH, **de la Torre C, Vaquero A.**

SIRT1 regulates DNA damage signaling through the PP4 phosphatase complex Nucleic Acids Res. 2023 Jul 21;gkad504. doi: 10.1093/nar/gkad504. PMID: 37309898 - Citations: 2 [23/01/2024] IF: 14,9 - QUARTILE 1

González J, Bosch-Presegué L, Marazuela-Duque A, Guitart-Solanes A, Espinosa-Alcantud M, Fernandez AF, Brown JP, Ausió J, **Vazquez BN**, Singh PB, Fraga MF, **Vaquero A**. A complex interplay between H2A.Z and HP1 isoforms regulates pericentric heterochromatin. Front Cell Dev Biol. 2023 Nov 9;11:1293122. doi: 10.3389/fcell.2023.1293122. eCollection 2023. PMID: 38020886 - Citations: 0 [10/01/2024] IF: 5,5 - QUARTILE 1

Endothelial Pathobiology and Microenvironment
Mariona Graupera

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Sònia Guil

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Josep Maria Ribera

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Cellular immunotherapy and gene therapy

Javier Briones

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Elisabetta Mereu

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Chronic lymphocytic leukemia

Carolina Moreno

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Tomàs Navarro

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Gaël Roué

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Albert Oriol

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Nuclear architecture in leukemia

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Anna Bigas

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T cell lymphomas

Laura Mondragón

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Chromatin, Metabolism and Cell Fate

Marcus Buschbeck

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José Luis Sardina

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Josep Nomdedéu

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Jordi Sierra

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Myelodysplastic Syndromes

Francesc Solé

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Institutions involved

The Josep Carreras Institute strives to establish continuing cooperation agreements and aims to broaden its strategic alliances and agreements with the pharmaceutical industry and other private organizations. The following organizations are currently associated with our Institute:

Founding members

JOSEP CARRERAS Leukaemia Foundation

Generalitat de Catalunya Government of Catalonia

With the institutional collaboration of

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Public Funding

European Commission

erc European Research Council Established by the European Commission

L'Acadèmia Fundació Acadèmia de Ciències Mèdiques i de la Salut de Catalunya i de Balears

FECYT Fundación Española para la Ciencia y la Tecnología

Gobierno de España Ministerio de Educación, Formación Profesional y Deportes

Gobierno de España Ministerio de Ciencia, Innovación y Universidades

Health Canada Santé Canada

European Commission Horizon 2020 European Union funding for Research & Innovation

Spanish grants

Agència de Gestió d'Ajuts Universitaris i de Recerca AGAUR

asociación española contra el cáncer

ICREA

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SEHH Sociedad Española de Hematología y Hemoterapia

Unión Europea Fondo Europeo de Desarrollo Regional "Una manera de hacer Europa"

Special thanks to all the staff for your outstanding work.

Individually we are strong.
Together we are unstoppable!

Coordination
Helena Díaz and Ainoa Olmo

Text, data, and figures
Josep Carreras Leukaemia Research Institute

Photography
Josep Carreras Leukaemia Research Institute's archives

Design and Printing
Iglésies Associats

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Annual report

2023

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