

2024

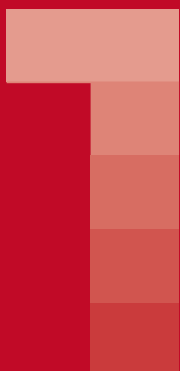
RESEARCH AND TEACHING REPORT BST



BANC DE SANG
I TEIXITS



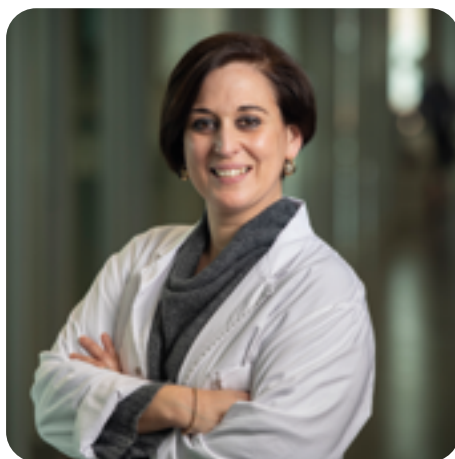
Generalitat
de Catalunya



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**Anna
Millán
Álvarez**
Chief Executive Officer

Foreword by the CEO

Research in the broad spectrum of SoHO

We present the Research Report 2024, the compilation of all the work associated with research that the Banc de Sang i Teixits (Blood and Tissue Bank, BST) has carried out in one year, guided by the roadmap set out in the Strategic Plan for Research and Innovation (2024-2027). For yet another year, we have made progress in consolidating our scientific trajectory, which is becoming an increasingly important part of our overall activity, in parallel with our healthcare work.

Our goal continues to be to grow and provide innovative knowledge to turn it into a future and hope for many patients. A mission that is inherent to us due to the fact that we are the Catalan public company responsible for the procurement, treatment, storage and supply of all substances of human origin (SoHO) in Catalonia.

We can say, in fact, that we do broad-spectrum research, because we lead and participate in projects in all the areas in which we are active. Our genesis is to be able to develop new generation therapies and drugs made from these genes, cells and tissues of human origin. All obtained thanks to a large community of altruistic donors: of blood, plasma, platelets, cord blood, bone marrow, milk and tissues, to whom we cannot fail to express our gratitude. In this sense, we also promote lines of research aimed at gaining a better understanding of donor groups, both to promote more efficient and sustained donation and to ensure their health and well-being.

Our research activity covers many areas: transfusion, hemotherapy and immunotherapy with the production of red blood cells in vitro, advanced therapies with the new CAR-Ts, new uses of the cord, tissue bioengineering products, epidemiological screening, or the research possibilities opened up by the new bioreactors, among many others. And with all this extensive work, we continue to grow in the number of publications, trials and projects promoted with research teams from all over the world. In turn, we contribute to increasing the knowledge of the scientific community through our service platforms and our facilities, such as the Biobank or the drug manufacturing rooms under good manufacturing practices.

We are a great team of interdisciplinary professionals who, together, have made it possible to achieve exceptional challenges, especially when we look back. And this is thanks to the commitment and perseverance of all the human effort that has built an organization full of opportunities to innovate and grow. If we continue in this way, we will achieve all the goals we set ourselves, and we will achieve what makes us most satisfied: contribute to improve the life and health of many citizens of our society.

Anna Millán Álvarez





Joaquim Delgadillo Duarte
Scientific Director

Foreword by the Scientific Director

It is a privilege to present the BST Research and Education Report for the year 2024, a year that marks the formal launch of our new Strategic Research Plan for 2024–2027, approved at the beginning of the year. This plan reaffirms and updates our institutional mission and vision, placing research and innovation at the heart of our efforts to respond to healthcare challenges.

Our mission now clearly states that we are an institution that drives, promotes, and supports research initiatives that provides solutions to healthcare needs, developing technologies and therapies in the field of blood and its derivatives, cells and tissues.

Our vision now reaffirms our wish to consolidate BST as a leading center in high-impact research and innovation in advanced therapies and substances of human origin.

The plan is the result of a participatory and consensus-driven process in 2023. It builds on the achievements of the previous strategic cycle, which closed with a strong track record of scientific output, growth in competitive funding, and the maturation of our research support platforms and services, such as the genomics and cellular laboratory platforms, the biobank and the advanced therapy medicinal products (ATMP) manufacturing facilities.

The new Strategic Research Plan is structured around four major R&D programmes that reflect both continuity and ambition:

1. Donation and biological safety of substances of human origin (SOHOs), addressing the safety, quality, and availability of donations.
2. Transfusion medicine and hemotherapy, advancing transfusion science and clinical applications.
3. Cell, tissue, and advanced therapies, focusing on innovative therapeutic approaches.
4. Organ transplantation, fostering research that supports transplant viability, compatibility, and long-term outcomes.

Looking forward, the implementation of this plan will be led by the new Scientific Director, who will guide the next phase of our journey with renewed energy and strategic vision.

As I close this chapter in my role as Scientific Director, I would like to express my deepest gratitude to the entire BST organization. Thank you for your trust, dedication, and commitment to our mission. It has been an honour to serve an institution committed to improving health through research and innovation.

Joaquim Delgadillo Duarte

2024 highlights

- Presentation at the ISTH 2024 Congress, "Update on the VWD Clinical and Molecular Profile Project in Spain: outcomes from the second recruitment phase", recipient of the the 2024 Eberhard F. Mammen Young Investigator Award, which recognises the best presentations made by a young researcher.
- Knowledge transfer as part of a collaboration with the National Institute of Hematology and Immunology in Cuba, through the training of Dr Dunia Castillo in molecular diagnostic protocols for next-generation sequencing (NGS).
- Development of a new methodology to detect sterility in umbilical cord blood samples.
- Publication of an article in *Frontiers in Pediatrics* on the use of mesenchymal cells in the treatment of haematopoietic progenitor complications.
- Publication of an article about successful BK virus-specific T cell therapy in a kidney transplant recipient with leukoencephalopathy in the American Journal of Transplantation
- Article published in *Blood Transfusion* on efficiency assessment of cord blood banking and compatibility with delayed cord clamping.
- Awarding of a FISP Miquel Rutllant research grant for GMP/scale-up and preclinical development of cord blood iPSC-derived CAR-NK cells.
- Presentation of the poster "iPSC-derived NK cells show lower immunogenicity than primary NK from cord blood or peripheral blood" at the ASCT-EBMT CAR-T-2025 meeting.
- Attainment of the first demonstration of CAR-19/20 expression and effectiveness in NK differentiated from docking platform gene-edited-iPSC.
- Publication in *HLA* of an article about the development of a cell donor registry for virus-specific T cells.
- Article published in *eBioMedicine* about a phase I clinical trial involving the implantation of a human engineered tissue graft on a damaged heart.

Fran Vidal



Anna Vilarrodona



- Award and launch of new research and innovation projects (La Marató de TV3, public-private partnership and pre-commercial public procurement).
- The EGALiTE project was successfully closed in 2024. It is a voluntary accreditation programme endorsed by the main SoHO European scientific societies whose Standards are designed to provide guidelines for institutions involved in activities pertaining to substances of human origin (SoHO) – or providing support services for such activities – and who wish to apply to the European/EGALiTE accreditation programme.
- Start of the MATRIX2 project to carry out a randomised pilot trial for transvaginal human acellular dermal matrix and sacrospinous fixation for anterior and apical prolapse treatment in patients with hiatal ballooning or levator ani injury, which will be led by Mutua de Terrassa.
- Participation in the ReaderSHIP project, contributing to the development of recommendations and guidance for the management of SoHO in hospitals, in alignment with the new EU Regulation on the quality and safety of Substances of Human Origin (SoHO) intended for human application.
- Publication in Blood Transfusion of an article that summarises our experience in relation to anti-CD36 isoimmunisation. This work has significantly contributed to the recognition of CD36 as a new blood group system (ISBT 045).
- Thanks to the SCD-ERYTROMATCH project funded by the “la Caixa” Foundation, predoctoral researcher Laura Cacho Cirera joined the UAB’s doctoral programme in Biotechnology, where she will carry out her doctoral thesis.
- The Immunohaematology Laboratory has begun a collaboration with the “Iron Metabolism: Regulation and Diseases” group led by Dr Mayka Sánchez from the International University of Catalonia (UIC), who has extensive experience in the field of iron metabolism.

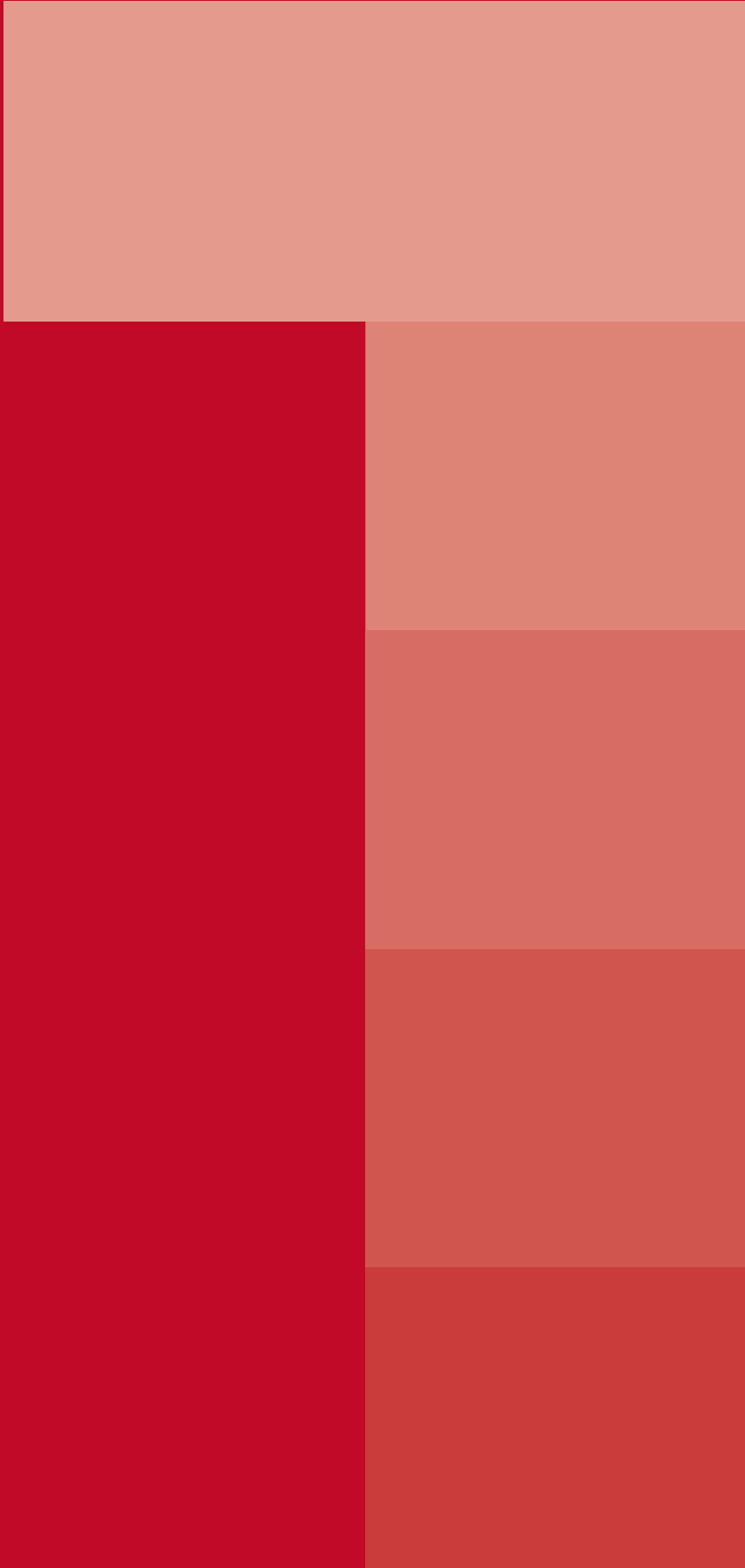
Belén Álvarez



Joaquim Vives



**Banc
de sang
i teixits**



Banc de Sang i Teixits

The Banc de Sang i Teixits (Blood and Tissue Bank, BST) is a public company of the Ministry of Health whose mission it is to guarantee the supply blood of sufficient quality for all citizens of Catalonia. The BST manages and administers the donation, transfusion, and analysis of blood and blood plasma. It also acts as a centre for obtaining and processing tissues and umbilical cords and develops other lines of action as a centre specialising in immunobiology, molecular analysis, cell therapy and regenerative medicine.

- It constitutes the backbone of the haemotherapeutic system in Catalonia.
- The BST's activity extends to all public and private centres in Catalonia and other areas of Spain, providing personal service to both donors and customers.
- Its aim is to function as a first-class centre for management, innovation and research in haemotherapy and tissues.

The BST participates in its own research projects and works in collaboration with all the Catalan Health Institute centres, many of the centres in the Public Hospital Network and Catalan universities. In addition, it works to promote strategic alliances with centres, researchers and industry.

1.1. Governing Bodies

The Banc de Sang i Teixits' governing bodies are the Board of Directors and its committees.

1.1.1. Board of Directors

Chair

Andreu Mas-Colell

Vice Chair

Ignasi Carrasco Miserachs

Secretary

Josep Inglés Lodos

Members

Irene Garcia Cadenas,
Marc Soler Fàbregas,
Marta Chandre Jofré,
Judit Vall Castelló,
Antoni Castells Garangou
and Joan Comella Carnicé

1.2.

Executive and Management Bodies

1.2.1. Executive Committee

CEO

Anna Millán Álvarez

Director of Human Resources

Imma Garcia Pursals

Director of Communication and Marketing

Pilar Córdoba Tejero

Corporate Director and Head of Information Technologies

Antoni Masi Roig

Healthcare Director

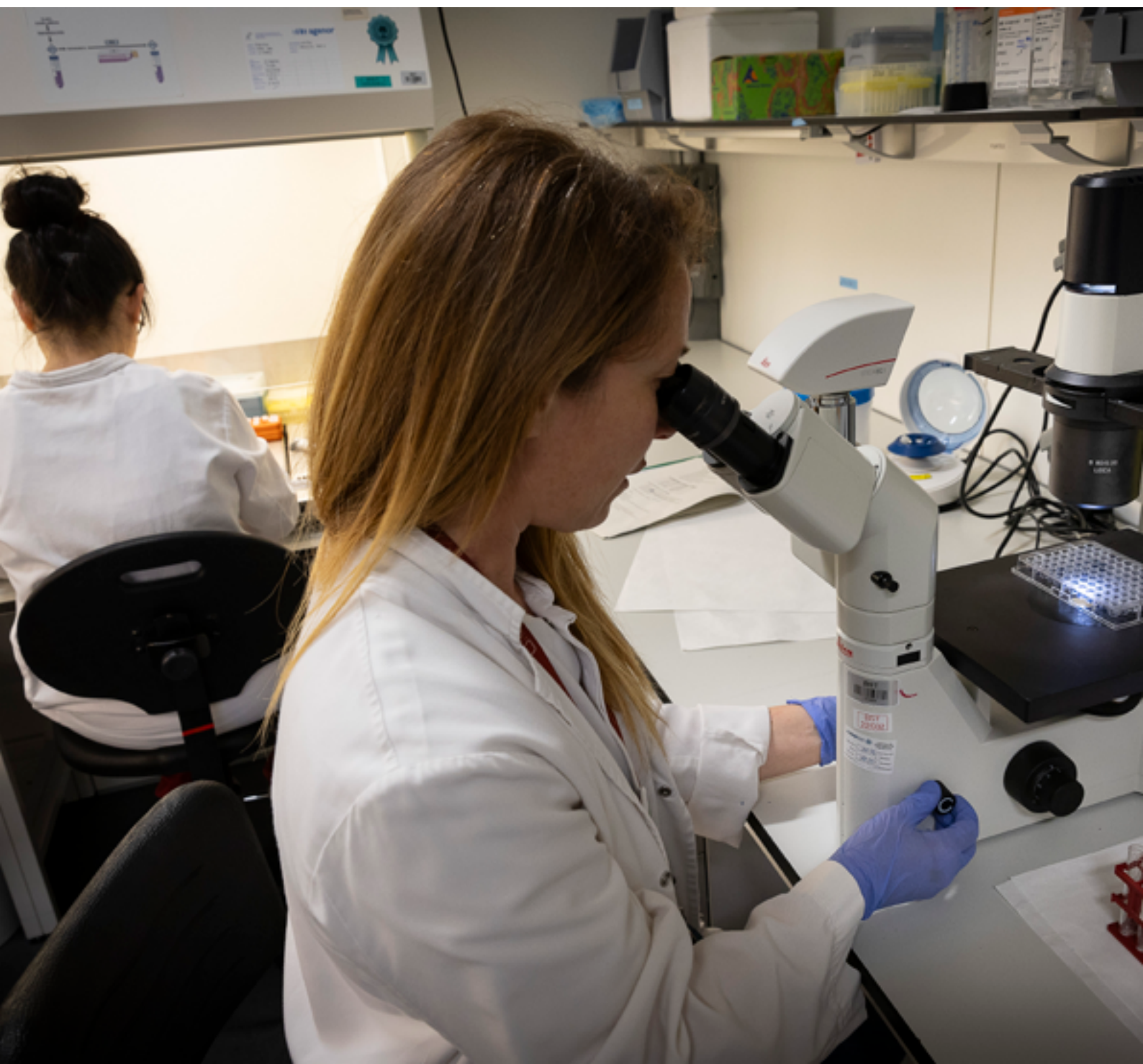
Joan Ramon Grifols Ronda

Strategy and Innovation Director:

Núria Gavalda Batalla

Strategic Planning and Advanced Therapies Director

Joaquim Delgadillo Duarte



1.3. Advisory Bodies

1.3.1. Internal Scientific Committee

The Internal Scientific Committee is the advisory body in charge of ensuring that all tasks in the organisation involving the promotion and development of RDI are carried out.

The tasks performed by this committee include:

- Reviewing RDI policy and ensuring that it be disseminated and adopted.
- Coordinating the deployment of the Strategic Research Plan (SRP) and evaluating its degree of success.
- Ensuring that the annual RDI objectives are met.
- Overseeing activities associated with the technology observatory (surveillance, foresight, analysis, etc.).
- Periodically reviewing scientific production, economic aspects and research staff.
- As the unit responsible for the programmes, participating in research activities and evaluating projects' progress (anticipating deviations and problems).
- Reviewing the systematics of the process for continuous improvement.

Composition

Alba Bosch
Cristina Castells Sala
Joaquim Delgadillo Duarte
Jesús Fernández Sojo

Núria Gavalda
Raquel Gil Muro
Joan Ramon Grífols Ronda
Núria Nogués Gálvez

Sílvia Sauleda Oliveras
Elisabet Tahull Navarro
Francisco Vidal Perez
Joaquim Vives Armengol

reviewing R&D&I
coordinating Strategic
Research Plan
ensuring annual R&D&I
Overseeing activities
associated technology watch
reviews scientific
production
evaluating projects'
progress
continuous improvement

1.3.2. External Scientific Committee

The tasks to be performed by this committee include the following:

- Annually evaluating the RDI activity carried out at the BST.
- Giving opinions and making suggestions on the adequacy and follow-up of the SRP.
- Making recommendations on research lines and programmes (promoting, auditing, redirecting, etc.).
- Giving guidance on how to increase external resources for research and on possible alliances to be established.
- Acting as an external technology observatory.

Composition

**Prof. Alejandro Madrigal,
MD, PhD (president).**

Scientific Director of the
Anthony Nolan Research
Institute, London (UK)

**Prof. Catherine Bollard,
MD, MBChB**

Director of the Center for
Cancer and Immunology
Research at the Children's
National Research Institute,
Washington DC (USA)

Prof. Antony Atala, MD

Director of the Wake Forest
Institute for Regenerative
Medicine, North Carolina
(USA)

**Prof. Masja de Haas,
MD, PhD**

Senior researcher at
the Dept of Clinical
Transfusion Research,
Sanquin, and at the Dept.
of Immunohaematology
and Blood Transfusion,
Leiden University Medical
Centre (LUMC), Leiden
(Netherlands)

Annually evaluating
R&D&I in the BST
opinions suggestions
adequacy follow-up
recommendations
programmes research
promoting auditing redirecting
guidance external
resources for research
external technology observatory

1.4.

Location

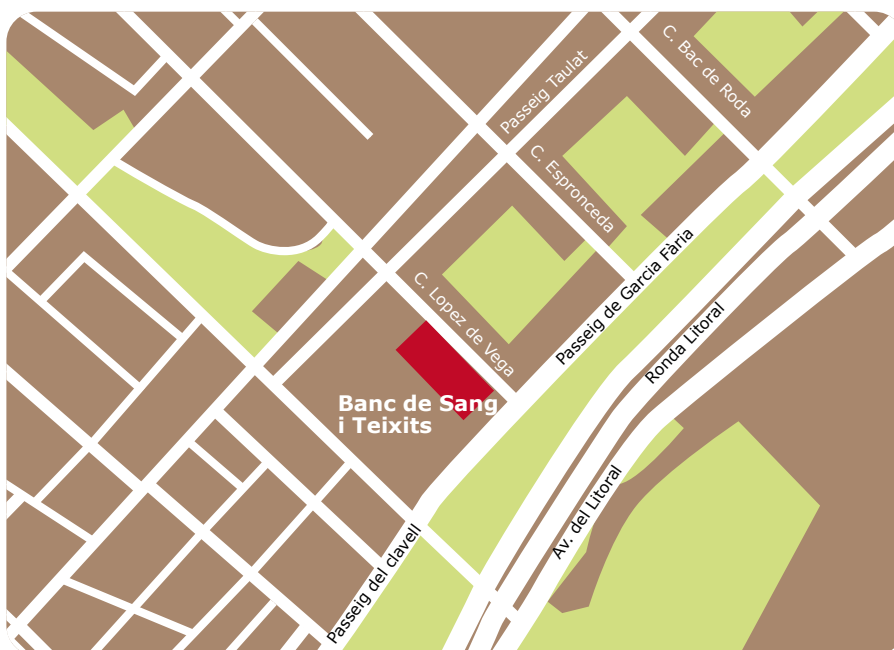
Pg. del Taulat 106

The corporate headquarters of the BST is located at the corner of Passeig Taulat and Carrer de Lope de Vega, in the 22@ technology district of Barcelona. It is from this headquarters that the various lines of activity and many of the organisation's professionals are centralised. The BST also has offices in the main hospitals in Catalonia.

800
professionals



technological
district
22@
in the Barcelona



1.5.

Summary of research activity

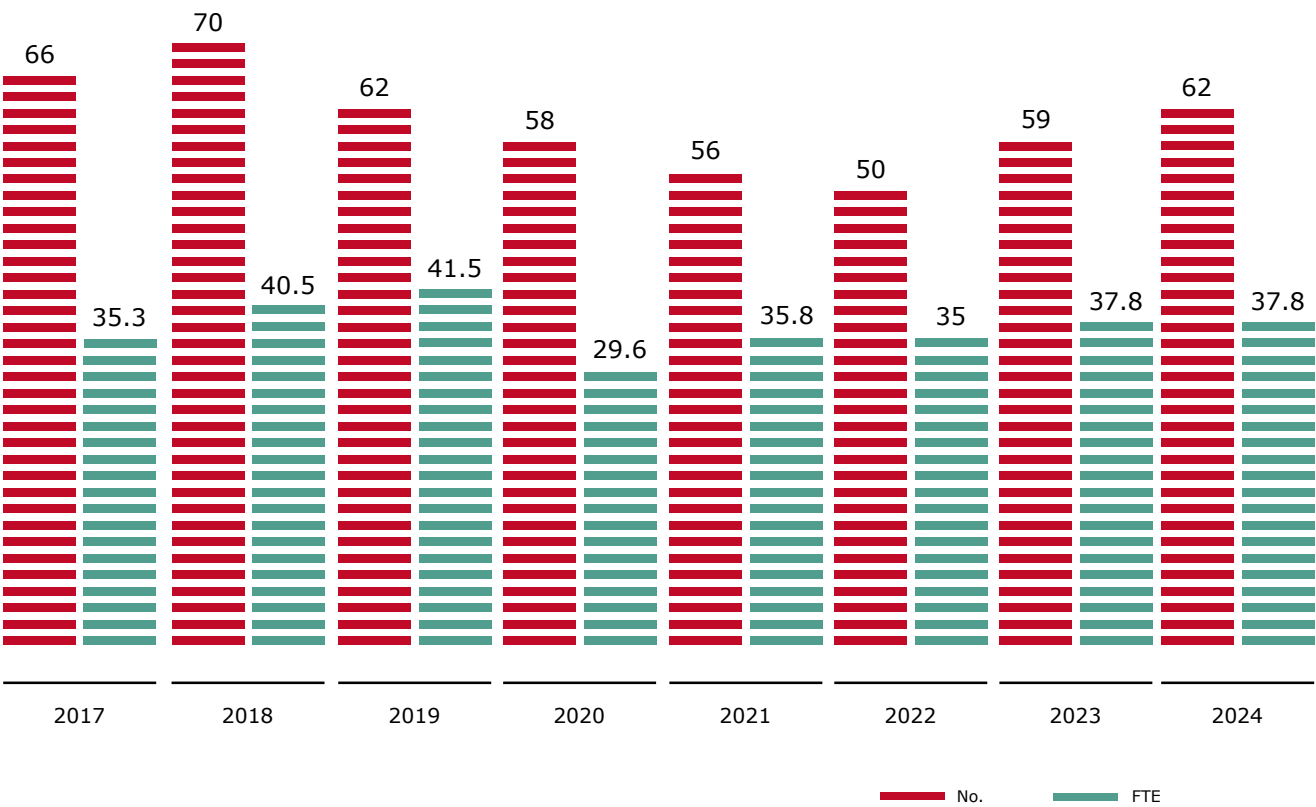
1.5.1. Summary of research activity

Research and technical staff 2024

	No.	FTE	No. of men	FTE of men	No. of women	FTE of women
Principal investigators	8	5.5	3	2.1	5	3.4
Senior researchers	28	17.5	7	4.6	21	12.9
Researchers	17	8.6	8	3.7	9	4.9
Support staff	9	6.2	0	0.0	9	6.2
TOTAL	62	37.77	18	10.4	44	27.36

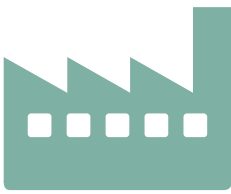
* FTE: full-time employees

Research staff since 2017



1.5.2.
Economic data

Research funding 2024



92,092€

Agreements
with industry



2,100,236€

Own funds*



642,617€

Public agencies



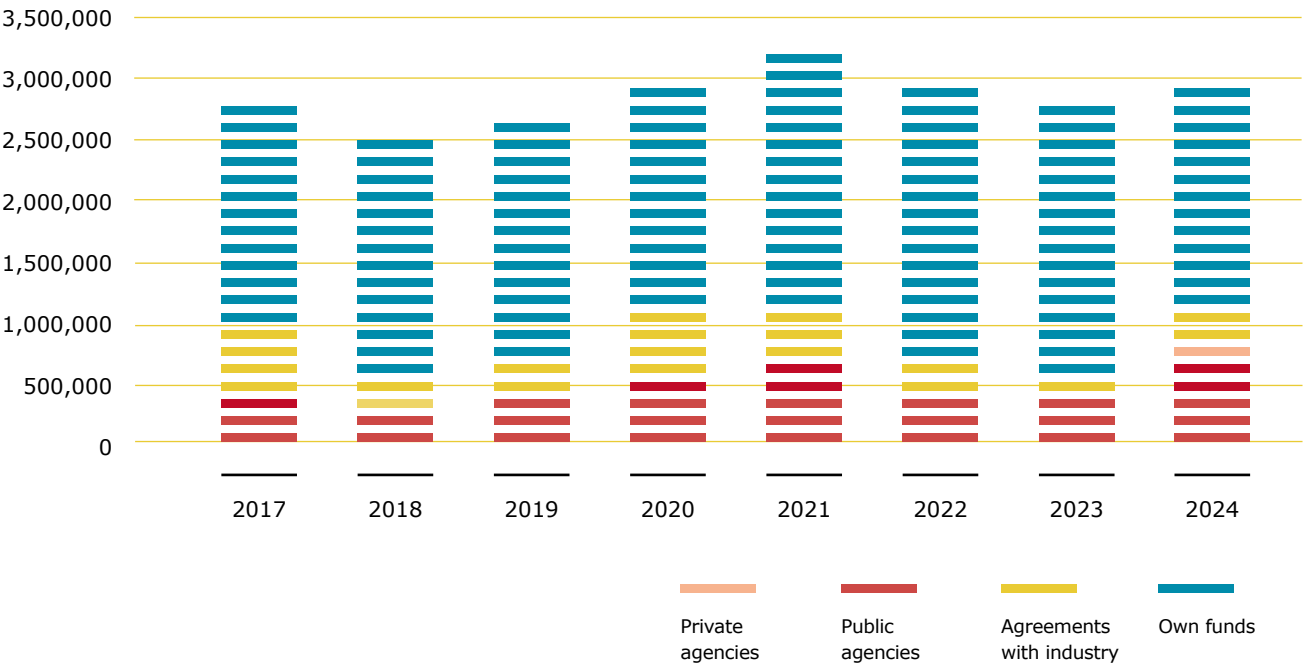
52,539€

Private agencies

Total 2,887,484€

* Includes expenses for full-time
or part-time staff and internal
research funding

Evolution of Research funding



1.5.3. Organisation of research at the BST

The Strategic RDI Plan 2017-2020 set up five research programmes

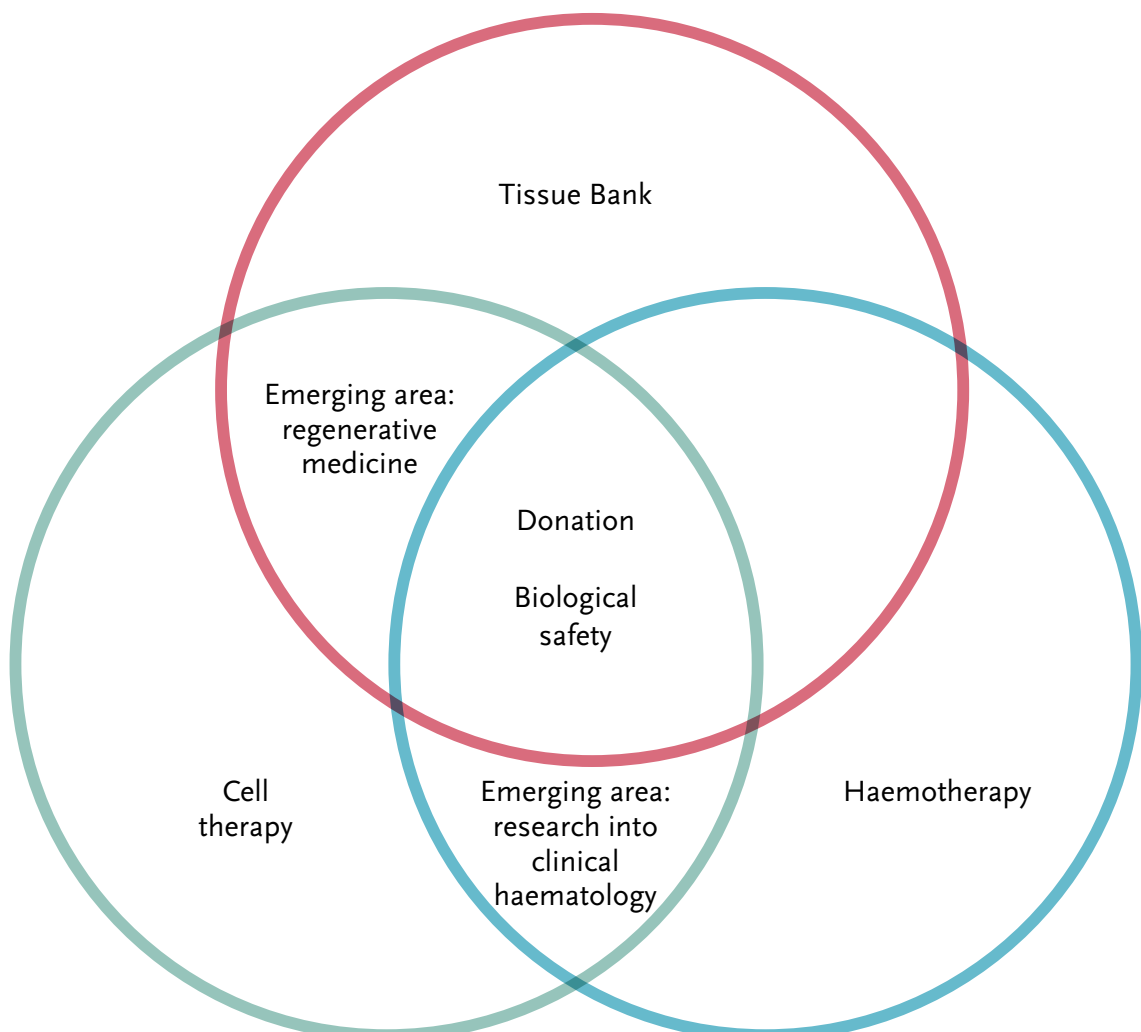
R&D&I 2017-2020 5 Research Programmes

Three core programmes:

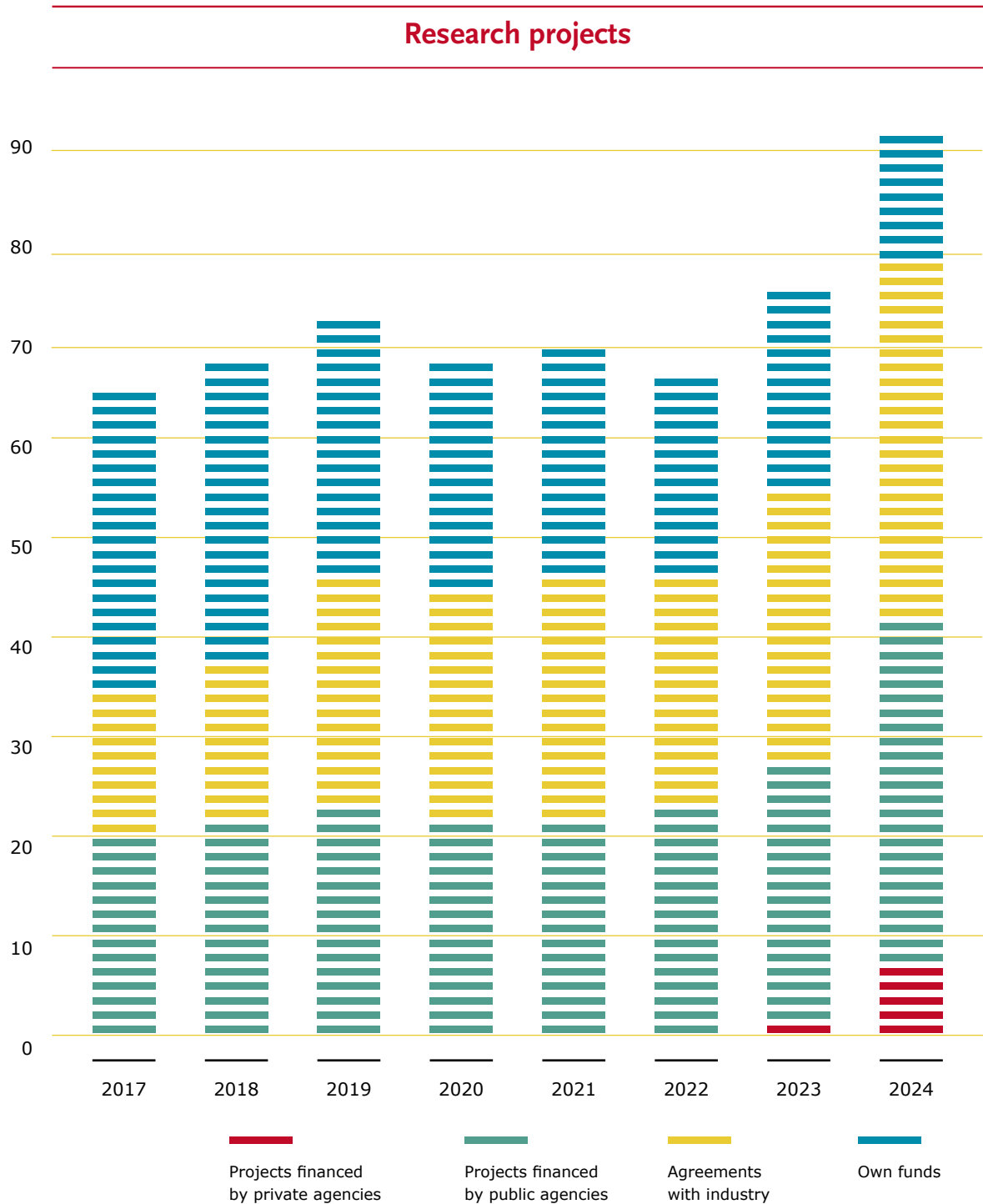
- **Haemotherapy:** immunohematology, transfusion, molecular diagnosis, process development
- **Tissue bank:** development of products and processes of the tissue bank, regenerative medicine
- **Cell therapy:** transplant immunobiology/immunotherapy, regenerative medicine

Two transversal programmes:

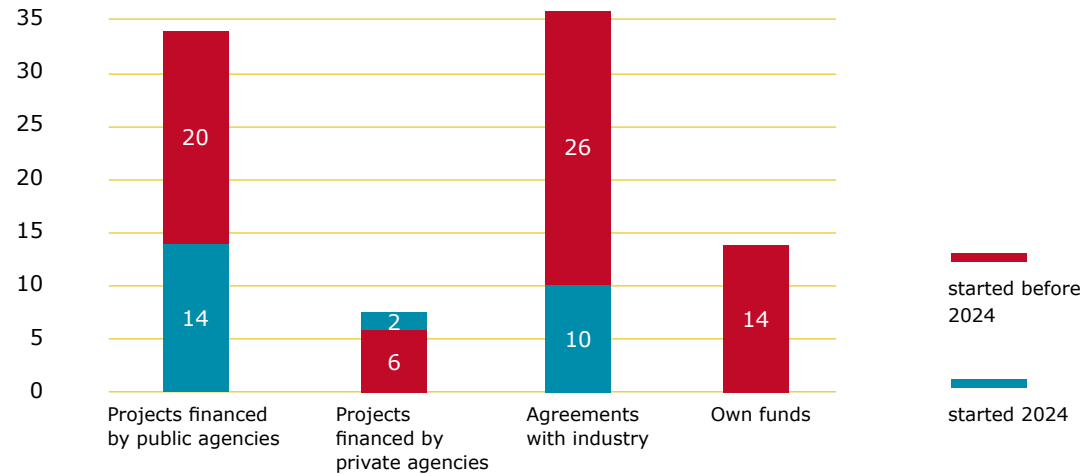
- **Biological safety:** emerging pathogens, epidemiological studies, harmonisation between products
- **Donation of blood, cells and tissues:** study of donation behaviours, donation ethics, donation promotion, protection, well-being and comfort of the donor



1.5.4.
Research
projects



2024



Active projects during 2024

	BST PRINCIPAL INVESTIGATOR	COLLABORATION
PUBLIC AGENCIES		
Carlos III Institute of Health	5	7
Center for Technological Development and Innovation		1
European Commission	2	2
Clínic Foundation for Biomedical Research		1
Ministry of Health and Consumer Affairs of the Andalusian Regional Government		1
Sant Pau Research Institute		2
Spanish Investigation Agency	6	4
Vall d'Hebron Institute of Oncology		3
PRIVATE AGENCIES		
"La Caixa" Foundation	1	
La Marató de TV3 Foundation		2
Mutua Madrileña Foundation	1	
Sant Joan de Déu Research Found.		1
Wilson Wolf Manufacturing LLC	3	
AGREEMENTS WITH INDUSTRY		
Adaptimmune Therapeutics PLC.		3
ALX Oncology Inc.		1
Atara Biotherapeutics Inc.		2
Autolus Limited		4
Best Collaborative		1
BioNTech Manufacturing GmbH		2
Celgene Corporation		3
Cellnex Telecom S.A.	1	
Cynata Therapeutics Ltd.		1
Gilead Sciences Inc.		1
Johnson & Johnson Innovative Medicine		4
Kite Pharma Inc.		2
Instituto Grifols S.A.	1	
Iovance Biotherapeutics, Inc.		2
Medac GmbH		2
Miltenyi Biomedicine GmbH		1
Novartis Pharma AG		4
T-knife GmbH		1
OWN FUNDS		14
TOTAL		92

1.5.5.
Doctoral theses

This was the thesis read by a BST researcher

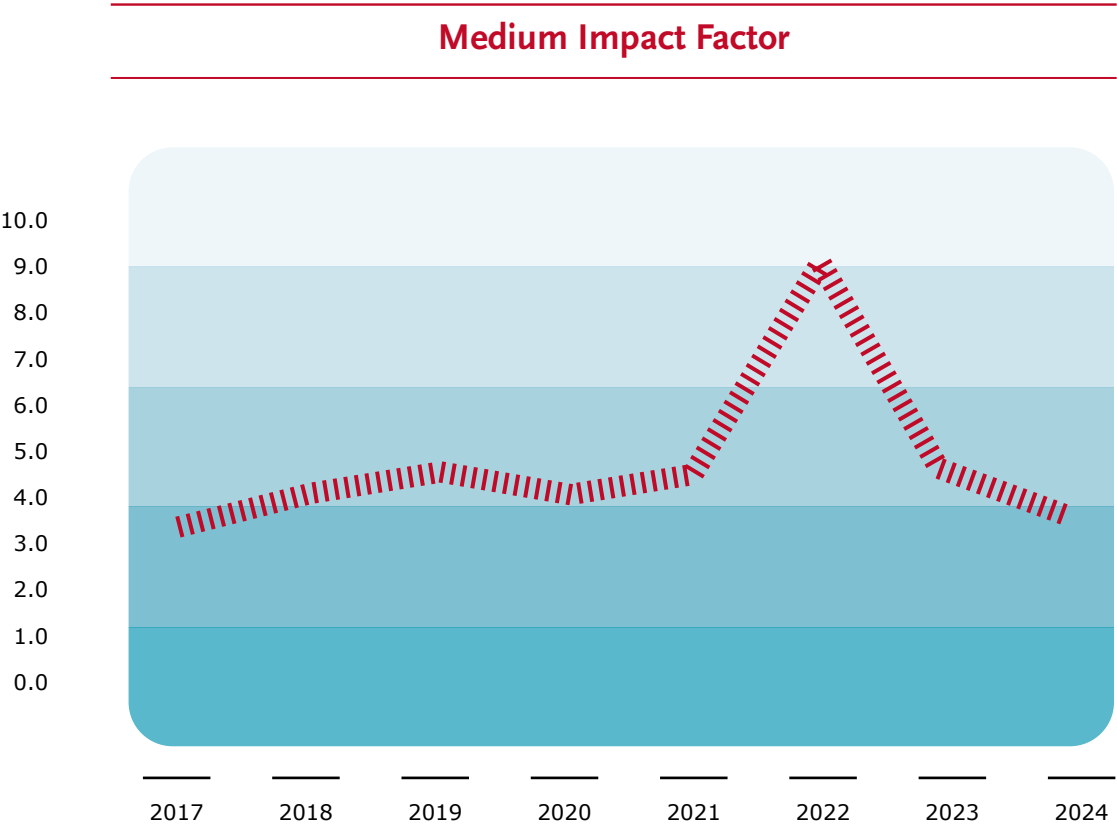
Theses		
PHD STUDENT	THESIS TITLE	DIRECTORS
Ana Gabriela Lara de León	Development of Epstein-Barr Virus-Specific T cells expressing anti-CD19 Chimeric Antigen Receptor for cancer immunotherapy	Manel Juan Otero, Francesc Rudilla Salvador

1.5.6.
Publications

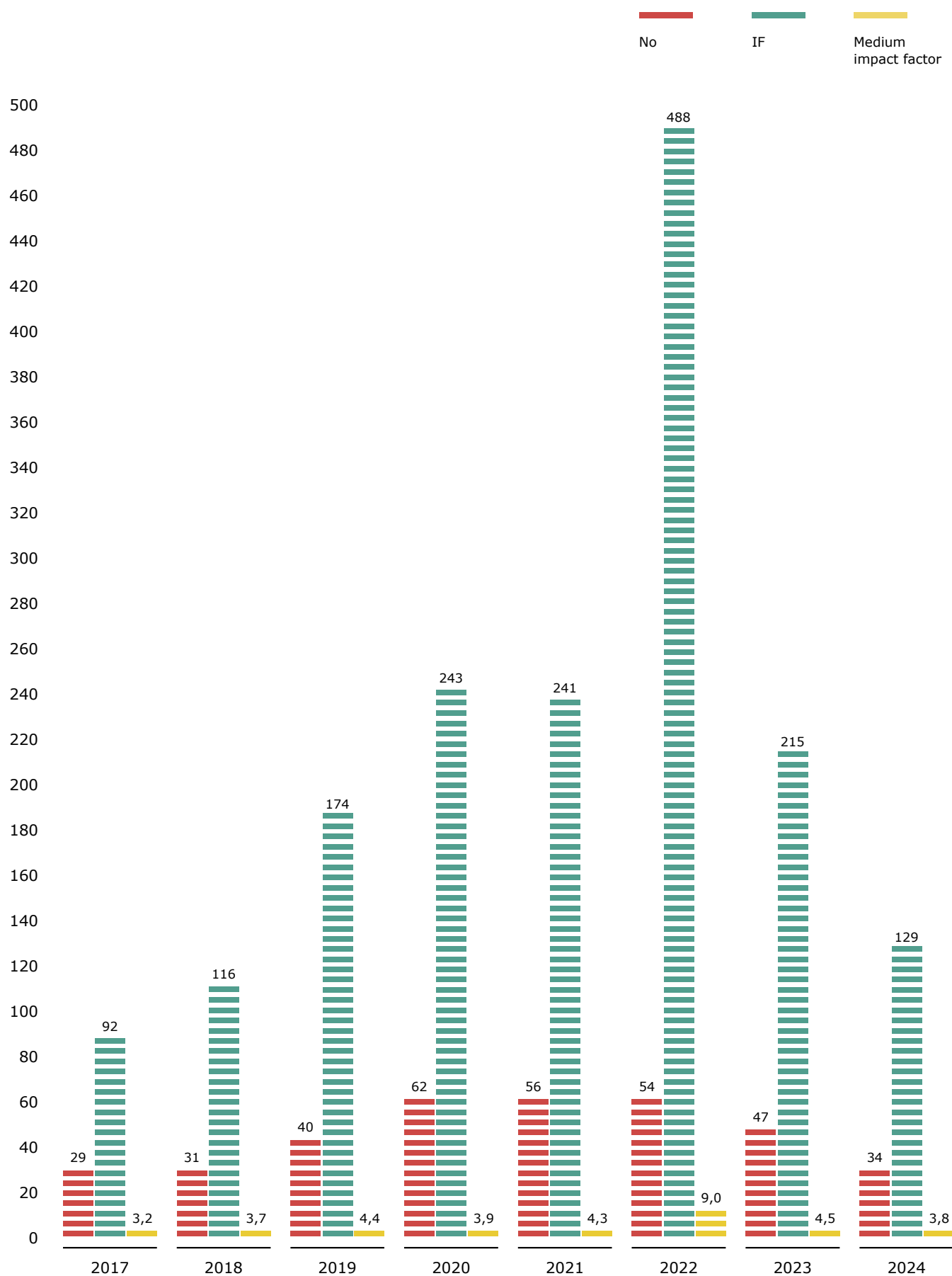
There were 34 publications by BST researchers in scientific journals in 2024, with an impact factor of 129.3. The average impact factor was 3.8. A 38% of the articles were published in first quartile journals.

The 2023 Journal Citation Reports (JCR) were used to calculate the 2024 impact factor. Original articles, reviews, and editorials were included in the calculation.

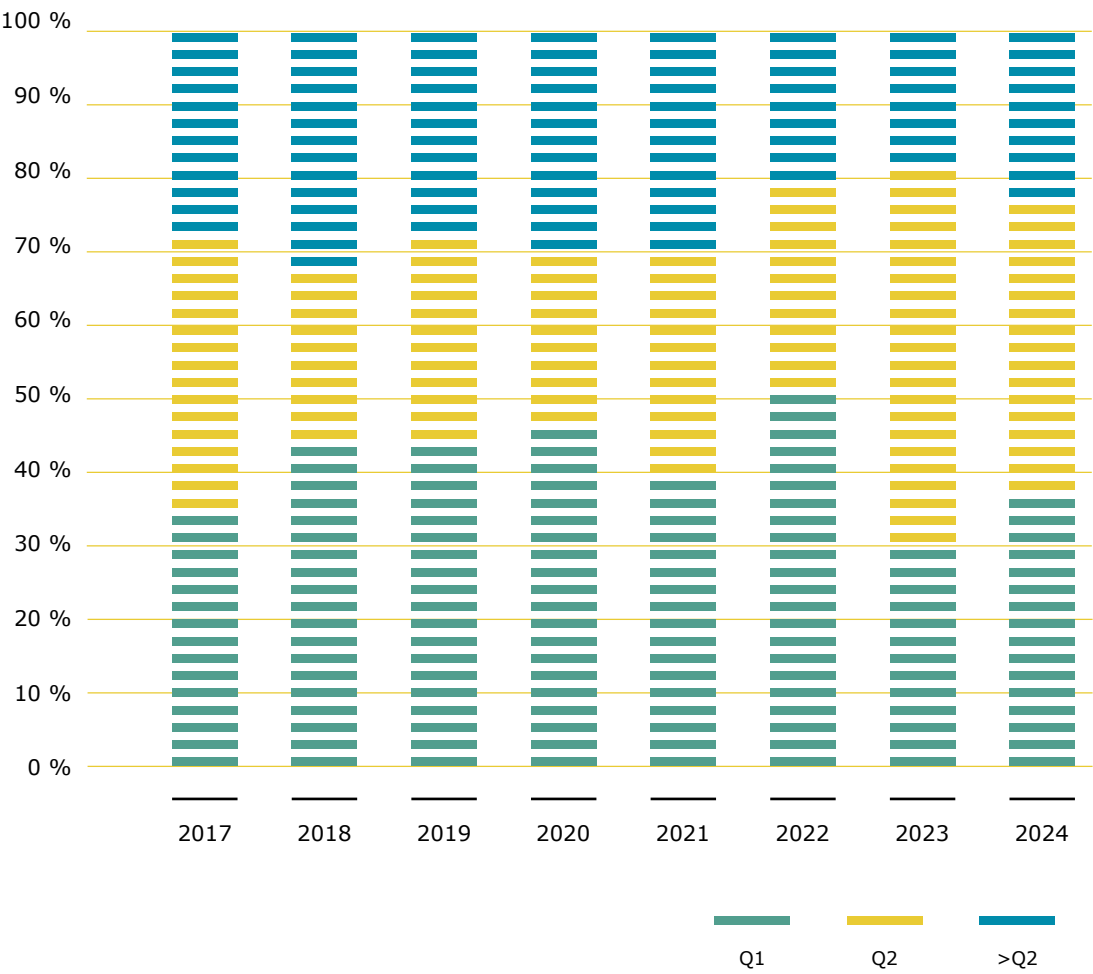
Evolution of the BST's scientific production



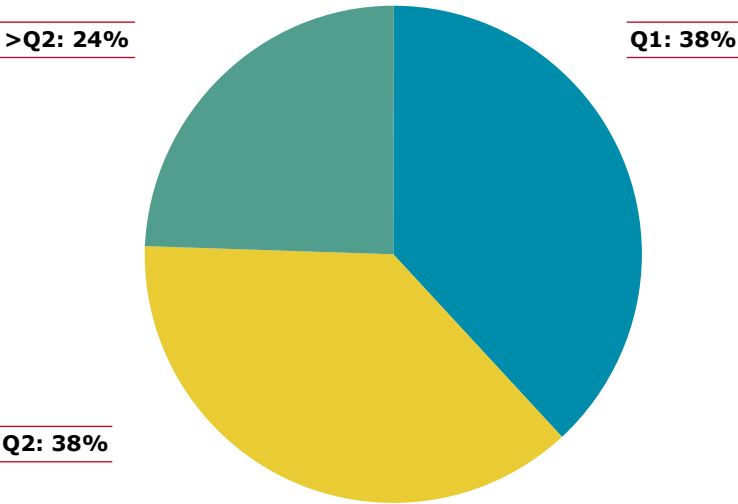
BST scientific output since 2017



Classification of publications



2024 BST publications by quartiles



1.5.7. Patents and protection of industrial and intellectual property

The BST has one patent granted in the United States, and two granted by the European Patent Office and validated in several European countries.

1.6. Innovation

- The sequencing of HLA and other genes of interest has been successfully validated using third-generation sequencing (TGS). This technology is as robust as the methods used to date, but faster and less expensive, representing a significant improvement in efficiency, sustainability and response time.
- Implementation of universal screening for West Nile virus (WNV) RNA and Dengue, Zika and Chikungunya viruses concomitantly with the ArboPlex reagent in blood, cell and tissue donations.
- Identification of the first cases of Usutu virus in blood donors from Catalonia through WNV screening with the ArboPlex reagent.
- Evaluation of alternative preservation methods to cryopreservation for cardiovascular tissues in the context of decellularisation.
- Definition of a protocol to successfully decellularise large-calibre nerves.
- Development, in close collaboration with the University of Girona (UdG) Graphics and Imaging Laboratory, of a new system to improve the allograft-recipient matching process (BeST-Graft Viewer), demonstrating that the allograft-recipient matching procedure can be optimised using software tools with functionalities to visualise, interact and take measurements.
- Implementation of a new procedure for cartilage preservation at 33°C which extends the expiration time from 3 to 8 weeks, thus facilitating the logistics of allograft allocation and surgery planning and allowing the tissue bank to increase the number of obtained grafts.
- Development and optimisation of the TGS technique for sequencing the entire genome with specific enrichment of the F8 and F9 genes. This technology has allowed the precise identification of structural variants in patients with haemophilia A and B, with more than 10 cases resolved, representing a significant advance in highly complex molecular diagnosis.
- We have acquired the MiniBio500 bioreactor together with the BioSep cell perfusion system from the manufacturer Geringe Applikon, through the SCD-ERYTROMATCH project of the "la Caixa" Foundation. This BioSep cell retention system is the first installed in Spain and should allow for high separation efficiency, avoiding cell damage and eliminating cellular waste automatically, thanks to its high-frequency resonant ultrasonic wave system.

BST research activity

2.1. Haemotherapy programme

Research in the haemotherapy programme aims to foster knowledge about the practice of transfusion medicine and related technologies.

Researchers in this programme are currently studying the basic biology and clinical implications of a wide range of problems regarding transfusions, immune responses to transfused blood, and underlying mechanisms, as well as practices related to the processing, storage and safety of blood.

The programme also focuses on research and development of diagnostic and decision-making techniques and processes that make transfusions safer, more effective and more efficient.

This programme not only has the support of its core members but also the simultaneous involvement of the area's principal laboratories and territorial centres.



Director

Núria Nogués Gálvez

Support Staff

Natàlia Comes Fernandez
Noemí Gonzalez Leon
Carina Lera Asensio
Lorena Ramírez Orihuela

Researchers

Perla Bandini
Nina Borràs Agustí
Laia Closa Gil
Irene Corrales Insa
Iris Garcia Martinez
Cecilia Gonzalez
Santesteban

Jordi Gual Obrador
María José Herrero Mata
Carlos Hobeich Naya
Sergio Huertas Torres
Laura Martín Fernández
Laia Miquel Serra
Francisco Vidal Pérez

Núria Nogués Gálvez

Research projects

Principal investigator:
Núria Nogués Gálvez

Lab-grown red cells for the transfusion management of vaso-occlusive crisis in sickle cell patients
Funding organisation: "La Caixa" Foundation
File: HR23-00367
Duration: 2023 – 2026

Principal investigator:
Núria Nogués Gálvez

LAB-REDCELL: Lab-grown red cells from immortalized erythroid cell lines as an alternative source of red cells with rare phenotypes for diagnostic and therapeutic applications
Funding organisation: Spanish Investigation Agency
File: PID2022-141849OB-I00
Duration: 2023 – 2027

Principal investigator:
Irene Corrales

Investigation of the unresolved molecular etiology of inherited bleeding disorders using advanced molecular tools and data integration systems.
Funding organisation: Carlos III Institute of Health
File: PI23/01672
Duration: 2024 – 2026

Principal investigator:
Francisco Vidal Pérez

RELECOV 2.0 Consolidation of WGS and RT-PCR activities for SARS-CoV-2 in Spain towards sustainable use and integration of enhanced infrastructure and processes in the RELECOV network
Funding organisation: European Commission
File: 101113109
Duration: 2023 – 2025

Principal investigator:
M^a José Herrero Mata

Advancing in the implementation of Third Generation Sequencing technology within the field of Immunogenetics and deployment in other areas of the BST
Funding organisation: BST
File: I.2023.029
Duration: 2023 – 2026

Principal investigator:
Laia Miquel Serra

Lab-grown red cells from immortalized erythroid precursor cell lines as an alternative source of red cells with infrequent or rare phenotypes
Funding organisation: BST
File: I.2023.024
Duration: 2023 – 2026

Principal investigator:
Iris Garcia Martínez

Development of a functional model of the flow of the Blood and Tissue Bank stock based on artificial intelligence to optimize the planning of donation campaigns and the distribution of hemocomponents
Funding organisation: BST
File: I.2023.026
Duration: 2023 – 2026

Principal investigator:
Nina Borràs Agustí

Resolving the genetic basis of complex diagnostic inherited bleeding disorders through the application of advanced molecular tools
Funding organisation: BST
File: I.2023.030
Duration: 2023 – 2026

Principal investigator:
Antoni Masi Roig

Study of the life cycle of the blood and plasma donor: segmentation into stages, their transitions and design of targeted communication actions
Funding organisation: BST
File: I.2023.032
Duration: 2023 – 2025

Principal investigator:
Vanessa Pleguezuelos Hernández

Obtaining sterilized donated breast milk applying the emerging technology of ultra-high pressure homogenization (LMD-UHPH)
Funding organisation: BST
File: I.2023.033
Duration: 2023 – 2025

Collaboration projects

Principal investigator:
Anna Bigas Salvans (IMIM), Núria Nogués Gálvez (BST)

HEMO-GAS: Recreating the embryonic niche for hematopoietic stem cell production and derivatives in human gastruloids
Funding organisation: Spanish Investigation Agency
File: PLEC2021-007518
Duration: 2021 - 2024

Principal investigator:
Cristina Santos Vivas (Hospital Universitari de Bellvitge), BST Bellvitge as subinvestigators

A Phase 2, Randomized, Open-Label Study Evaluating the Safety and Efficacy of Magrolimab in Combination With Bevacizumab and FOLFIRI Versus Bevacizumab and FOLFIRI in Previously Treated Advanced Inoperable Metastatic Colorectal Cancer
Funding organisation: Gilead Sciences, Inc.
File: 2022-500177-13
Duration: 2023 - 2024

Principal investigator:
Cinta Hierro Carbó (Hospital Germans Trias i Pujol), BST Badalona as subinvestigators

A phase 2/3 study of ALX148 in patients with advanced HER2-overexpressing gastric/gastroesophageal junction adenocarcinoma (ASPEN-06)
Funding organisation: Alx Oncology, Inc.
File: 2021-001008-14
Duration: 2023 - 2024

Principal investigator:
José Martínez González (Consejo Superior de Investigaciones Científicas), Francisco Vidal Pérez (BST)

RESolution of inflammation after myocardial injury through Targeting novel regulaTORY molecuLEs (RESTORE)
Funding organisation: La Marató de TV3 Foundation
File: 216/C/2023
Duration: 2024 - 2026

Principal investigator:
Maria Francesca Cortese (VHIR), Francesc Rudilla Salvador (BST)

Search for biomarkers (immunological and/or cellular) predictive of virological response or infection control in chronic hepatitis D
Funding organisation: Carlos III Institute of Health
File: PI23/01065
Duration: 2024 - 2026

Principal investigator:
M^a Manuela Hernández Herrero (UAB) Vanessa Pleguezuelos Hernández (BST)

Alternative emerging technologies to holder pasteurization for Human Milk Banks: Ultra High Pressure Homogenization and short-wave ultraviolet radiation UV-C
Funding organisation: Spanish Investigation Agency
File: PID2023-149923OB-I00
Duration: 2024 - 2026

Principal investigator:
María Belén Pastor Villaescusa, María Mercedes Gil Campos (Biomedical Research Foundation of Córdoba) Vanessa Pleguezuelos Hernández (BST)

Comparison of two technological treatments for the preservation of the bioactive properties of donated human milk (NeoMilk)
Funding organisation: Ministry of Health and Consumer Affairs of the Andalusian Regional Government
File: PI-0098-2024
Duration: 2024 - 2027

Principal investigator:
Sertac Arslanoglu (European Milk Bank Association) Vanessa Pleguezuelos Hernández (BST)

IMAGINE, Implementation of human Milk hArmonised Guidelines for Infant Nutrition in Europe
Funding organisation: European Commission
File: EU4H-2023-PJ-08
Duration: 2024 - 2026

Principal investigator:
Claudia Carella (Insituto Superior di Sanita), Anna Millán Álvarez (BST)

GAPP-PRO: Piloting GAPP model approach for assessing and authorizing novel substance of human origin preparation PROCesses
Funding organisation: European Commission
File: 101128035
Duration: 2024 - 2027

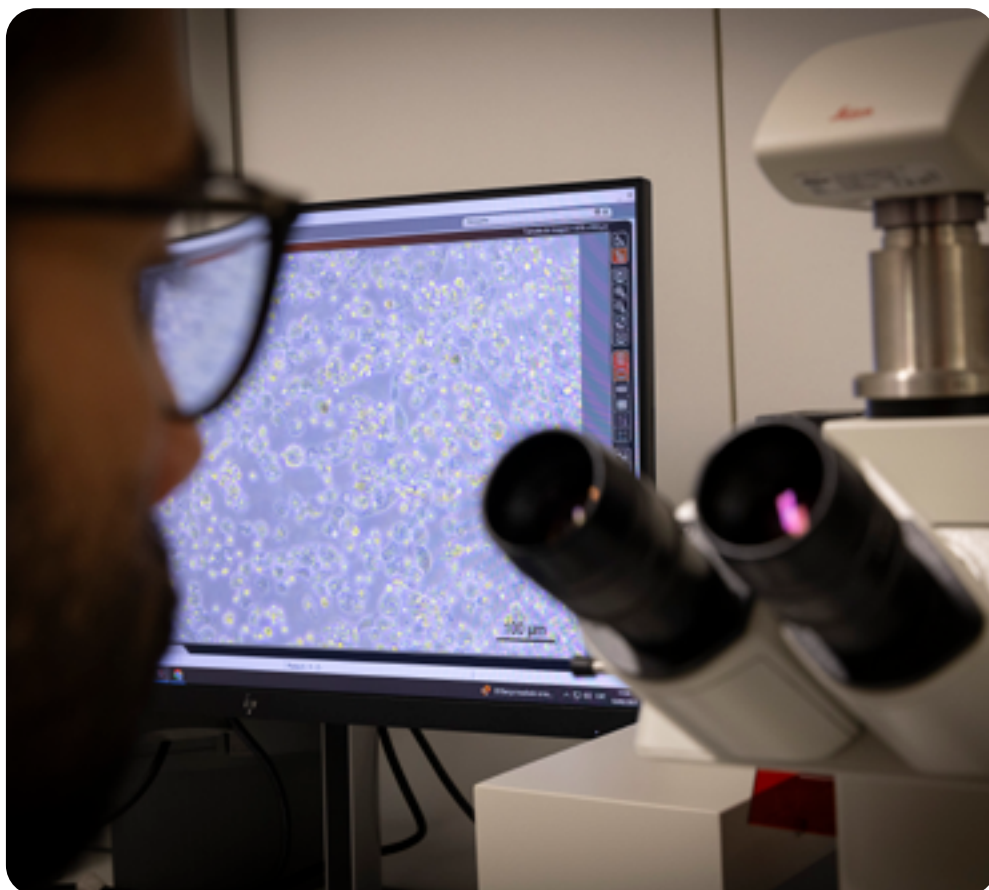
Principal investigator:
Tamir Kanias (Vitalant Research Institute), Eva Alonso Nogués (BST)

Uninvited RBC companions - What else is in a leukocyte-reduced RBC bag?
Funding organisation: Best Collaborative
File: Best Study # 182
Duration: 2024 - 2025

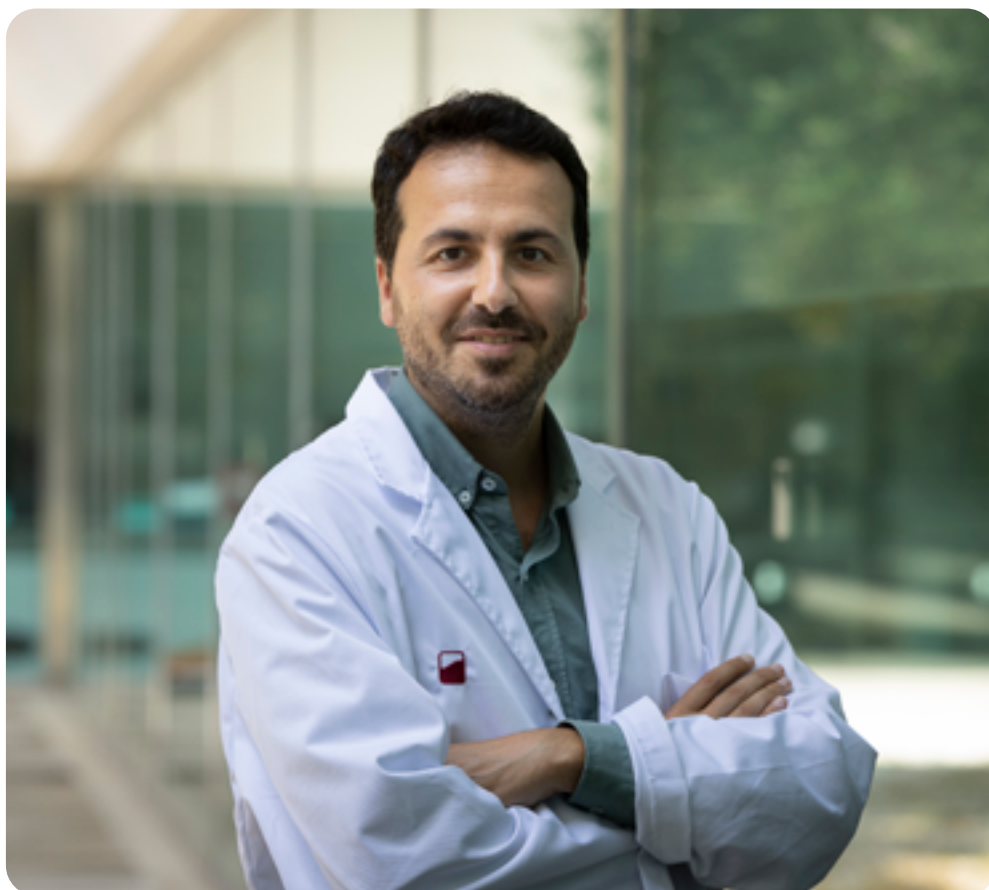
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- Muñoz NG, Sánchez SO, Grifols JR.** Types of plasma exchange solution in the new scenario of thrombotic thrombocytopenic purpura treatment. *BLOOD TRANSFUS* 2024 May;22(3):275-276. doi: 10.2450/BloodTransfus.744. Epub 2024 Mar 4. PMID: 38557325; PMCID: PMC11073625. IF 2.4. Q2.
- Muñoz NG,** Ortega S, Solanich X, Cid J, Díaz M, Moreno AB, **Ancochea Á,** **Santos M,** Hernández I, **Sanchez JM,** Luaña A, **García J,** Escoda L, **Medina L, Ferrer GJ,** López J, Céspedes R, Díaz JA, Pons V, Valcárcel D, Grifols JR. Diagnosis and clinical management of thrombotic thrombocytopenic purpura (TTP): a consensus statement from the TTP Catalan group. *BLOOD TRANSFUS*. 2024 Mar;22(2):176-184. doi: 10.2450/BloodTransfus.522. Epub 2023 Sep 4. PMID: 37677097; PMCID: PMC10920070. IF 2.4. Q2.
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- Otero A, **Rosselló-Palmer E,** Codina S, Lloberas N, Martínez Y, Santos N, Peñafiel J, Rigo-Bonnin R, Vidal A, Peris J, Videla S, Hueso M. Exploring Apixaban Pharmacokinetics, Pharmacodynamics, and Safety in Hemodiafiltration Patients. *KIDNEY INT REP*. 2024 Jun 27;9(9):2798-2802. doi: 10.1016/j.ekir.2024.06.030. PMID: 39291199; PMCID: PMC11403021. IF 5.7. Q1.
- Calleja JL, Delgado Sánchez O, Fuentes Pradera MÁ, Llop E, López Zárraga F, Lozano ML, **Parra R,** Turnes J. Recommendations for the future management of thrombocytopenia in patients with liver cirrhosis: A modified RAND/UCLA appropriateness method. *GASTROENTEROL HEPATOL* 2024 Jan;47(1):32-50. English, Spanish. doi: 10.1016/j.gastrohep.2023.03.008. Epub 2023 Apr 5. PMID: 37028757. IF 1.9. Q4.
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- Martinez-Sanchez J, **Torramade-Moix S,** Moreno-Castaño AB, Llobet D, Jerez-Dolz D, Sanchez P, Carrasco M, Mojal S, Moret C, Camacho M, Soria JM, Palomo M, **Martin-Fernandez L, Vidal F,** Escolar G, Diaz-Ricart M, Souto JC. Increased Platelet Adhesiveness in Patients with Venous Thromboembolic Disease. *TH OPEN*. 2024 Nov 30;8(4):e329-e339. doi: 10.1055/s-0044-1800798. PMID: 39619107; PMCID: PMC11608120. IF 1.3. Q3.





Jesús Fernández Sojo



2.2. Cell therapy programme

The aim is for cell therapy at the BST to be a platform for knowledge and cell production for the Catalan healthcare system in order to provide the appropriate response to the needs of patients and the doctors who treat them.

The BST wants to facilitate the introduction of new advanced therapies in the health system, making the BST clean rooms available to research clinicians who need to perform concept tests.

Moreover, the BST is also interested in scaling products and taking on the challenge of bioreactor production in the development of clinical trials jointly with the Spanish Agency of Medicines and Medical Devices (AEMPS) and other entities.

Along with the above, the cell and advanced therapy service research focusses on the development of new products and services in the areas of immunotherapy and regenerative medicine.

Director

Jesús Fernández Sojo

Support staff

Miriam Garcia Biosca

Kenia Rodriguez Gonzalez

Researchers

Belén Álvarez Palomo

Raquel Cabrera Perez

Gemma Aran Canals

Margarita Codinach Creus

Emma Enrich Rande

Rubén Escribá Piera

Raquel Güell Alonso

Miquel de Homdedeu Cortés

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Sara Morini

Jara Palomero Gorrindo

Helena Pasamar Garijo

Carmen Pastor Quiñones

Cristina Prat Vidal

Luciano Rodríguez Gómez

Francesc Rudilla Salvador

Dinara Samarkanova

Sílvia Torrents Zapata

Joaquim Vives Armengol



Research projects

Projects with a PI or CO-PI from the BST

Principal investigator: Joaquim Vives Armengol

Translation of an allogenic tissue engineering product with mesenchymal stem cells from Wharton's jelly for the treatment of osteonecrosis in paediatric oncology patients
Funding organisation: Carlos III Institute of Health
File: PI19/01788
Duration: 2020 – 2024

Principal investigator: Dinara Samarkanova

Clinical evaluation of umbilical cord blood red blood cells for transfusion in extremely premature infants
Funding organisation: Carlos III Institute of Health
File: PI22/00290
Duration: 2023 – 2025

Principal investigator: Joaquim Vives Armengol

GALVANO: Optimisation, Validation and Exploitation of a versatile GMP-Grade Extracellular Vesicles Manufacturing Platform for Clinical Application using Process Analytical Technology
Funding organisation: Spanish Investigation Agency
File: CPP2023-010430
Duration: 2024 – 2027

Principal investigator: Ana Belén Álvarez Palomo

Universal cord blood iPSC-derived CAR-NK cells for an 'off-the-shelf' immunotherapy for cancer (UNiKAR)
Funding organisation: BST
File: I.2021.027
Duration: 2021 – 2024

Principal investigator: Ana Belén Álvarez Palomo

UNiKAR: Universal cord blood iPSC-derived CAR-NK cells for an 'off-the-shelf' immunotherapy for cancer
Funding organisation: Carlos III Institute of Health
File: PI21/00796
Duration: 2022 – 2025

Principal investigator: Ana Belén Álvarez Palomo

OSCAR-iNK: Off-the-Shelf iPSC-derived next generation CAR-NK cells for solid tumor allogenic immunotherapy
Funding organisation: Spanish Investigation Agency
File: CPP2021-008350
Duration: 2022 – 2025

Principal investigator: Joaquim Vives Armengol

Fibrin Sealant Grifols as scaffold in advanced therapies. 3D printing scaffolds for advanced trauma applications. In vivo study
Funding organisation: Instituto Grifols, SA
File: I.2016.035
Duration: 2017 – 2024

Principal investigator: Francesc Rudilla Salvador

Application of T cell receptor sequencing in the development, optimization and characterization of antiviral cellular products.
Funding organisation: BST
File: I.2023.025
Duration: 2023 – 2026

Principal investigator: Joaquim Vives Armengol

Translation of an allogeneic tissue-engineered product for the treatment of focal articular cartilage lesions
Funding organisation: Carlos III Institute of Health
File: PI22/01906
Duration: 2023 – 2025

Principal investigator: Ana Belén Álvarez Palomo

EPIFIN: Engineering induced Pluripotent stem cells for a novel Immunotherapy of Fungal Infections
Funding organisation: Spanish Investigation Agency
File: CPP2022-009594
Duration: 2023 – 2026

Principal investigator: Joaquim Vives Armengol

Design and validation of a platform for the production of mesenchymal cells derived from pluripotent cells with genetic characteristics of therapeutic interest and their scaling up in a bioreactor for clinical use
Funding organisation: BST
File: I.2023.027
Duration: 2023 – 2026

Principal investigator: Francesc Rudilla Salvador

GMP scaling of a new advanced therapy drug, based on infection-specific T lymphocytes to treat post-kidney transplant BK virus nephritis.
Funding organisation: Cellnex Telecom S.A.
File: I.2023.056
Duration: 2023 – ongoing

Collaboration projects

Principal investigator:
Francesc Rudilla Salvador
 GMP scaling of a new advanced therapy drug, based on infection-specific T lymphocytes to treat post-kidney transplant BK virus nephritis.
 Funding organisation: Cellnex Telecom S.A.
 File: I.2023.056
 Duration: 2023 – ongoing

Principal investigator:
Ana Belén Álvarez Palomo
 G-REX GRANT PROGRAM: iNK cells
 Funding organisation: Wilson Wolf Manufacturing LLC
 File: 00000186
 Duration: 2024 – 2026

Principal investigator:
Albert Farres Uribe
 G-REX GRANT PROGRAM: FTA TILS
 Funding organisation: Wilson Wolf Manufacturing LLC
 File: I.2024.068
 Duration: 2024 – 2026

Principal investigator:
Ana Belén Álvarez Palomo
 G-REX GRANT PROGRAM: CAR-macrophages
 Funding organisation: Wilson Wolf Manufacturing LLC
 File: 00000187
 Duration: 2024 – 2026

Principal investigator:
José María Moraleda Jiménez (Instituto Murciano de Investigación Biosanitaria Virgen de la Arrixaca), Joaquim Vives Armengol (BST)
 RICORS TERA.V. Technology and therapeutic developments: innovation, transfer to the health system and education
 Funding organisation: Carlos III Institute of Health
 File: RD21/0017/0022
 Duration: 2022 -2024

Principal investigator:
Antoni Bayés Genís (Hospital Germans Trias i Pujol), Joaquim Vives Armengol (BST)
 Modulation of inflammation by extracellular vesicles in STEMI-derived cardiogenic shock: EV4MI Trial
 Funding organisation: Carlos III Institute of Health
 File: ICI20/00135
 Duration: 2021 – 2024

Principal investigator:
Elena Garralda Cabanas (Hospital Universitari Vall d'Hebron), BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing
 Next-generation TIL therapy targeting neoantigens for immune checkpoint blockade-resistant tumours
 Funding organisation: Carlos III Institute of Health
 File: ICI/20/00076
 Duration: 2021 – 2024

Principal investigator:
Nerea Maiz Elizaran (Hospital Universitari Vall d'Hebron), Margarida Codinach Creus (BST)
 Tissue engineering for the improvement of the surgical technique for the fetoscopic repair of spinal neural tube defects in sheep fetuses
 Funding organisation: Carlos III Institute of Health
 File: PI20/00421
 Duration: 2021 – 2025

Principal investigator:
Jorge Alemany Herrera (One Chain Immunotherapeutics) BST-FTA as subinvestigators,
 Development of a dual CD1a/CCR9-directed CAR-T therapy for the treatment of R/R T-cell Acute Lymphoblastic Leukemia
 Funding organisation: Spanish Investigation Agency
 File: CPP2022-009759
 Duration: 2023 - 2026

Principal investigator:
Guillermo Orti Pascual (Hospital Universitari Vall d'Hebron), BST participation: BST-STC as Cell Processing
 Phase I-Ib clinical trial of safety and immunobiology of the Prophylactic Infusion of $\gamma\delta$ Lymphocytes and NK Cells from an HLA identical donor post Allo-HSCT with T depletion
 Funding organisation: Carlos III Institute of Health
 File: PI22/00710
 Duration: 2023 – 2025

Principal investigator:
Juan Martín Liberal (ICO Bellvitge), Elena Garralda (Hospital Universitari Vall d'Hebron)
BST participation: BST-HVH, BST-Bellvitge as Sub-Investigators; BST-STC as Cell Processing
TILs Treatment in Advanced Tumors with Alterations in the SWI/SNF Complex: the TILTS study
Funding organisation: Carlos III Institute of Health
File: ICI21/0011
Duration: 2024 – ongoing

Principal investigator:
Susana Rives Sola (Hospital Sant Joan de Déu), Enric Garcia Rey (BST)
A phase Ib/II, multi-centre, open-label, single-arm, multi-cohort study to evaluate the safety and efficacy of JCAR017 in paediatric patients with acute B-cell lymphoblastic leukaemia and relapsed/refractory B-cell non-Hodgkin's Lymphoma
Funding organisation: Celgene Corporation
File: 2018-001246-34
Duration: 2018 – 2024

Principal investigators:
Pere Barba, Constantino Sabado (Hospital Universitari Vall d'Hebron), Eva González Barca (ICO Bellvitge)
BST participation: BST-HVH, BST-Bellvitge as Sub-Investigators; BST-STC as Cell Processing
Multicenter, Open-Label, Phase 3 Study of Tabelecleucel for Solid Organ or Allogeneic Hematopoietic Cell Transplant Subjects with Epstein-Barr Virus-Associated Post-Transplant Lymphoproliferative Disease after Failure of Rituximab or Rituximab and Chemotherapy (ALLELE Study) Funding organisation: Atara Biotherapeutics Inc.
File: 2017-002949-30
Duration: 2020 – 2024

Principal investigator:
Angel Raya Chamorro (Bellvitge Biomedical Research Institute), Joaquim Vives Armengol (BST)
Advancing the clinical translation of iPSC-based cell therapies for heart failure
Funding organisation: La Marató de TV3 Foundation
File: 268/U/2023
Duration: 2024 – 2027

Principal investigator:
Guillermo Ortí (Hospital Universitari Vall d'Hebron)
BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing
A Randomised, Open-label, Multicentre, Phase 3 Trial of First-line Treatment with Mesenchymal Stromal Cells MC0518 Versus Best Available Therapy in Adult and Adolescent Subjects with Steroid-refractory Acute Graft-versus-host Disease After Allogeneic Haematopoietic Stem Cell Transplantation (IDUNN Trial)
Funding organisation: Medac GmbH
File: 2019-001462-15
Duration: 2021 – ongoing

Principal investigator:
Claudia Valverde Morales (Hospital Universitari Vall d'Hebron)
BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing
A phase 2 single-arm, open-label clinical trial of ADP-A2M4 SPEAR™ T-cells in subjects with advanced synovial sarcoma or myxoid/round cell liposarcoma
Funding organisation: Adaptimmune Therapeutics PLC
File: 2019-000589-39
Duration: 2020 – 2024

Principal investigator:
Manuel Moyano Cudinach (Tecnio Biotech), Joaquim Vives Armengol (BST)
Design and development of the new eLAB MULTI SU bioreactor
Funding organisation: Centre for technological development and innovation
File: CPP 6/2023AB
Duration: 2024 – 2025

Principal investigator:
Gloria Iacoboni (Hospital Universitari Vall d'Hebron)
BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing
A single arm, open-label, multi-centre, phase I/II study evaluating the safety and clinical activity of auto4, a car t cell treatment targeting TRBC1, in patients with relapsed or refractory TRBC1 positive selected T cell non-Hodgkin Lymphoma
Funding organisation: Autolus Ltd
File: 2017-001965-26
Duration: 2020 – 2024

Principal investigator:
Elena Garralda (Hospital Universitari Vall d'Hebron)
BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing; BST-FTA as Manufacturing Plant
A Phase I study to assess the safety and tolerability of ex vivo next-generation neoantigen-selected Tumor-infiltrating Lymphocyte (TIL) therapy in advanced epithelial tumors and immune checkpoint blockade (ICB) resistant solid tumors.
Funding organisation: Vall d'Hebron Institute of Oncology
File: 2020-005778-90
Duration: 2020 – 2024

Principal investigator:
Elena Garralda (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

A phase Ib study with a safety lead-in cohort and expansion phase, of the safety, tolerability, biological effect, and efficacy of allogenic natural killer cells in combination with trastuzumab and pertuzumab in adult patients with refractory metastatic Her2 positive breast cancer
 Funding organisation: Vall d'Hebron Institute of Oncology
 File: 2020-004543-84
 Duration: 2023 - 2024

Principal investigator:
Pere Barba (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

Phase I, open-label, multi-centre, dose escalation study of YTB323 in adult patients with CLL/SLL and DLBCL
 Funding organisation: Novartis Pharma AG
 File: 2018-004336-30
 Duration: 2021 - 2024

Principal investigator:
Pere Barba (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

An open-label, multi-centre, phase Ib/II study evaluating the safety and efficacy of AUTO1, a CAR T-cell treatment targeting CD19, in adult patients with relapsed or refractory B-cell acute lymphoblastic leukaemia.
 Funding organisation: Autolus Therapeutics Ltd
 File: 2019-001937-16
 Duration: 2021 - 2024

Principal investigator:
Eva Muñoz (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

An open-label, phase I study of NEO-PTC-01 in patients with advanced or metastatic melanoma
 Funding organisation: BioNTech Manufacturing GmbH
 File: 2019-003908-13
 Duration: 2021 - 2024

Principal investigators:
Pere Barba, Constantino
Sabado (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

An open-label, single-arm, multicohort, phase II study to assess the efficacy and safety of tabellecleucel in subjects with Epstein-Barr virus-associated diseases
 Funding organisation: Atara Biotherapeutics, Inc.
 File: 2020-000177-25
 Duration: 2021 - 2024

Principal investigator:
Elena Elez (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

A multi-site, open-label, Phase II, randomized, controlled trial to compare the efficacy of RO7198457 versus watchful waiting in resected, Stage II (high risk) and Stage III colorectal cancer patients who are ctDNA positive following resection
 Funding organisation: BioNTech Manufacturing GmbH
 File: 2020-000451-12
 Duration: 2021 - 2024

Principal investigator:
Cecilia Carpio (Hospital
Universitari Vall d'Hebron)
BST participation: BST-
HVH as Sub-Investigators;
BST-STC as Cell
Processing

A Phase 3 Randomized Study Comparing Bortezomib, Lenalidomide and Dexamethasone (VRd) followed by Ciltacabtagene Autoleucel, a Chimeric Antigen Receptor T cell (CAR-T) Therapy Directed Against BCMA versus Bortezomib, Lenalidomide,

and Dexamethasone (VRd) followed by Lenalidomide and Dexamethasone (Rd) Therapy in Participants with Newly Diagnosed Multiple Myeloma for Whom Hematopoietic Stem Cell Transplant is Not Planned as Initial Therapy
 Funding organisation: Johnson & Johnson Innovative Medicine
 File: 2021-001242-35
 Duration: 2021 - 2024

Collaboration projects

Principal investigator:
Cristina Saura (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

Treatment of advanced or metastatic triple-negative breast cancer with adoptive therapy of PD1+ tumor-infiltrating lymphocytes
Funding organisation: Clínic Foundation for Biomedical Research
File: 2020-003638-19
Duration: 2022 – ongoing

Principal investigator:
Ana Oaknin (Hospital Universitari Vall d'Hebron)

BST participation: BST-HVH as Sub-Investigators

A Phase 2, Multicenter Study to Evaluate the Efficacy and Safety Using Autologous Tumor Infiltrating Lymphocytes (LN-145) in Patients with Recurrent, Metastatic, or Persistent Cervical Carcinoma
Funding organisation: Iovance Therapeutics, Inc
File: 2016-003447-11
Duration: 2022 – 2024

Principal investigator:
Elena Garralda (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A phase 1 dose escalation study to assess safety and efficacy of ADP-A2M4CD8 as monotherapy or in combination with nivolumab in HLA-A2+ subjects with MAGE-A4 positive tumors
Funding organisation: Adaptimmune Therapeutics PLC
File: 2019-001965-34
Duration: 2022 – 2024

Principal investigator:
Gloria Iacoboni (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A pivotal Phase II randomised, multi-centre, open-label study to evaluate the efficacy and safety of MB-CART2019.1 compared to standard of care therapy in participants with relapsed/refractory diffuse large B-cell lymphoma, who are not eligible for high-dose chemotherapy and autologous stem cell transplantation
Funding organisation: Miltenyi Biomedicine GmbH
File: 2020-003908-14
Duration: 2022 – 2024

Principal investigator:
Pere Barba (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Phase 3 Randomized, Open-Label, Multicenter Study Evaluating the Efficacy of Axicabtagene Ciloleucel Versus Standard of Care Therapy in Subjects with Relapsed/Refractory Follicular Lymphoma
Funding organisation: Kite Pharma, Inc
File: 2021-003260-28
Duration: 2023 – 2024

Principal investigator:
Albert Oriol (ICO Badalona), Anna Sureda (ICO Bellvitge)

BST participation: BST Badalona - Bellvitge as Sub-Investigators; BST-STC as Cell Processing

A Phase 3 Randomized Study Comparing Daratumumab, Bortezomib, Lenalidomide and Dexamethasone (DVRd) followed by Ciltacabtagene Autoleucel versus Daratumumab, Bortezomib, Lenalidomide and Dexamethasone (DVRd) followed by Autologous Stem Cell Transplant (ASCT) in Participants with Newly Diagnosed Multiple Myeloma who are Transplant Eligible
Funding organisation: Johnson & Johnson Innovative Medicine
File: 2021-003284-10
Duration: 2023 – 2024

Collaboration projects

Principal investigator:
Albert Oriol (ICO Badalona), Anna Sureda (ICO Bellvitge)

BST participation: BST Badalona - Bellvitge as Sub-Investigators; BST-STC as Cell Processing

A Randomized, Open-Label, Phase 3 Trial to Compare the Efficacy and Safety of Idecabtagene Vicleucel with Lenalidomide Maintenance Versus Lenalidomide Maintenance Therapy Alone in Adult Participants with Newly Diagnosed Multiple Myeloma Who Have Suboptimal Response After Autologous Stem Cell Transplantation (KarMMa-9)
Funding organisation: Celgene Corporation
File: 2022-501346-30
Duration: 2023 – 2024

Principal investigator:
Cristina Diaz de Heredia (Hospital Universitari Vall d'Hebron) BST

participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

Phase 2 study of the infusion of differentiated autologous T-cells from peripheral blood, expanded and transduced with a lentivirus to express a chimeric antigen receptor with anti-CD19 specificity (A3B1) conjugated with the co-stimulatory regions 4-1BB and CD3z (ARI-0001 cells) in children and adolescents aged 0-18 years with CD19+ acute lymphoblastic leukaemia resistant or refractory to treatment
Funding organisation: Sant Joan de Déu Research Foundation
File: 2022-001101-52
Duration: 2023 – 2024

Principal investigator:
Pere Barba (Hospital Universitari Vall d'Hebron)

Anna Maria Sureda (ICO Bellvitge)
BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

An Adaptive Phase 3, Randomized, Open-Label, Multicenter Study to Compare the Efficacy and Safety of Axicabtagene Ciloleucel versus Standard of Care Treatment as First-Line Therapy in Subjects with High-Risk Large B-Cell Lymphoma
Funding organisation: Kite Pharma, Inc
File: 2022-000649-33
Duration: 2023 – 2024

Principal investigator:
Josefina Cortés (Hospital Universitari Vall d'Hebron)

BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

An open-label, multicenter, phase ½ study to assess safety, efficacy and cellular kinetics of YTB323 in participants with severe, refractory systemic lupus erythematosus (srSLE)
Funding organisation: Novartis
File: 2022-001796-14
Duration: 2023 – 2024

Principal investigator:
Pere Barba (Hospital Universitari Vall d'Hebron)

BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A randomized, open-label, multi-center phase III trial comparing tisagenlecleucel to standard of care in adult participants with relapsed or refractory follicular lymphoma
Funding organisation: Johnson & Johnson Innovative Medicine
File: 2023-503452-27-00
Duration: 2023 – 2024

Principal investigator:
Ana Oaknin (Hospital Universitari Vall d'Hebron)

BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

Phase 2, open-label, randomized, non-comparative clinical trial of ADP-A2M4CD8 monotherapy and in combination with Nivolumab in subjects with recurrent ovarian cancers
Funding organisation: Adaptimmune Therapeutics PLC
File: 2022-003176-16
Duration: 2023 – 2024

Principal investigator:
Pere Barba (Hospital Universitari Vall d'Hebron)

BST participation: BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Phase 1b Multicenter, Open-label, Study of JNJ-90014496, an Autologous CD19/CD20 Bi-specific CAR-T Cell Therapy in Adult Participants with Relapsed or Refractory B-cell Non-Hodgkin Lymphoma
Funding organisation: Johnson & Johnson Innovative Medicine
File: 2023-50626733
Duration: 2024 – ongoing

Principal investigator:
Eva Muñoz (Hospital Universitari Vall d'Hebron)
BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing
 A Phase 3, multicenter, randomized, open-label, parallel group, treatment study to assess the efficacy and safety of the lifileucel (LN-144, autologous tumor-infiltrating lymphocytes [TIL]) regimen in combination with pembrolizumab compared with pembrolizumab monotherapy in participants with untreated, unresectable or metastatic melanoma
 Funding organisation: Iovance Biotherapeutics, Inc
 File: 2022-503140-41
 Duration: 2024 – ongoing

Principal investigator:
Elena Garralda (Hospital Universitari Vall d'Hebron)
BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing; BST-FTA as Manufacturing Plant
 Pragmatic approach to Adoptive Cell Therapy using Tumor Infiltrating Lymphocytes in selected solid tumors
 Funding organisation: Vall d'Hebron Institute of Oncology
 File: 2023-506400-99
 Duration: 2024 – ongoing

Principal investigator:
Cristina Diaz de Heredia (Hospital Universitari Vall d'Hebron)
BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing
 A Randomised, Open-label, Controlled, Multicentre, Phase 2 Trial of First-line Treatment With Mesenchymal Stromal Cells MC0518 Versus Best Available Therapy in Paediatric Participants With Steroid-refractory Acute Graft-versus-host Disease After Allogeneic Stem Cell Transplantation (BALDER Trial)
 Funding organisation: Medac GmbH
 File: 2023-503952-28
 Duration: 2024 – ongoing

Principal investigator:
Cristina Diaz de Heredia (Hospital Universitari Vall d'Hebron)
BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing
 A Single-Arm, Open-Label, Multi-Centre, Phase II Study Evaluating the Efficacy and Safety of AUTO1 in Pediatric Patients with CD19-Positive Relapsed/ Refractory (r/r) B-cell Acute Lymphoblastic Leukemia (B ALL) and Aggressive Mature B-cell Non-Hodgkin Lymphoma (B NHL).
 File: 2023-506307-26
 Funding organisation: Autolus LTD
 Duration: 2024 - ongoing

Principal investigator:
Ana Carolina Caballero Gonzalez (Hospital de la Santa Creu i Sant Pau)
BST participation:
BST-HSCSP as Sub-Investigators; BST-STC as Cell Processing
 Immunotherapy with adult, autologous, differentiated T lymphocytes from peripheral blood, selected by CD62L expression, expanded and transduced (genetically modified) using a lentiviral vector to express a chimeric receptor with anti-CD19 specificity associated with costimulatory sequences 4-1-BB and CD3z in patients with non-Hodgkin B lymphoma.
 Funding organisation: Sant Pau Research Institute
 File: 2020-003133-38
 Duration: 2024 – ongoing

Principal investigator:
Ana Carolina Caballero Gonzalez (Hospital de la Santa Creu i Sant Pau)
BST participation:
BST-HSCSP as Sub-Investigators; BST-STC as Cell Processing
 Immunotherapy with adult, autologous, peripheral blood, differentiated T lymphocytes, expanded and transduced (genetically modified) using a lentiviral vector to express a chimeric receptor with anti-CD30 specificity associated with costimulatory sequences 4-1-BB and CD3z in patients with classical Hodgkin lymphoma and non-Hodgkin T lymphoma with CD30 expression.
 Funding organisation: Sant Pau Research Institute
 File: 2019-001263-70
 Duration: 2024 – ongoing

Collaboration projects

Principal investigator:
Alberto Mussetti (ICO Bellvitge)

BST participation:
BST -Bellvitge as Sub-Investigators

A Multicenter, Randomized, Double-blind, Placebo-Controlled Phase II Study to Investigate the Efficacy and Safety of CYP-001 in Combination with Corticosteroids vs Corticosteroids Alone for the Treatment of High-Risk Acute Graft Versus Host Disease
Funding organisation: Cynata Therapeutics Ltd.
File: 2022-001413-40
Duration: 2024 - ongoing

Principal investigator:
Josefina Cortés (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Single-Arm, Open-Label, Phase I Study to Determine the Safety, Tolerability and Preliminary Efficacy of Obecabtagene Autoleucel in Patients with Severe, Refractory Systemic Lupus Erythematosus
Funding organisation: Autolus LTD
File: 2023-508236-60
Duration: 2024 – ongoing

Principal investigator:
Alfredo Guillén (Hospital Universitari Vall d'Hebron), Iván Castellbí (Hospital de la Santa Creu i Sant Pau)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Phase II, multi-part, three-year, randomized, open-label, assessor-blinded, active-controlled, multicenter study to evaluate the efficacy and safety of rapcabtagene autoleucel versus rituximab treatment in participants with severe refractory diffuse cutaneous systemic sclerosis
Funding organisation: Novartis Pharma AG
File: 2023-510380-34
Duration: 2024 – 2025

Principal investigator:
Fina Cortés (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Phase 2, adaptive, randomized, open-label, assessorblinded active-controlled study to evaluate the efficacy and safety of rapcabtagene autoleucel versus Standard of Care in patients suffering from systemic lupus erythematosus (SLE) with active, refractory lupus nephritis (LN)
Funding organisation: Novartis Pharma AG
File: 2023-510150-17
Duration: 2024 – 2024

Principal investigator:
Xavier Montalbán (Hospital Universitari Vall d'Hebron)

BST participation:
BST-HVH as Sub-Investigators; BST-STC as Cell Processing

A Phase 1, Multicenter, Single-arm, Dose-escalation Study of CC-97540 (BMS-986353), CD19-Targeted NEX-T Chimeric Antigen Receptor (CAR) T Cells, Evaluating Safety and Tolerability in Participants with Relapsing Forms of Multiple Sclerosis (RMS) or Progressive Forms of Multiple Sclerosis (PMS)
Funding organisation: BMS / Celgene Corporation
File: 2023-507820-22
Duration: 2024 – 2024

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- Rudilla F**, Carrasco-Benso MP, **Pasamar H**, **López-Montañés M**, **Andrés-Rozas M**, **Tomás-Marín M**, Company D, Moya C, Larrea L, Guerreiro M, Barba P, Arbona C, **Querol S**. Development and characterization of a cell donor registry for virus-specific T cell manufacture in a blood bank. *HLA* 2024 Mar;103(3):e15419. doi: 10.1111/tan.15419. PMID: 38450972. IF 6.5. Q1.
- López-Fernández A**, Garcia-Gragera V, Lecina M, **Vives J**. Identification of critical process parameters for expansion of clinical grade human Wharton's jelly-derived mesenchymal stromal cells in stirred-tank bioreactors. *BIOTECHNOL J* 2024 Feb;19(2):e2300381. doi: 10.1002/biot.202300381. PMID: 38403461. IF 4.7. Q1.
- Escribá R**, Beksac M, Bennaceur-Griscelli A, Glover JC, Koskela S, Latsoudis H, **Querol S**, **Alvarez-Palomo B**. Current Landscape of iPSC Haplobanks. *Stem Cell Rev Rep*. 2024 Sep 14. doi: 10.1007/s12015-024-10783-7. Epub ahead of print. Erratum in: *Stem Cell Rev Rep*. 2024 Oct 18. doi: 10.1007/s12015-024-10804-5. PMID: 39276260. IF 4.5. Q2.
- López-Fernández A**, **Codinach M**, **Coca MI**, **Prat-Vidal C**, **Castañó J**, **Torrents S**, **Aran G**, **Rodríguez L**, **Querol S**, **Vives J**. Comparability exercise of critical quality attributes of clinical-grade human mesenchymal stromal cells from the Wharton's jelly: single-use stirred tank bioreactors versus planar culture systems. *CYTOTHERAPY* 2024 May;26(5):418-426. doi: 10.1016/j.jcyt.2023.08.008. Epub 2023 Sep 16. PMID: 37715777. IF 4.5. Q2.
- Closa L**, **Samarkanova D**, **Lera C**, **Gonzalez N**, **Lloret M**, **Codinach M**, **Aran G**, **Fernandez-Sojo J**, **Vidal F**, **Soria MG**, **Querol S**. Development of molecular sterility assay for rapid quality release of cord blood erythrocytes units for transfusion. *TRANSFUSION*. 2024 Dec 8. doi: 10.1111/trf.18084. Epub ahead of print. PMID: 39648414. IF 2.5. Q2.
- Manchanayake GS**, **Busquets EF**, **Buendia AG**, Ferrer P, Palomar G, Pelegay MJ, Ribera I, **Azqueta C**, **Samarkanova D**, **Fernandez-Sojo J**, **Flores NC**, **Querol S**. Efficiency assessment of cord blood banking and compatibility with delayed cord clamping. *BLOOD TRANSFUS* 2024 Aug 5. doi: 10.2450/BloodTransfus.767. Epub ahead of print. PMID: 39133625. IF 2.4. Q2.
- Samarkanova D**, **Codinach M**, **Aran G**, Guitart M, **Valdivia E**, **Martorell L**, **Azqueta C**, **Rodríguez-Aliberas M**, **Soria G**, **Martínez N**, **Alonso E**, **Farssac E**, Madrigal A, **Fernandez-Sojo J**, Rebullá P, **Querol S**. Quality and stability studies of red blood cell concentrates from umbilical cord blood compared to their adult counterparts. *BLOOD TRANSFUS* 2024 Aug 2. doi: 10.2450/BloodTransfus.761. Epub ahead of print. PMID: 39133620. IF 2.4. Q2.
- Rabcuka J, Smethurst PA, Dammert K, Saker J, **Aran G**, Walsh GM, Tan JCG, **Codinach M**, McTaggart K, Marks DC, Bakker SJL, McMahon A, Di Angelantonio E, Roberts DJ, Blonski S, Korczyk PM, Shirakami A, Cardigan R, Swietach P. Assessing the kinetics of oxygen-unloading from red cells using FlowScore, a flow-cytometric proxy of the functional quality of blood. *EBIOMEDICINE*. 2025 Jan;111:105498. doi: 10.1016/j.ebiom.2024.105498. Epub 2024 Dec 14. PMID: 39674089; PMCID: PMC11730303. IF 9.7. Q1.
- Sempere A, **Castillo N**, **Rudilla F**, **Querol S**, **Enrich E**, **Prat-Vidal C**, **Codinach M**, Cofan F, Torregrossa V, Dieckmann F, Bodro M. Successful BK virus-specific T cells therapy in a kidney transplant recipient with progressive multifocal leukoencephalopathy. *AM J TRANSPLANT* 2024 May 9:S1600-6135(24)00297-1. doi: 10.1016/j.ajt.2024.05.003. PMID: 38734417. IF 8.7. Q1.
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- Chaverri D, Gallardo-Villares S, Pinto JA, **Rodríguez L, Codinach M, García-López J, Querol S, Coll R, Vives J**, Granell-Escobar F. Treatment of non-hypertrophic pseudoarthrosis of long bones with a Tissue Engineered Product loaded with autologous bone marrow-derived Mesenchymal Stromal Cells: Results from a phase IIa, prospective, randomized, parallel, pilot clinical trial comparing to iliac crest autograft. INJURY 2024 Jul;55(7):111596. doi: 10.1016/j.injury.2024.111596. Epub 2024 May 1. PMID: 38797000. IF 2.5. Q2.
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2.3.

Tissue Bank programme

The Tissue Bank programme is focused on translational research, as well as the development, optimisation and innovation of procedures and techniques aimed at improving the usefulness, quality and safety of human cells and tissues, for therapeutic or biosubstitutive purposes.

Researchers also have a coordinating role in the projects, analysing their viability and, when possible, compiling resources for their development through competitive public grants (Spain and the European Community) and from private entities and foundations and businesses in the industry.

Our research programme enhances self-sustainability and innovation based on collaboration with the business sector in coordination with leading translational research clinical groups in the national and international context.



Translational research is a tool for continuous improvement and focuses on responding to therapeutic indications through the use of effective and appropriate approaches and procedures.

The strategy of our RDI programme thus enhances the different lines of research regarded as strategic for the organisation, taking into account other aspects, such as the fact that our first priority is the patient. In addition, compliance with the ethical and regulatory framework as well as quality and excellence and a commitment to sustainability are fundamental pillars in the process.

Director

Cristina Castells Sala

Raquel Bermudo Gascón

Oscar Fariñas Barbera

Laura López Puerto

Marisa Pérez Rodríguez

José Ignacio Rodríguez

Martínez

Laia Ruiz Ponsell

Andrés Savío López

Jaime Tabera Fernandez

Adrián Tirado Herranz

Carlos Torrico León

Anna Vilarrodona Serrat

Researchers

Elba Agustí Robira

Ana Rita Baptista Piteira

Cristina Castells Sala



Research projects

Projects with a PI or CO-PI from the BST

Principal investigator: Cristina Castells Sala

VASCRAFT: New human decellularized and re-endothelialized tissue-engineered VAScular gRAFT for coronary artery bypass grafting
Funding organisation: Spanish Investigation Agency
File: CPP2021-008438
Duration: 2022 – 2025

Principal investigator: Anna Vilarrodona Serrat

EGALITE: European Group for Accreditation and Liaison of Blood-Tissues and Cells Establishments
Funding organisation: European Commission
File: 101056852
Duration: 2022 – 2024

Principal investigator: Anna Vilarrodona Serrat

PRE-CO-CE Project: Seeking a path to self-sufficiency: corneal preservation with new mineral antioxidants (cerium oxide nanoparticles).
Funding organisation: Mutua Madrileña Foundation
File: AP-16006/2024
Duration: 2024 – 2027

Principal investigator: Raquel Bermudo Gascón

Technological development and implementation of a computer system for digitising grafts and donor-recipient correlation for use in tissue banks
Funding organisation: BST
File: I.2021.026
Duration: 2021 – 2024

Principal investigator: Laia Ruiz Ponsell

Desarrollo de un protocolo de producción de nervio descelularizado de gran calibre para su uso clínico en regeneración de nervios periféricos
Funding organisation: BST
File: I.2023.028
Duration: 2023 – 2026

Principal investigator: Oscar Fariñas Barbera

Desenvolupament de biotintes SoHo per la bioimpressió 3D d'un prototip d'empelt osteocondral
Funding organisation: BST
File: I.2023.031
Duration: 2023 – 2026

Principal investigator: Oscar Fariñas Barbera

3DCartiBone: Development of bioinks formulated with substances of human origin for use in osteochondral 3D-bioprinting
Funding organisation: Spanish Investigation Agency
File: CPP2023-010646
Duration: 2024 - 2027

Collaboration projects

Principal investigator: Massimo Cardillo (Insituto Superior di Sanita), Anna Millán Álvarez (BST)

GAPP-PRO: Piloting GAPP model approach for assessing and authorizing novel substance of human origin preparation PROCesses
Funding organisation: European Commission
File: 101128035
Duration: 2024 – 2027

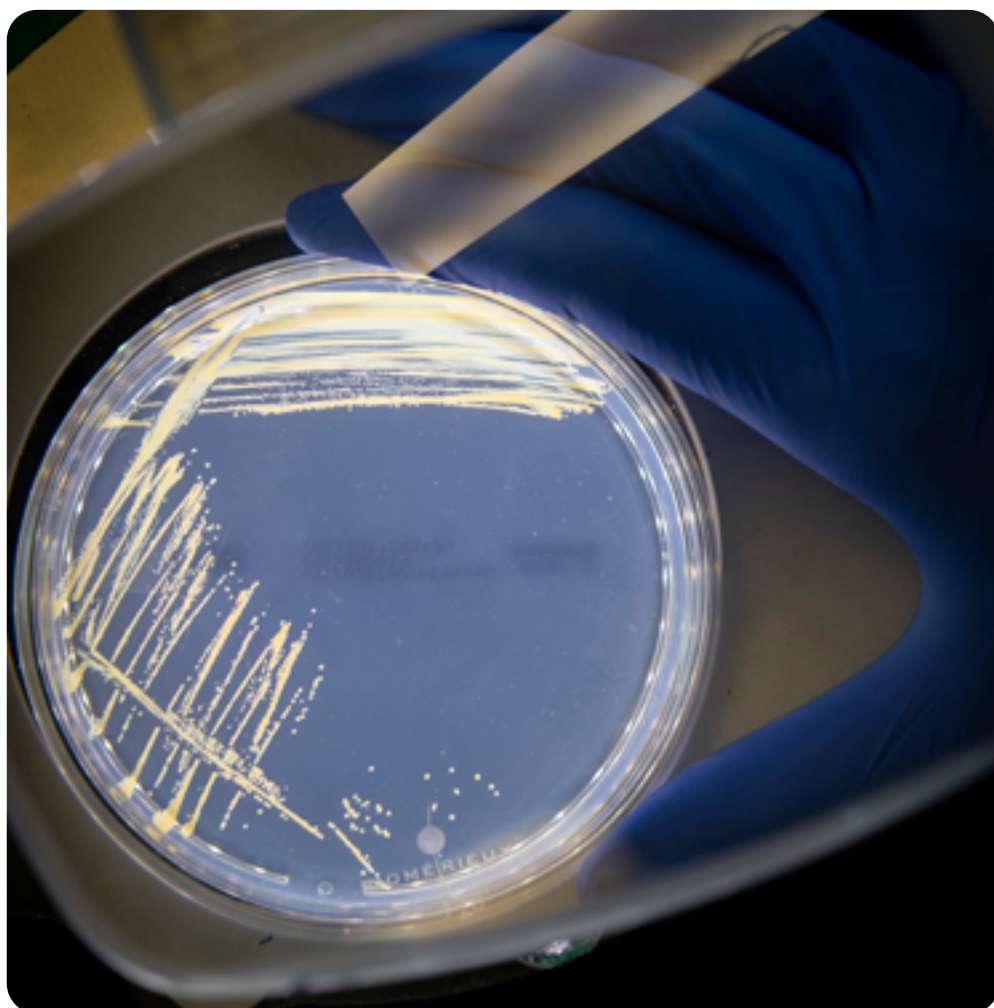
Publications

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Bayes-Genis A, Gastelurrutia P, Monguió-Tortajada M, Cámara ML, **Prat-Vidal C,** Cediel G, **Rodríguez-Gómez L,** Teis A, Revuelta-López E, Ferrer-Curriu G, Roura S, Gálvez-Montón C, Bisbal F, **Vives J, Vilarrodona A,** Muñoz-Guijosa C, **Querol S.** Implantation of a double allogeneic human engineered tissue graft on damaged heart: insights from the PERISCOPE phase I clinical trial. EBIOMEDICINE 2024 Apr;102:105060. doi: 10.1016/j.ebiom.2024.105060. Epub 2024 Mar 14. PMID: 38490102; PMCID: PMC10955661. IF 11.1. Q1.

Vila M, Xiberta P, Ruiz M, **Bermudo R, Leivas D, Fariñas O, Vilarrodona A,** Boada I. BeST-Graft viewer, a new system to improve the bone allograft-recipient matching process. COMPUT BIOL MED 2024 May 6;176:108553. doi: 10.1016/j.compbio.2024.108553. PMID: 38723397. IF 7.7. Q1.



2.4.

Biological safety programme

The Transfusion Safety Laboratory (LST in the Spanish acronym) aims to improve knowledge on pathophysiological, epidemiological and detection aspects of infectious agents that affect the safety of blood, cells, tissues and breast milk.

In this respect, we should highlight the activity carried out to improve knowledge of the presence of pathogens from other countries among the BST's reference population in Catalonia.

Studies in this direction are aimed at planning and establishing strategies to ensure the safety of blood products on the basis of a correct selection of blood donors and the use of diagnostic tests. It should be borne in mind that the BST is the only centre that distributes blood products in Catalonia and its direct responsibility is to maintain and promote research along these lines.

The LST comprises the Care Unit and the R&D Unit for transmissible agents. The R&D activity of the LST has two main lines:

- A.** Viral hepatitis (HBV, HCV and HEV) and HIV coinfection
- B.** Epidemiological research and development of new tools for the detection of emerging infectious agents (Chagas disease, HTLV-I/II, Chikungunya virus, malaria, XMRV, ZIKA)

Director

Sílvia Sauleda Oliveras

Researchers

Marta Bes Maijó
Maria Piron

Support staff

Angeles Rico Blázquez



Research projects

Projects with a PI or CO-PI from the BST

Principal investigator: **Maria Piron**

Development of real-time PCR protocols (ZIKA, Dengue, Chikungunya, HTLV-I, HTLV-II, etc.) as supplementary screening or analysis tools for emerging infectious pathogens and a field study of emerging pathogens in high-risk travellers and immigrant donors
Funding organisation: BST
File: I.2016.037
Duration: 2009 – 2024

Principal investigator: **Sílvia Sauleda Oliveras**

Naturally- and vaccine-induced humoral immune response to SARS-CoV-2:
A holistic approach from the Blood Bank
Funding organisation: BST
File: I.2021.029
Duration: 2021 – 2024

Collaboration projects

Principal investigator: **Mary Costafreda** **(Universitat de Barcelona)** **Marta Bes** **Maijó (BST)**

MicroRNAs in hepatitis E virus replication and pathogenesis: implications for therapeutics (miR4HEP)
Funding organisation: Spanish Investigation Agency
File: PID2023-150109OB-I00
Duration: 2024 – 2026

Sílvia Sauleda Oliveras



Publications

- Ruiz-Ponsell L**, Monastiri A, López-Roig M, **Sauleda S**, **Bes M**, Mentaberre G, Escobar-González M, Costafreda MI, López-Olvera JR, Serra-Cobo J. Endemic maintenance of human-related hepatitis E virus strains in synurbic wild boars, Barcelona Metropolitan Area, Spain. *SCI TOTAL ENVIRON* 2024 Oct 11;955:176871. doi: 10.1016/j.scitotenv.2024.176871. PMID: 39395489. IF 8.2. Q1.
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- Köhler B, **Bes M**, Chan HL, Esteban JI, Piratvisuth T, Sukeepaisarnjaroen W, Tanwandee T, Thongsawat S, Mang A, Morgenstern D, Swiatek-de Lange M, Dayyani F. A new biomarker panel for differential diagnosis of cholangiocarcinoma: Results from an exploratory analysis. *INT J BIOL MARKERS* 2024 Mar 28;3936155241235185. doi: 10.1177 / 03936155241235185. PMID: 38549363. IF 2.3. Q3.

2.5.

Blood, cell and tissue donation programme

This is a newly created programme in the SRP 2017-20.

It aims, among other things, to develop projects for the improvement of our knowledge of donors' behaviour and their affective and decision-making mechanisms in order to better adapt donations to therapeutic needs, while preserving the well-being and ethical and social values of donors.

The research focuses on a series of priorities, one of which is the study of ethical principles, promotion, donation behaviours and, above all, the protection, well-being and comfort of the donor.



3.

Core platforms

The central or core platforms are shared research resources that provide access to BST researchers and institutions with links to instruments, technologies and services, as well as expert consultations and collaborations.

The BST has fostered the consolidation of these platforms through the laboratories of the healthcare divisions, taking advantage of their technological capabilities and opening up their own research resources to general use.

3.1. Genomics platform

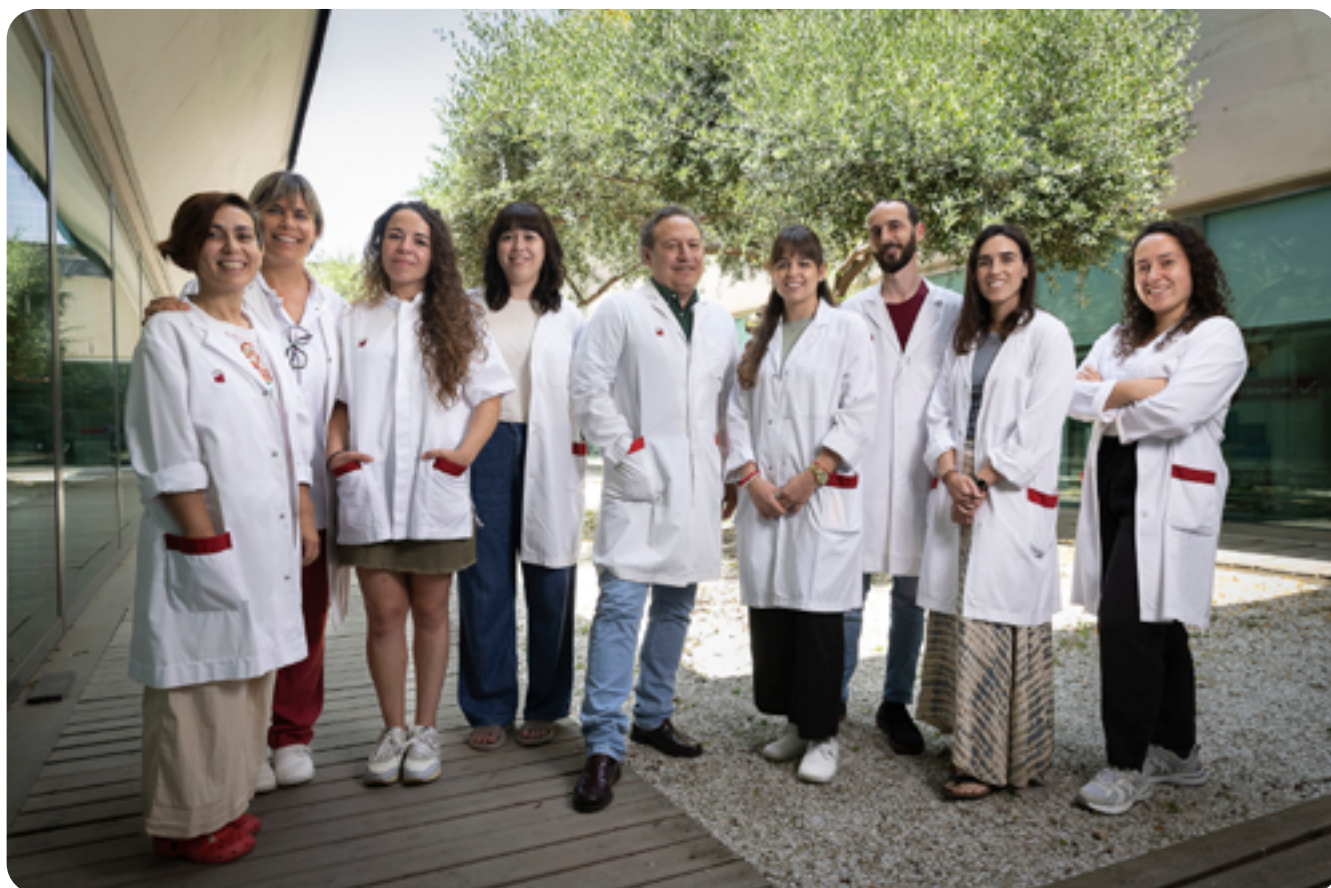
The Genomics Platform of the Banc de Sang i Teixits (BST) supports the adaptation of molecular diagnostic protocols to next generation sequencing (NGS) technology, as well as its application to different research and innovation projects. The extensive experience in the development of NGS applications is complemented by a solid support structure in equipment. Currently, the platform has two MiSeq and one Illumina NextSeq 500 equipment, which allow great scalability to address protocols ranging from the identification of point variants in one or a few genes to whole exome sequencing or transcriptome study. It also has Oxford Nanopore's MinION and PromethION P2 third-generation sequencing (TGS) platforms, which enable ultra-long reads and are being implemented in different areas of interest to the BST. In addition to sequencing technology, the Platform has a specific molecular biology instrumentation infrastructure within the laboratory area (nucleic acid extractors, automatic dispensers, traditional SeqStudio genetic analyzers, Thermalcyclers, Real-Time PCR, Luminex technology, Nanodrop, Qubit, etc.) that allows automation for the processing of large sample volumes simultaneously. It also has bioinformatics tools and specific analysis programs for the interpretation of the results, as well as data management systems to store the large volume of information generated by these technologies in an agile and secure manner. The functions of the platform consist in the management and optimization of the use of NGS and TGS technology. Moreover, the platform provides technical support to researchers who want to use these genomic techniques in the design and development of projects, in the execution and analysis of data. In this sense, it is essential to support the projects from the initial stages to determine the most suitable strategy that allows the achievement of the objectives.

Director

Irene Corrales Insa

Researchers

Nina Borràs Agustí
Natàlia Comes Fernandez
Carlos Hobeich Naya
Francisco Vidal Pérez



3.2. Cell laboratory

The Cell Laboratory is dedicated to executing all necessary quality controls to ensure the quality and safety for products destined for transfusion or transplantation. Our focus includes, but is not limited to, blood components, umbilical cord units, hematopoietic progenitors, and advanced cell therapies.

Our expertise lies in this area, specifically in the establishment and validation of novel analytical methods that directly support the advancement of new therapeutic options.

The Cell Laboratory offers key resources for researchers focused on cell cultures and characterization. We provide the essential equipment for cytometry, microscopy, functional studies, along with the basic training to ensure its correct operation.

Our experienced professionals also lend their expertise to enhance the research and support efforts of BST scientists. This includes technical guidance on project design, execution, data management, and analysis. The lab's responsibilities related to the research includes: training users, organizing equipment use, overseeing operations, performing maintenance and calibration, creating and updating standard operating procedures, supporting users with experimental design and execution involving cells, and staying current with technological advancements.

Director

Margarida Codinach Creus

Researchers

Francisco Javier Algar
Gutierrez
Begoña Amill Camps
Mireia Lloret Sanchez
Fatima Shettiyar Brun
Sara López Molina
Nicole Somarribia
Hernández

Laura Galvez Saleta
Lissandra Puentes Garcia
Margarita Blanco Garcia
Gemma Aran Canals
Silvia Torrents Zapata
Marta Arumí Planas
Carmen Pastor Quiñones



3.3. The Biobank

The BST Biobank provides the scientific community with the necessary biological material, in optimal conditions, to contribute to its research of excellence while guaranteeing the rights of donors.

It began its activity on 17 September 2010, with provisional authorisation, and obtained definitive administrative authorization on 12 April 2013.

It currently has a cross-cutting structure that manages the transfers of biological samples (blood components, plasma, serum, progenitors, tissues, etc.) between the BST's different The Biobank's scientific committee has 6 members:

The Biobank's scientific committee has 5 members:

Silvia Sauleda. Head of the Transfusion Safety Laboratory (LST)	Anna Vilarrodona Head of the Tissue Bank	Jesús Fernández Head of the Cell Therapy Service
Aurora Navarro Notify project coordinator	Francisco Vidal Head of the Congenital Coagulopathies Laboratory	Eva Alonso Head of the Blood Bank and Breast Milk Bank

Scientific management of the Biobank is led by Joaquim Delgadillo Duarte, Scientific Director at the BST, and Laura Ruiz Jacob, coordinator, handles all the administrative processes related to sample transfer.

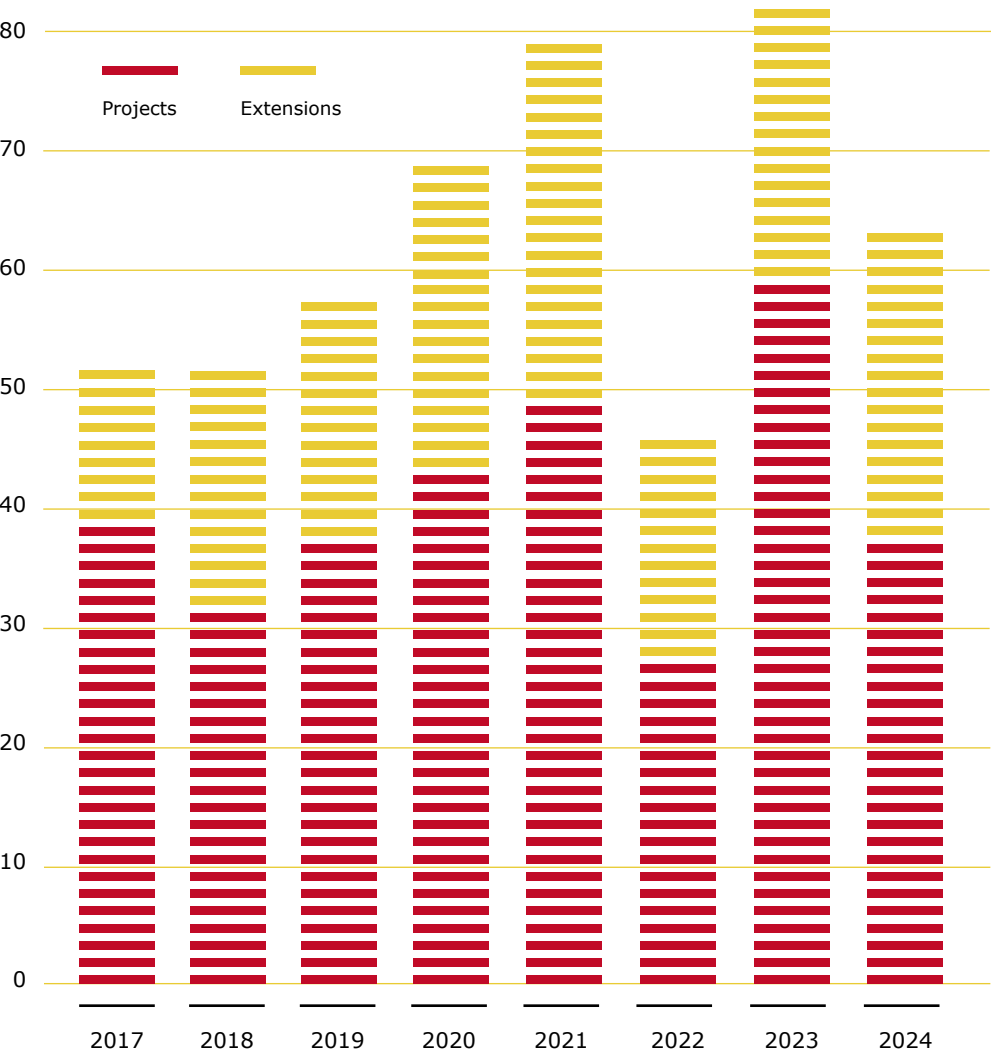
The BST supply area and its different territorial centres are responsible for the supply of samples to all BST services and departments.



Active projects

Thirty-seven new projects have been approved for sample assignment and another twenty-six projects have had approval extended.

Here is a list of the number of projects and extensions since 2017:



Agreements for the transfer of biological samples are regulated through memorandums of understanding (MoU) with research institutions, universities or companies in the health sector.

These come from the different BST services shown below, where the number of units delivered is also expressed.

The samples come from the different services of the BST

118,575
samples
were
supplied

BLOOD COMPONENT PROCESSING LABORATORY	TRANSFUSION SAFETY LABORATORY	CELL THERAPY SERVICE
3,111	113,908	146
TISSUE BANK	MILK BANK	INTERNAL DONATIONS
34	25	1.351

Collaboration
agreements

During 2024, 31 MTA's have been signed with the following entities:

MTA's:
Genomic Regulation Center Foundation, Catalan Institute of Nanoscience and Nanotechnology Foundation UAB Campus, Institute for Biomedical Research Foundation-IRB BARCELONA, Hospital del Mar Medical Research Institute Foundation, Private Foundation AIDS Research Institute -IRSI CAIXA, Foundation for Biomedical Research of Córdoba, Cancer Research Foundation of the University of Salamanca, Hospital Clínic Provincial de Barcelona-HCB, Institute for Bioengineering of Catalonia, Josep Carreras Leukaemia Research Institute, University of Granada, University of Barcelona, Universitat Internacional de Catalunya, Vall d'Hebron Institute of Oncology, Vall d'Hebron Research Institute

ECONOMIC ACTIVITY
During 2024 the Biobank has invoiced 341.775,09 €



4.

Education at the BST

The mission of the BST education area is to promote and collaborate in the training of Health and Life Sciences students and professionals, particularly in the field of transfusion medicine and cell and tissue therapy.

It develops its own teaching and training services and acts as a reference centre for professionals in the sector at a national and international level.

It also manages the MoUs and coordinates and plans residents' training and the training stays of external and internal professionals, as well as handling student internships in the BST's different departments. It is also responsible for the induction all these professionals and students when they arrive at our main centre's facilities.

The education area engages in different activities, which can be seen in detail in the special 2024 report, aimed at different profile groups:

4.1.

Number of students in internships

One hundred and twelve students in practice joined us at the BST headquarters, the specialities being:

Six students were hired as interns by the BST

Number of students in practice			
	F	M	Total
Masters and postgraduate students	7	3	10
Nursing students	26	3	29
Students with degrees in scientific fields	7	2	9
CFGS students	35	28	63
CFGM students	0	1	1
Total students in practice	75	37	112
Total interns hired by the BST	5	1	6

4.2.

Number of residents

Thirty-seven residents

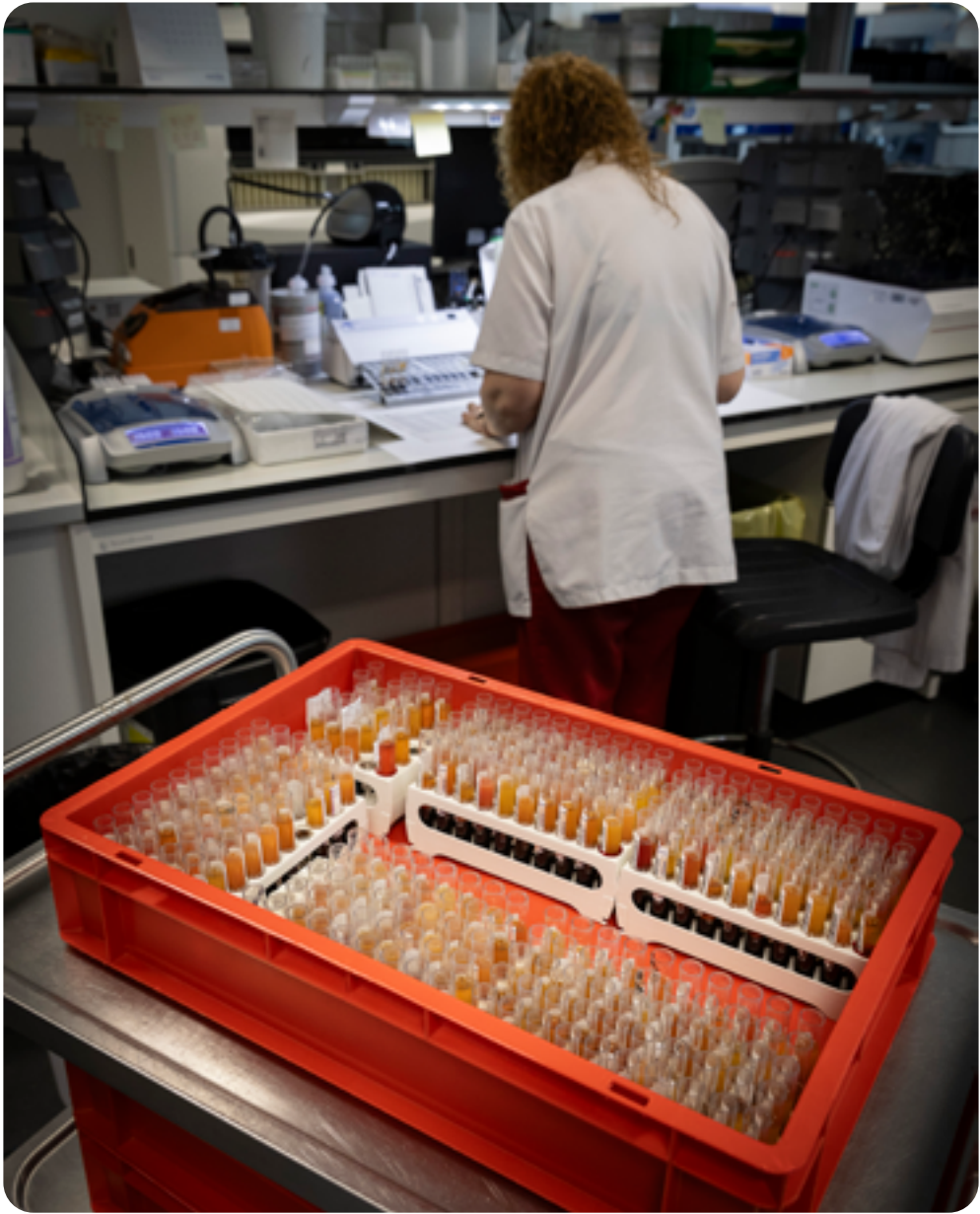
Number of residents			
	F	M	Total
Hematology and Hemotherapy Residents	23	11	34
Immunology Residents	0	2	2
Clinical analyses Residents	0	1	1
Total residents	23	14	37

4.3.

Number of professionals in stays

Nineteen professionals in training stays

Number of professionals on stays			
	F	M	Total
Professionals from Catalonia and the rest of Spain	3	0	3
Professionals from the EU	1	0	1
Professionals from non-EU countries	3	2	5
BST professionals (internal rotations)	8	2	10
Total professionals in training stays	15	4	19



Chair in transfusion medicine and cell and tissue therapy (cmt3)

The Cmt3 has continued the same line of teaching activity:

- Breastfeeding and Human Milk Donation program with 24 students enrolled.

Coordinated by Carlos González and Luis Ruiz, Vanessa Pleguezuelos and Marina Vilarmau, with the collaboration of the Universitat Autònoma de Barcelona and the Universitat de Manresa.

Coordinators



Carlos Gonzalez
Pediatric Specialist

He is the founder and president of ACPAM (Catalan Association for Breastfeeding) since 1991. From this association, he has directed and imparted teaching in more than 100 courses on breastfeeding for health professionals.

Author of the books: My child does not eat, Kiss me a lot, A gift for life or growing together.



Marina Vilarmau
Pedagogue, specialist in Training Projects in the Area of Health Sciences.

Master's degree in clinical simulation methodology (UVic-UCC). Master's degree in sexual difference studies (UB). With more than 10 years dedicated to the design and direction of training projects in the area of health and education sciences.



Luis Ruiz
Pediatric Specialist

Pediatrician. Trained in maternal and child health (MSc) University of London and Diploma in Senology at the University of Barcelona. Pediatrician in Primary Care at the CAP 17 de Setembre in El Prat de Llobregat and private consultation in Breastfeeding at the Quirón-Dexeus i Gavà Family Health Clinic. Former national coordinator of the IHAN and Emergency Pediatrician at the Children's Hospital of Barcelona.



Vanessa Pleguezuelos
Biologist specializing in Biosanitary

Head of the Human Milk Bank, Blood and Tissue Bank. Master's degree in scientific, medical and environmental communication. Master's degree in TAC training, Learning management and Innovation in Organizations. Certificate of Pedagogical Skills. Professor of breastfeeding courses at the Public Health Agency, the College of Nursing and the University of Barcelona.

- Fifth edition of the University Master's Degree in Transfusion Medicine and Cellular and Tissue Therapies, in which 24 students from all over enrolled.

Coordinated by Joaquim Vives Armengol (Universitat Autònoma de Barcelona) and Jaap Jan Zwaginga (Leiden University Medical Center).





Some of the projects carried out at the BST during 2024 were funded by the following institutions

