



BIO GIPUZKOA

EUSKAL
OSASUN
IKERKUNTZA
INVESTIGACIÓN
VASCA
EN SALUD
BASQUE
HEALTH
RESEARCH

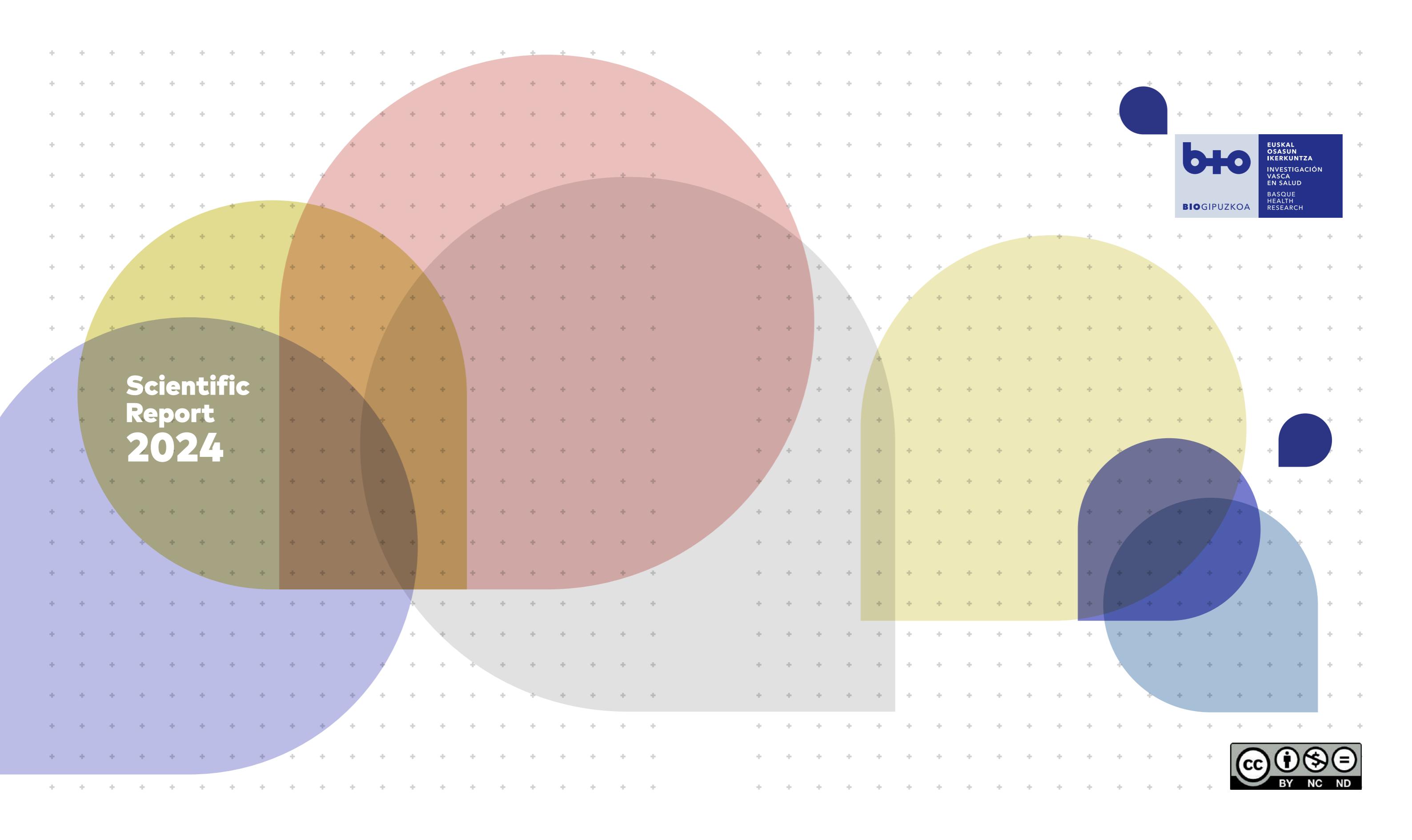
Scientific Report 2024



Osakidetza



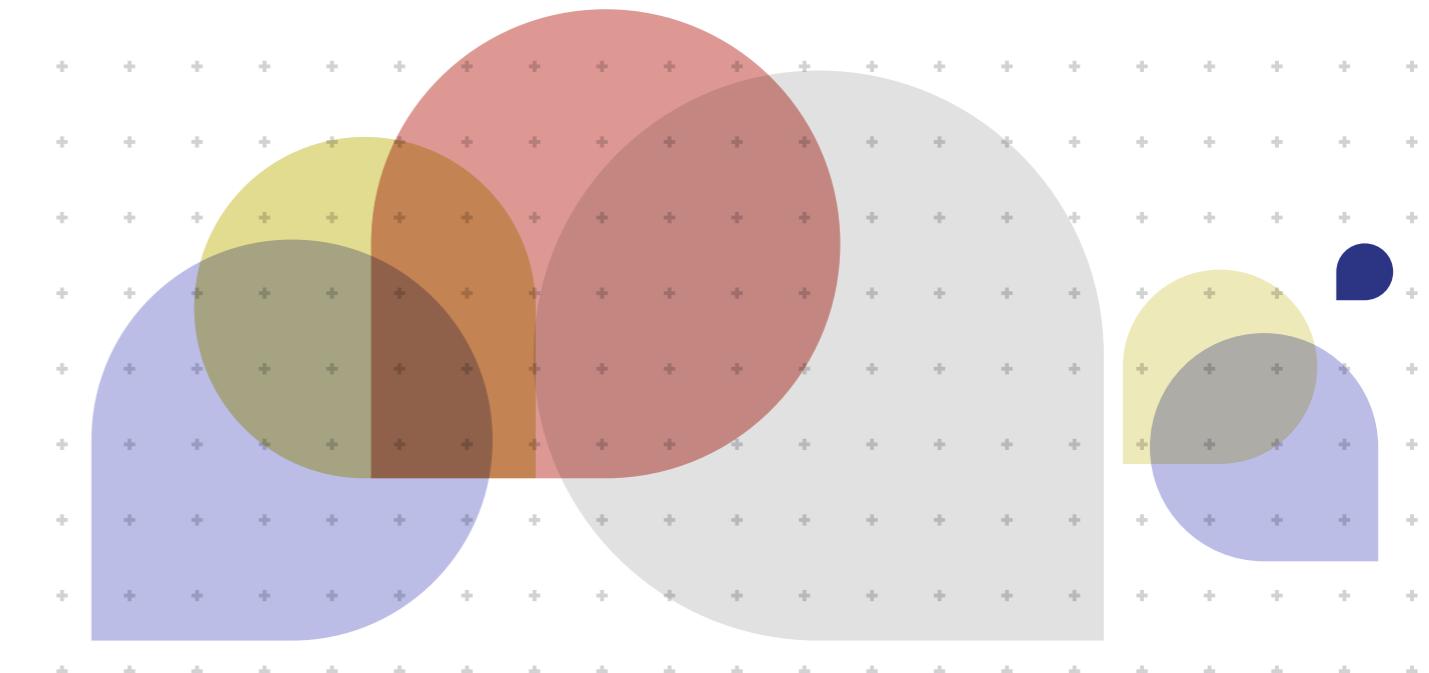
**EUSKO JAURLARITZA
GOBIERNO VASCO**



Scientific Report 2024



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Presentation



**Itziar Vergara
Michelmorena**
Scientific
Management

*Gure gogoa ez bedi arren
kantu honekin akaba,
gure ekintza izan dadila
gure hitzaren alaba.
Egun batetan esan dezagun
ez "hala biz" bai "hala da",
nekea eta lana dirate
zorionaren aldaba.*

Guretzat, Gabriel Aresti

It is always a challenge to strike the right tone in this introduction to the annual report. It must be concise yet capable of highlighting the main milestones achieved during the year, which is no easy task, especially in a centre such as ours where each area, unit or platform progresses in its field of work at its own pace and with distinct strategies. However, this apparent variability has a shared foundation, alluded to in the verses of Gabriel Aresti's poem *Guretzat*. It is about the drive and the commitment to do our work well.

In 2024, from a scientific perspective, it is important to highlight not only certain activity figures but, above all, our impact. The Neurosciences Area is leading the SEED-ALS project, a major multicentre initiative focused on the collection and integrated analysis of patient data and biological samples, with the aim of understanding the complex mechanisms of ALS. The Liver and Gastrointestinal Diseases Area has established the Master Observational Trial in cholangiocarcinoma, a European registry conceived and led by researchers at our centre which has already become an international benchmark for clinical and translational research in hepatobiliary oncology. Overall, there has been growing scientific output, not only in volume and quality but especially in terms of impact, thanks to open access

publishing, international reach and leadership.

In the field of oncology, this year has marked the beginning of our participation in the Comprehensive Cancer Centres programme as a pilot centre, as well as in the Comprehensive Cancer Infrastructures programme, which will help to showcase the capabilities and infrastructure for cancer care and research in the Basque Country. In this area, the JACIE accreditation awarded to the Advanced Therapies Unit at Donostia University Hospital is an important recognition of our research and care capabilities with CAR T-cell therapies.

The impact of research activity on the public and the wider population is becoming increasingly significant for translational research centres such as ours. We are working to develop technical capacities and, more importantly, a theoretical and methodological framework that will allow us to capture this impact. This need is shared within the Alliance of Accredited Institutes, where we co-lead the working group addressing this issue. We hope its findings will bring about substantive changes to how health research is measured and assessed.

A key factor in our ability to measure this impact lies in how we use health-related data. The Basque Country offers unbeatable opportunities in this regard through its unified electronic health record, and to harness this, we are equipping ourselves with the material and human resources needed to ensure its proper use and its integration with data from research activity. There is no doubt about the essential importance of using clinical data appropriately. The complexity of human health means

that progress is impossible without an integrated approach to clinical care and research. Within this vision, Health Research Institutes are a key component, owing to our structure and technical capabilities.

One of the milestones in the field of data and digitalisation, particularly concerning our computing capacity, is the use of the Hyperion infrastructure made available by the Donostia International Physics Center to the entire science and technology network. The opportunity to share infrastructure, procedures and strategy with nearby research and technology centres has always been a defining feature of our identity as an institute. This approach now resonates more strongly and is being strengthened in this new phase of interdepartmental collaboration.

Another essential element in creating impact is public involvement. This year we have laid the foundations for a public participation plan covering all areas of the institute. Working in partnership with non-scientific actors will undoubtedly enhance our ability to transform patient care.

These and many other actions described in this report reflect the daily work of the institute's staff, professionals from a wide range of backgrounds who—through their technical expertise—contribute their effort and knowledge to ensure that the advances made in science reach society, and patients in particular.

Shared work and effort as a path to fulfilment.

Organisation



The Biogipuzkoa HRI has the following organisational structure:

- **General Assembly**
- **Executive Committee**
- **Management Committee**
 - Scientific Management**
Dr Itziar Vergara Mitxelorena
 - Management Directorate**
Dr Arantza Abad Alba
 - Human Resources and Finance Directorate**
Amaia Pedruzo Suso
 - Scientific Coordination**
Dr Olatz Arrizabalaga Garde
- **Extended Management Committee**
 - Clinical Research Unit**
Dr Ioana Riaño Fernández
 - Platforms and Infrastructure**
Dr David Otaegi Bichot
 - Project Unit**
Marisabel Arzamendi Sesé
- **External Scientific Committee (ESC)**
- **Internal Scientific Committee (ISC)**

Organisation

To carry out its activities, the Biogipuzkoa HRI has **nine R&D&I Support Units** staffed by qualified personnel responsible for the institute's management functions:

- 1. Economic and Administrative Unit**
- 2. Purchasing and Public Procurement Unit**
- 3. Human Resources (HR) Unit**
- 4. Project Unit**
- 5. Innovation Support Unit (ISU)**
- 6. Evaluation and Quality Unit**
- 7. Scientific Coordination Unit**
- 8. Communication Unit**
- 9. Scientific Outreach and Culture Unit**

In addition, the Biogipuzkoa HRI has **three R&D&I Support Services** staffed by professionals qualified to provide scientific advising services, primarily in research methodology, each coordinated by a designated manager:

- 1. Methodological Support Service**
- 2. Clinical Epidemiology Service**
- 3. Primary Care Service and IHOS**

Lastly, the Biogipuzkoa HRI has **nine R&D&I Support Platforms** staffed with qualified personnel and equipped with the necessary infrastructure for specialised techniques. These platforms offer technical and scientific support to the institute's researchers, as well as to research centres, technology centres and external companies. The aim of these platforms is to promote biomedical research by providing scientific infrastructure and qualified personnel:

- 1. Animal Facility and Experimental Operating Theatre (PAQE)**
- 2. Computational Biology**
- 3. Cell Cultures**
- 4. Molecular Diagnosis**
- 5. Genomics**
- 6. Histology**
- 7. Multidisciplinary 3D Printing Platform (3DPP)**
- 8. Clinical Research (CRP)**
- 9. Basque Biobank Node**

Platforms

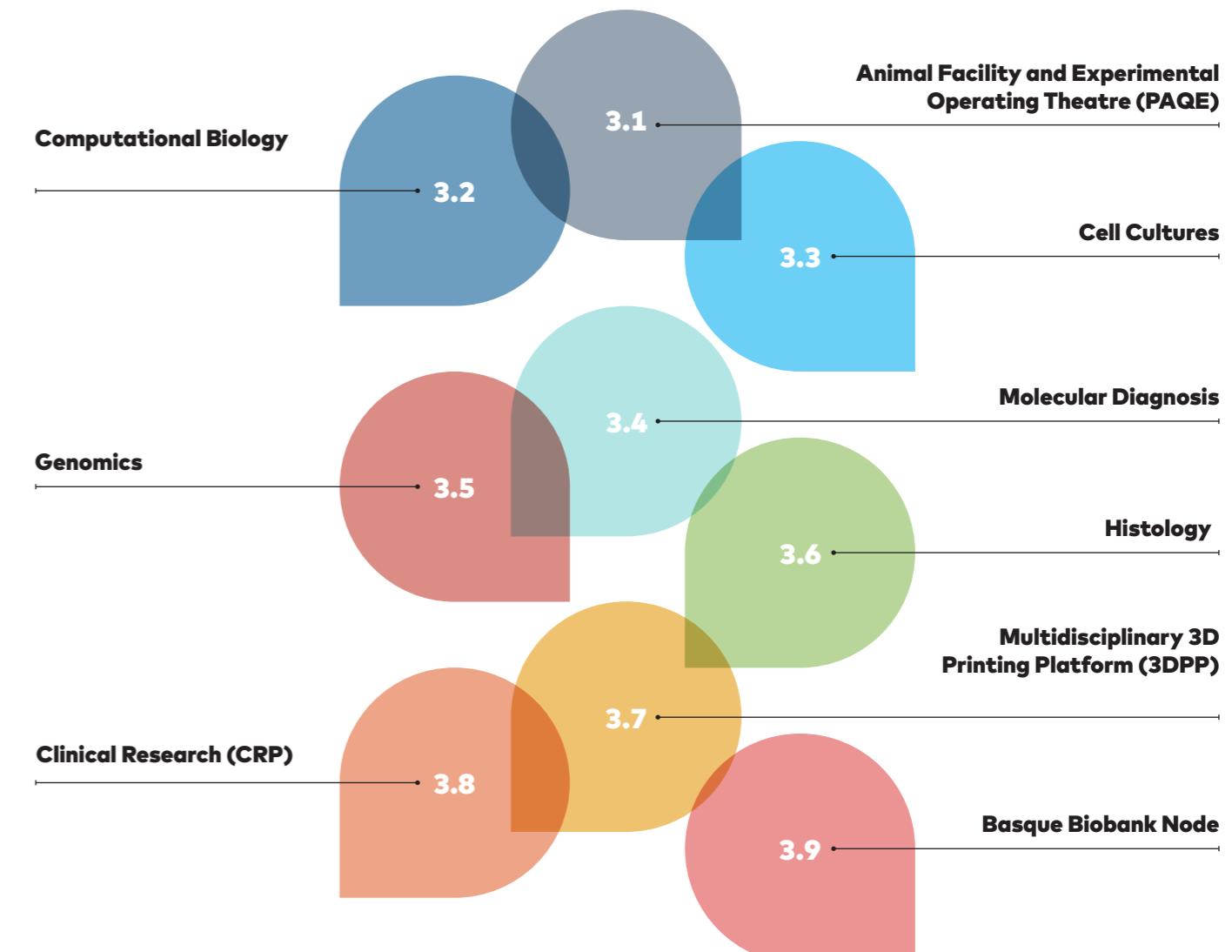




The purpose of the **nine R&D&I Support Platforms** at the **Biogipuzkoa HRI** is to boost biomedical research by offering users scientific infrastructure and expert personnel in highly complex techniques or those requiring costly or sophisticated equipment.

A total of 40 professionals make up the R&D&I Support Platforms, some of whom work across multiple platforms.

Platforms



Animal Facility and Experimental Operating Theatre

This facility provides a modern environment for working with animals, ensuring full compliance at all times with Royal Decree 53/2013 of 1 February.

The platform is staffed by six professionals

In 2024, the Animal Facility and Experimental Operating Theatre remains part of the ISCIII Biobanks and Biomodels Platform and has joined the *Transparency Agreement on the Use of Animals in Scientific Experimentation* in Spain, promoted by the Spanish Confederation of Scientific Societies (COSCE). The aim is to establish communication channels between the scientific community and society to explain when, how and why animals are used in research, and to highlight the benefits of this practice.

Services include advising and support in experimental techniques, assistance in designing R&D&I projects, ensuring animal welfare, running training courses on various techniques and organising events for continuing education.

The platform also coordinates the teaching activity of Donostialdea IHO.

3.1



Activity Indicators

- 19 R&D&I projects reviewed by the Animal Experimentation Ethics Committee (AEEC)
- 33 R&D&I projects reviewed by the Authorised Body (AB)
- 35 services provided in 2024 (31 internal and 4 external)
- 60 training activities delivered in 2024 (23 on large animals, 27 on small animals and 10 on anatomical specimens)
- 10 courses organised in 2024 (3 with large animals, 2 with small animals and 5 with specimens)

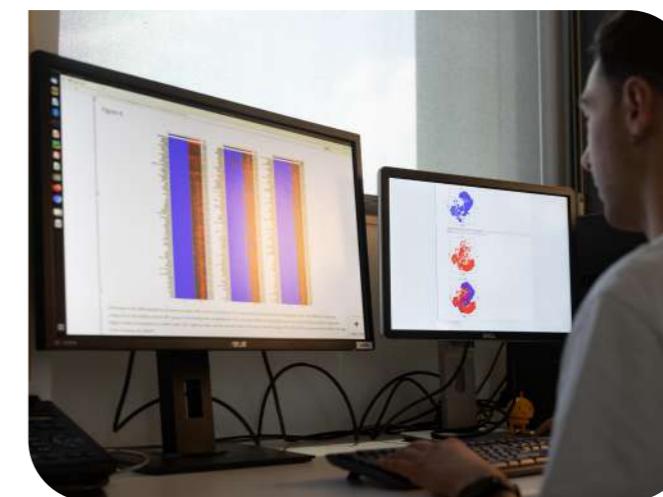
plataforma.animalario@bio-gipuzkoa.eus

Computational Biology

The platform offers a portfolio of services in data processing for projects in the field of personalised precision medicine.

During this year, the platform has been undergoing review and reformulation.

3.2



Cell Cultures

It provides technical and scientific assistance in areas such as cell cultures (cell amplification, cryopreservation, immunofluorescence, etc.), fluorescence microscopy and flow cytometry.

The platform is staffed by
three people

The Microscopy and Flow Cytometry Units not only support Biogipuzkoa researchers, but are also positioning themselves to serve biotech companies in the region.

It is certified under the ISO 9001:2015 Quality Standard.

Activity Indicators

- 128 users accessed the platform's infrastructure in 2024



plataforma.
cultivoscelulares@
bio-gipuzkoa.eus

3.3

Molecular Diagnosis

It conducts a range of molecular studies on hereditary diseases, primarily within the Neuromuscular Diseases Area.

The platform is staffed by
three people

Since 2000, it has been a leading centre nationally for the genetic diagnosis of facioscapulohumeral muscular dystrophy (FSHD), receiving samples not only from Spanish hospitals and centres but also from international institutions.

It participates in FSHD-specific quality assurance schemes organised by the European Molecular Genetics Quality Network (EMQN).

It is certified under the ISO 9001:2015 Quality Standard.

Activity Indicators

- 365 molecular diagnoses were carried out in 2024



3.4

plataforma.
diagnosticomolecular@
bio-gipuzkoa.eus

3.5

Genomics

It provides researchers with advising services and tools to implement the most suitable genomics and transcriptomics techniques for their biological studies.

The platform is staffed by three people

Available equipment:

- Sanger sequencing: SeqStudio (Applied Biosystems)
- Single cell: Rhapsody system with scanner (BD Bioscience)
- Real-time thermocyclers (LC96, CFX96, CFX384, CFX384 Opus)
- Digital PCR (QX200 Bio-Rad)
- Microplate readers: Haloled96 (Technical Control)
- Magpix plate readers (Luminex technology)
- Typhoon Biomolecular Imager (Amersham)
- Nucleotide extraction (Maxwell, Promega)
- Quantification and quality control of nucleotides (Nanodrop, Qubit, TapeStation 4150 and Quiagene)

NGS services:

- Gene panels (AmpliSeq)
- Metagenomic analysis (16S)
- RNAseq transcriptome analysis (totalRNAseq, mRNAseq, smRNAseq)
- Single-cell sequencing
- Data analysis

It is certified under the ISO 9001:2015 Quality Standard.

Activity Indicators

- 46 R&D&I projects have benefited from the platform's services.

plataforma.genomica@
bio-gipuzkoa.eus



Histology

It offers a wide range of histopathological techniques:

- Tissue processing
- Paraffin and OCT embedding
- OCT block sectioning (cryostat)
- Paraffin block sectioning (microtome)
- Fixation and decalcification
- Routine and special stains
- Immunohistochemistry (including antibody optimisation)
- Immunofluorescence (including antibody optimisation)
- Organoid processing

It is certified under the ISO 9001:2015 Quality Standard.

The platform is staffed by three people



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bio-gipuzkoa.eus

Activity Indicators

- 22 internal users have requested platform services

Multidisciplinary 3D Printing Platform (3DPP)

This platform comprises two interdependent units:

- The 3D Biomodelling Unit, based at Donostialdea IHO, offers services in disease modelling (primarily tumours) to improve surgical approaches and operating times, as well as to customise prosthetic implants.
- The 3D Biofabrication Unit, based on the institute's second floor, offers services in the bioprinting of cells and tissues for use in regenerative medicine.

It is part of the Support Platform for R&D&I in Biomedicine and Health Sciences of Biobanks and Biomodels at the Carlos III Health Institute (PISCIIBB).

Staff from the 3DPP Platform served as jury members for 3D-related projects submitted to the "Donostia Innovation Challenge 2024" organised by Fomento San Sebastián.

In 2024, the 3DPP platform, which is part of ISCIII's HuB3D, also took part in the "3rd Conference of the ISCIII Platform of Biobanks and Biomodels" in Lleida.

- 24 3D models produced by the 3D Biomodelling Unit

- 4 3D models produced by the 3D Biofabrication Unit

- Participation in technology transfer initiatives to support and enhance the competitiveness of innovative business projects ("Bono Fomento" funding instrument): 1

- Participation in innovation projects at Donostialdea IHO (bottom-up): 1

3.6

3.7

PLATAFORMA ISCIII
BIOBANCOS Y
BIOMODELOS



plataforma.biomodelado3d@
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Clinical Research

Scientific and Technical Area

This area is made up of ten professionals: One deputy to the unit manager, two clinical project managers, two monitors, one methodologist, one clinical trial assistant (CTA) and three study coordinators.

Nursing and Biological Samples Area:

this area is made up of four professionals – three with a nursing profile and one biotechnologist responsible for managing biological samples.

Management Area

This area comprises three professionals with legal, financial and administrative management backgrounds.

The Clinical Research Platform (CRP) supports all clinical research conducted in healthcare centres belonging to the Basque Health Service (Osakidetza-SVS) in Gipuzkoa, including six hospitals and 56 primary care centres.

It also provides support to national healthcare centres for any multicentre studies that are promoted or supported.

The CRP consists of three interrelated areas, each staffed by multidisciplinary professionals who provide scientific and technical support for clinical research:

- *Scientific and Technical Area:* provides methodological and scientific support for the development of clinical research projects, including advising on study design, protocols, informed consent, technical and operational aspects, regulatory and legal compliance, medicinal product and medical device management, monitoring, planning and execution of clinical studies. The study coordinator role was introduced to provide further support to researchers in conducting CTs.
- *Nursing and Biological Samples Area:* responsible for tasks related to nursing as well as the management, collection, processing and shipment of biological samples for clinical research.
- *Management Area:* oversees the full

Activity Indicators

- Number of clinical studies supported by the management area (distinguishing between clinical trials [CT] and observational studies [OS]): 314 (166 CTs, 76 OS, 72 other CTs)

- Number of projects supported with scientific and technical advising (total CTs = 131): CTs with medicinal products: 72 Studies with medical devices (MDs) (clinical research with MDs and CTs with MDs): 11 and other CTs = 48)

- Number of projects supported in the area of nursing and biological samples (CTs and OS): 73
- 483 patients donated biological samples for clinical studies

management and implementation of all clinical studies conducted in Osakidetza-SVS healthcare centres in Gipuzkoa.

It is certified under the ISO 9001:2015 Quality Standard.

• 5,556 biological samples were managed

- 13 clinical studies managed through networks: 12 through SCReN and one through ECRIN

- Number of promoted clinical studies Number of participating centres managed: 7 studies sponsored

- 7 clinical trials (CTs)
 - 3 CTs with medicinal products (MPs)
 - 2 CTs without MPs or MDs

- 2 observational studies

- 19 participating hospitals managed at the national level

3.8



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3.9

Basque Biobank Node of the Biogipuzkoa HRI

The Basque Biobank is a structure that holds biological samples associated with clinical data. These are collected, processed, stored and managed to high quality standards and made available on a not-for-profit basis to the scientific community to promote biomedical research.

The platform is staffed by four people.

It has a decentralised network structure with nodes located in the main Osakidetza-SVS centres.

The Basque Biobank Node at the Biogipuzkoa HRI consists of two units: tissue and DNA.

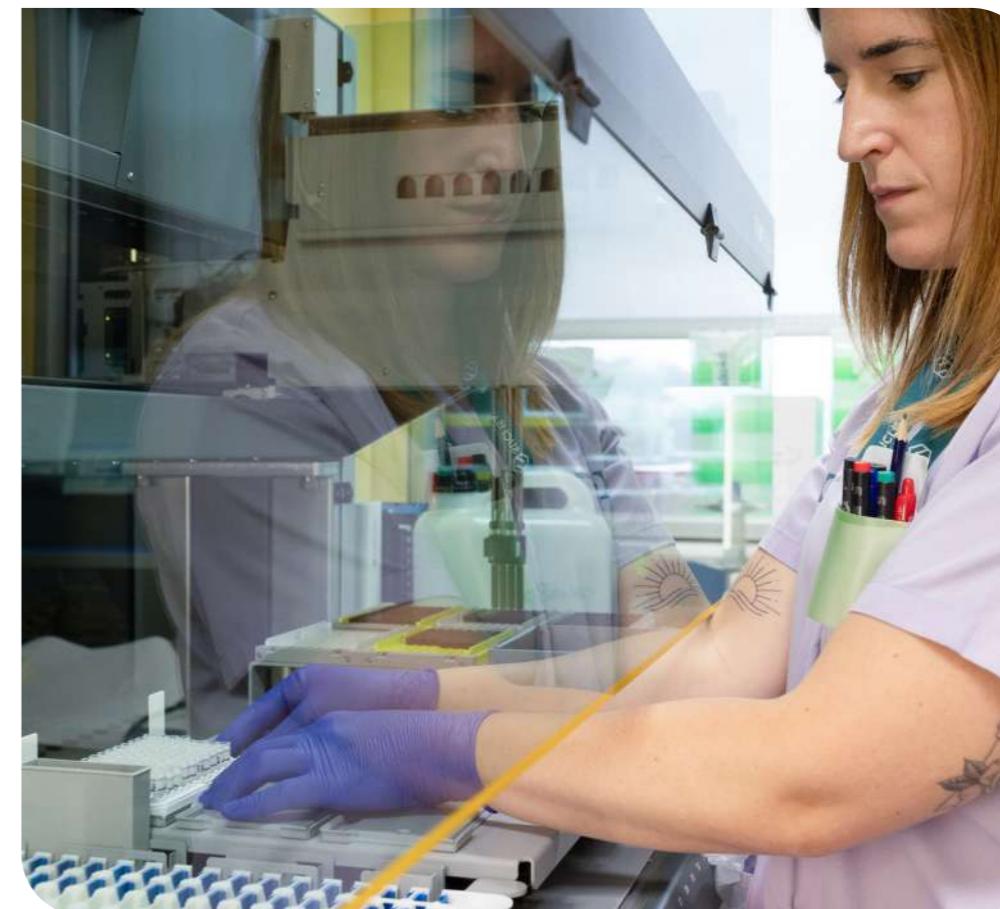
The following services are offered:

- Collection, storage and delivery of biological samples prospectively obtained in accordance with the criteria of an R&D&I project
- Creation of strategic sample collections from diagnostic surpluses for future projects
- Provision of stored samples from the Basque Biobank to R&D&I projects All types of samples are stored, primarily oncological and neurological tissue and blood-derived samples from various diseases, for the extraction of products such as serum, plasma, DNA, RNA, cells, etc.
- Advising on all aspects related to the collection, processing and provision of biological samples (ethical and legal framework)

The Basque Biobank has a real-time updated catalogue of available samples and data organised by pathology. To access samples, researchers must have a research project approved by an ethics committee and submit the relevant request.

Activity Indicators

- The node managed 505,934 samples, of which 50,343 were collected in 2024, either as diagnostic surpluses or within research projects, with the prior informed consent of the donor
- It has served more than 150 depositories Samples (blood, tissue, urine, cerebrospinal fluid, saliva, etc.) mainly relate to oncological, neurological and infectious diseases.
- 111 sample requests associated with R&D&I projects were processed, 27 of which were received in 2024



It is part of the R&D&I Support Platform in Biomedicine and Health Sciences of Biobanks and Biomodels at the Carlos III Health Institute.

- More than 30,000 samples from various pathologies have been processed, notably those related to multiple sclerosis, coeliac disease, lymphomas, HIV, sleep apnoea and ALS, as well as population-based collections: INMA Cohort, IMPaCT Cohort and Frail Elderly Cohort.

75% of the samples supplied were linked to R&D&I projects requiring prospectively organised collection.

Main Milestones of the Biogipuzkoa HRI



01. START OF THE IMPaCT COHORT

With the aim of improving understanding of the factors that influence or constrain health, ISCIII launched the IMPaCT cohort. In Gipuzkoa,

the cohort is coordinated by the Primary Care Group at Biogipuzkoa, with the objective of recruiting 4,000 participants over five years.



02. FOUR NEW RESEARCH GROUPS AT BIOGIPUZKOA

During 2024, four new groups were established at Biogipuzkoa. In the Neurosciences Area, the Stroke and NeuroRNA Groups were created, and in the Liver and

Gastrointestinal Diseases Area, the Liver Immuno-Oncology Group and the Metabolism and Cancer Group were established.



03. SMP360 PRESENTED AT THE LAUNCH OF THE NATIONAL CHAPTER OF CoARA

Dr Olatz Arrizabalaga, Scientific Coordinator at Biogipuzkoa, presented the Scientific Monitoring Plan 360 (SMP360) tool, developed in-

house and used for evaluating research groups, at the launch event of the National Chapter of CoARA, held at the Ministry of Science.



04. MARIA CAFFAREL RECEIVES THE EMAKUMEKINN AWARD

Maria Caffarel, co-leader of the Breast Cancer Group, received the EMAKUMEKINN award in the category "women researchers promoting STEAM

vocations". Organised by Fomento San Sebastián, these awards recognise women who contribute to innovation in the city.



05. SPIN-OFF OPTEC4LIFE LAUNCHED

The collaborative efforts between the Obstetrics and Gynaecology Group and CIC-nanoGUNE led to the creation of the spin-off Optec4Life. This company is developing a non-invasive

medical monitoring device for diagnosing perinatal asphyxia during childbirth, aimed at preventing unnecessary caesarean sections and improving perinatal outcomes.



06. BIOGIPUZKOA REACCREDITED AS USC+I

Having first received accreditation in 2021, Biogipuzkoa has once again been recognised as a Unit for Scientific Culture and

Innovation (USC+I) by the Spanish Foundation for Science and Technology, in recognition of its work promoting scientific culture.



07. BIOGIPUZKOA AND C.D. FORTUNA LAUNCH THE TAUPADEKINN STUDY

TAUPADEKINN, a study promoted by Biogipuzkoa and C.D. Fortuna, analysed the performance of runners and identified associated factors.

Participants in the 2024 Behobia/San Sebastián race who expressed interest were invited to participate in the study.



08. THE EUROPEAN CARAMEL PROJECT BEGINS

The Horizon Europe CARAMEL project, in which Biogipuzkoa is a partner, began in December at the headquarters of project coordinator Vicomtech. With

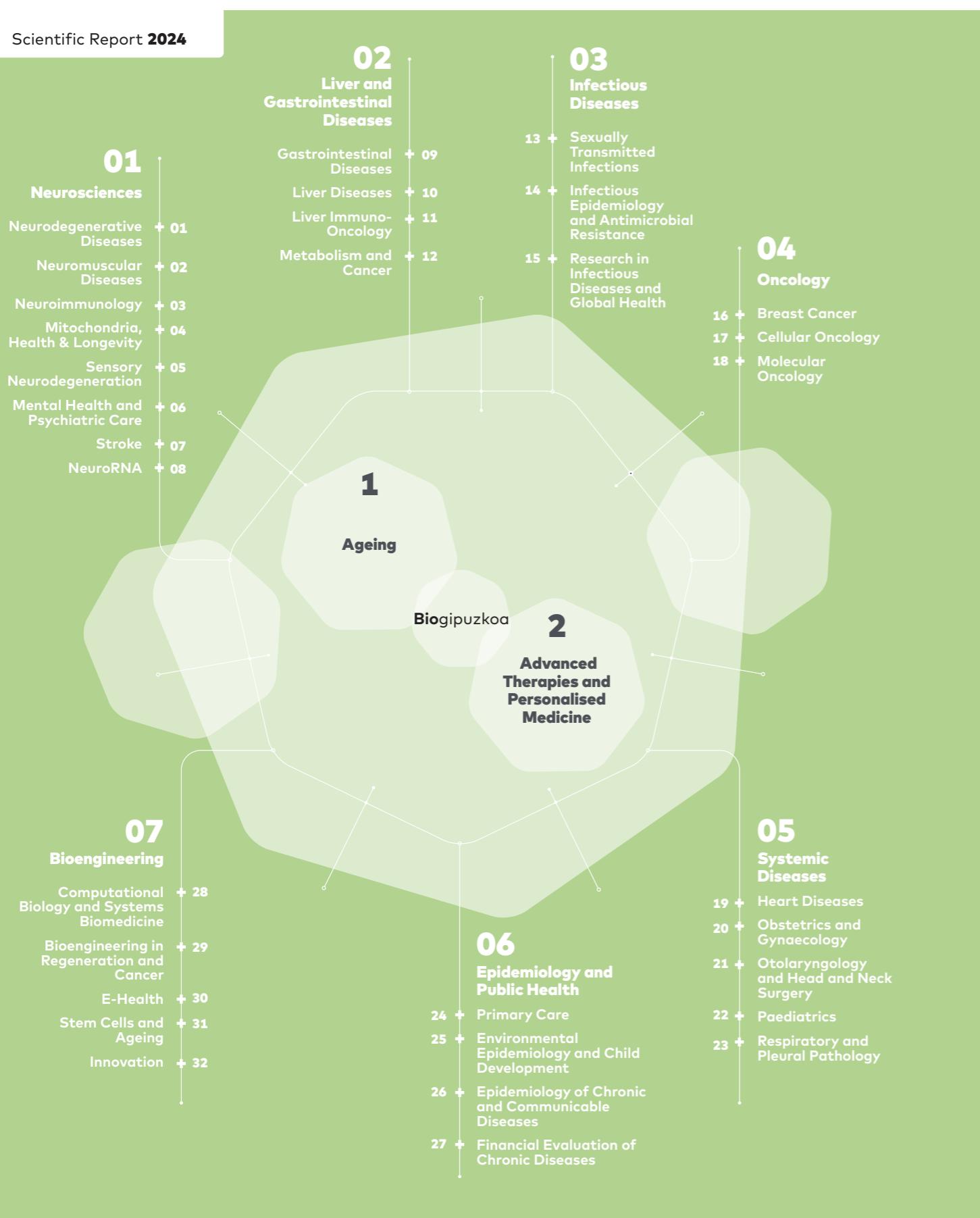
25 partners from 11 countries, the aim is to improve the prevention of cardiovascular disease in women aged 40 to 60.



The Biogipuzkoa HRI in figures

5





Resources

Research staff: annual evolution

147

Research staff
fully or partially
funded through
competitive calls
and networks

The Biogipuzkoa HRI has formally adopted the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (C&C).

By category, the Biogipuzkoa HRI's Research Groups are made up of 481 researchers. Of these, 426 correspond to the R1, R2, R3 and R4 profiles according to the European EURAXESS classification scheme. The remaining 55 members of the research groups are considered support staff.

| | 2020 | 2021 | 2022 | 2023 | 2024 | | | | |
|---|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|--------------|
| | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♂ |
| R1 PhD Student in training | 24 (23%) | 81 (77%) | 23 (27%) | 63 (73%) | 22 (23%) | 74 (77%) | 24 (24%) | 75 (76%) | 24 (28%) |
| R2 Postdoctoral Researcher | 87 (44%) | 112 (56%) | 85 (43%) | 112 (57%) | 87 (41%) | 126 (59%) | 99 (39%) | 153 (61%) | 109 (40%) |
| R3 Senior Researcher | 10 (36%) | 18 (64%) | 8 (35%) | 15 (65%) | 8 (33%) | 16 (67%) | 9 (36%) | 16 (64%) | 8 (36%) |
| R4 Area Coordination Group Manager | 26 (76%) | 8 (24%) | 24 (63%) | 14 (37%) | 24 (62%) | 15 (38%) | 26 (63%) | 15 (37%) | 24 (53%) |
| | | | | | | | | | 21 (47%) |

2.1

Administrative and Management Directorate

30

R&D&I Support Units

♂ 6 ♀ 24

7

Common Support Services

♂ 1 ♀ 6

48

R&D&I Support Platforms

♂ 8 ♀ 40

The R&D&I Support Units are made up of 30 people in total.

- Economic and Administrative Unit
- Purchasing and Public Procurement Unit
- Human Resources (HR) Unit
- Projects Unit
- Innovation Support Unit
- Evaluation and Quality Unit
- Scientific Coordination Unit
- Communication Unit
- Scientific Outreach and Culture Unit

A total of 55 professionals work across the R&D&I support platforms and the three common support services, some of whom also belong to the Institute's research groups.

Support Services:

- Methodological Support Service
- Clinical Epidemiology Service
- Primary Care Service and IHOs

Platforms:

- Animal Facility and Experimental Operating Theatre
- Computational Biology
- Cell Cultures
- Molecular Diagnosis
- Genomics
- Histology
- Multidisciplinary 3D Printing Platform
- Clinical Research
- Basque Biobank Node

Research Activity

Number of active projects (competitive and non-competitive) Projects and Human Resources

12,179,210.00 €

Funding obtained through competitive calls

2.2

| Research Area | Active projects in 2024 | | Projects funded through public calls at the national and/or international level | | |
|-------------------------------------|-------------------------|------------------------|---|--------------------------------|-----------|
| | Projects | Principal investigator | Projects | Principal project investigator | |
| | ♂ | ♀ | | | |
| Neurosciences | 63 | 10 | 14 | 26 | 15 |
| Liver and Gastrointestinal Diseases | 30 | 4 | 3 | 7 | 4 |
| Infectious Diseases | 3 | 3 | 0 | 1 | 1 |
| Oncology | 39 | 4 | 10 | 11 | 6 |
| Systemic Diseases | 13 | 4 | 6 | 1 | 1 |
| Epidemiology and Public Health | 33 | 4 | 11 | 17 | 8 |
| Bioengineering | 46 | 3 | 6 | 20 | 6 |
| Total Prioritised Areas | 227 | 32 | 50 | 83 | 41 |
| Non-prioritised area | 25 | 12 | 13 | 2 | 2 |
| Units and Platforms | 7 | 0 | 4 | 4 | 2 |

National and International Networks

NETWORKS

National

- CIBEREHD
- CIBERESP
- CIBERFES
- CIBERNED
- CIBERSAM
- RICORS ICTUS
- RICORS Inflammatory Diseases
- RICAPPS
- TERCEL - ISCIII
- Certera Consortium
- Extrasynaptic Regulation of Neuronal Function in Neurodegenerative Diseases by Extracellular Vesicles_Red2022-134774-T.

International

- COST Action CA22125
- COST Action CA21108
- COST Action CA21164
- COST Action CA22103
- EUROGCT
- EUNETCC
- ERN - RARE LIVER
- NEURO-COOP
- European Network for the Study of Cholangiocarcinoma
- Human Brain Project
- Max Planck Queensland Center (MPQC)

INFRASTRUCTURES

National

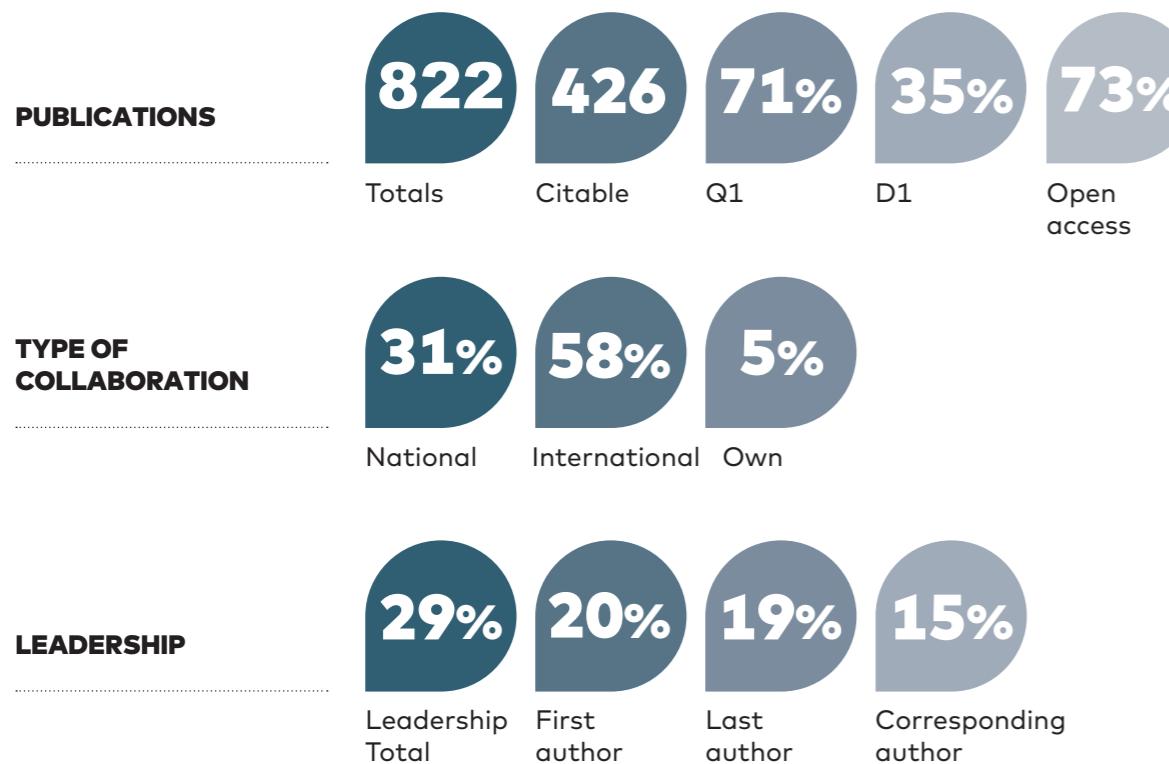
- IMPaCT

- ECRIN
- EATRIS

PLATFORMS

- ITEMAS
- BIOBANKS and BIOMODELS

Scientific Output



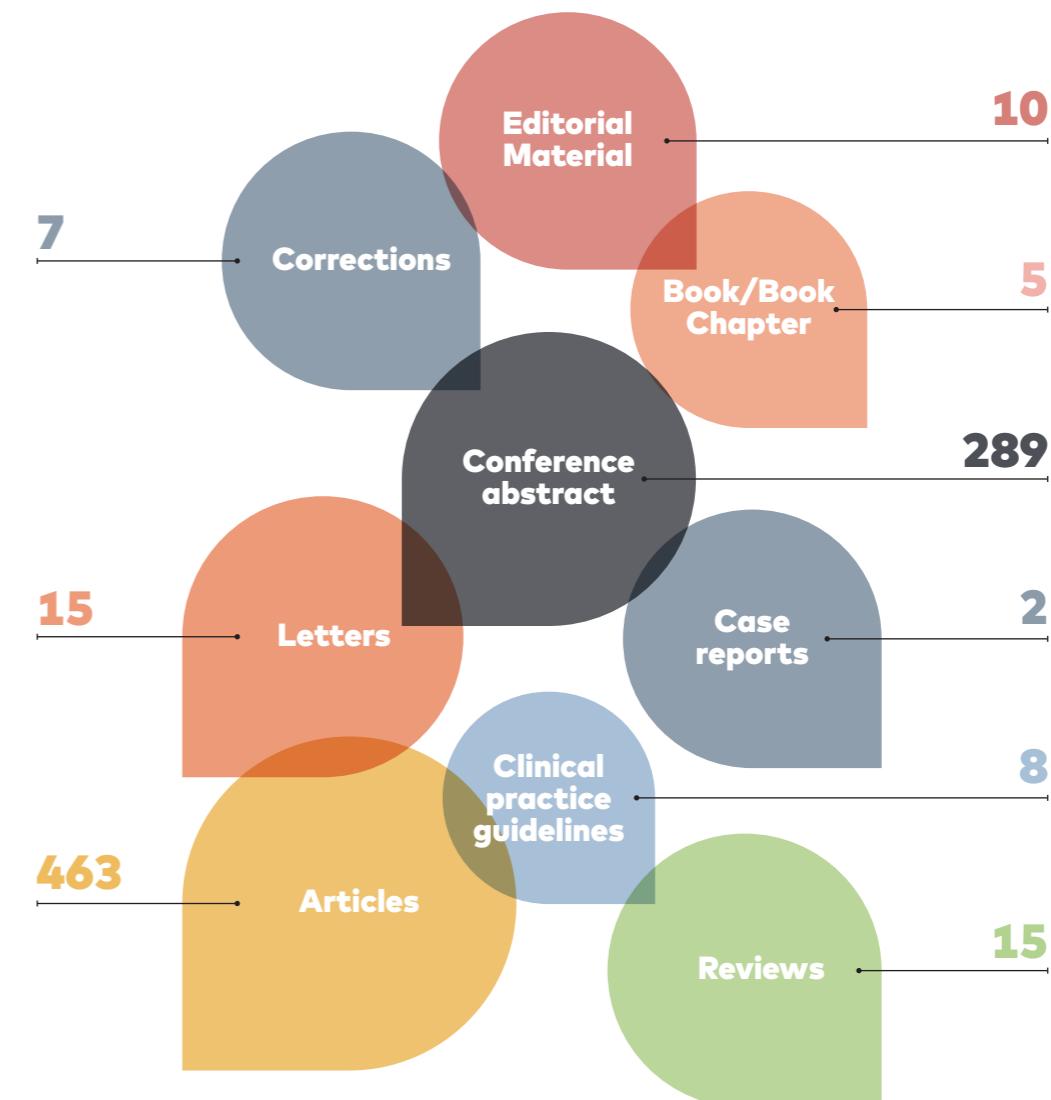
JCR 2024 data

Scientific Output List



www

Publications by category





Training

Undergraduate and postgraduate

24

Total doctoral theses

12

Internationally recognised theses

31

Final masters project

63

Final degree project



Activities for residents

- 1 Visit to Biogipuzkoa
- 2 Research during residency
- 3 Projects for participation
- 4 Award for Resident Researchers





Global Clinical Studies

Biogipuzkoa HRI

TOTAL number OF STUDIES BY SPONSOR TYPE

| | |
|-------------------------------------|------------|
| Commercial, 145 | |
| Scientific association or group, 81 | |
| Independent, 82 | |
| University, 6 | |
| Total 314 | 314 |

138

Lead investigators

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------------------|------|------|------|------|------|
| Total clinical studies | 334 | 330 | 319 | 320 | 314 |
| Clinical trials | 157 | 170 | 168 | 172 | 166 |
| Observational studies | 102 | 91 | 83 | 78 | 76 |

Number of clinical studies started in 2024

| | |
|---|-----------|
| Clinical trials with medicinal products | 24 |
| Clinical research with medical devices | 4 |
| Observational studies with medicinal products | 17 |
| Observational studies with medical devices | 0 |
| Total | 45 |

32%

Early-phase clinical trials out of all clinical trials with medicinal products

| Type of study | Total number of studies |
|--------------------|---|
| MEDICINAL PRODUCTS | PHASE I clinical trials |
| | PHASE II clinical trials |
| | PHASE III clinical trials |
| | PHASE IV clinical trials |
| | Observational studies with medicinal products |
| MEDICAL DEVICES | Clinical research with MEDICAL DEVICES |
| | Post-marketing observational studies with MEDICAL DEVICES |
| | Total 232 |



Research Areas and Groups



6.1

Neurosciences Area

NEUROSCIENCES AREA

Illnesses
Neurodegenerative Diseases

Neuromuscular Diseases

Neuroimmunology

Mitochondria, Health & Longevity

Sensory Neurodegeneration

Mental Health and Psychiatric Care

Stroke

Neurogenetics, biology and RNA therapies - NeuroRNA

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Integration of the various research groups within the area being coordinated.
- Promotion of research lines and intra-area collaboration.
- Translational application of research lines through collaboration between 2 or more groups in the area.
- Production of research results involving members of 2 or more groups in the area.
- Promotion of research careers within the area.

Most Notable Publications in 2024

EvolutionRMS investigators et al. Safety and efficacy of evobrutinib in relapsing multiple sclerosis (evolutionRMS1 and evolutionRMS2): two multicentre, randomised, double-blind, active-controlled, phase 3 trials. *Lancet Neurol.* 2024 Nov;23(11):1119-1132

Iruzubieta P, Damborenea A, loghen M, Bajew S, Fernandez Torrón R, Töpf A et al. Biallelic variants in SNUPN cause a limb girdle muscular dystrophy with myofibrillar-like features. *Brain.* 2024; 147(8):2867-2883.

Gabilondo A, Gonzalez-Pinto A, Garcia J, del Valle D, Morentin B, Iruin A. Analysis of health services use and clinical profiles in the year prior to suicide between 2010–2018, an opportunity to improve its prevention. *Spanish Journal of Psychiatry and Mental Health.* In press. Available online 18 May 2024.

Salaberria K, Ruiz Iriondo M, Pérez Fernández JI et al. Fibromyalgia and nonfibromyalgia chronic pain: Differences in psychological characteristics and treatment outcomes. *PsyCh J.* 2023; 12(2):319-329.

Alió JL, Martínez Abad A, Ruiz Mesa R, Kim HM, Mendicute J, Ribeiro FJ et al. Visual and patient reported outcomes provided by a refractive multifocal intraocular lens based on continuous transitional focus. *Eye Vis.* 2024; 11(1):41-41. Q1 (11/95) IF: 4.2



Neurosciences Area

6.1.1



Neurodegenerative Diseases

AWARDED HR POSITIONS

Public competitive programmes

3

Mobility

HR

Managers

Barandiaran Amillano, Myriam Jesús
Ruiz Martínez, Javier

Team

Senior Researcher

Moreno Izco, Fermín

Postdoctoral Researcher

Bajew Szymon, Piotr
Bergareche Yarza, Alberto
Etxeberria Arrichabal, Igone
Gereñu Lopetegui, Gorka
Minguez Olaondo, Ane

Investigador/a Clínico Estable

Campo Caballero, David
Fernández Pardavila, Esther
Gabilondo López, Alazne
Mondragón Rezola, Elisabet
Muñoz Lopetegui, Amaia
Tainta Cuevza, Mikel
Vinagre Aragón, Ana

PhD Student

Herrero Reiriz, Álvaro
Jiménez Zúñiga, Andrés
Zuñiga Elizari, Jose Luis

Platform Manager

Gorostidi Pagola, Ana

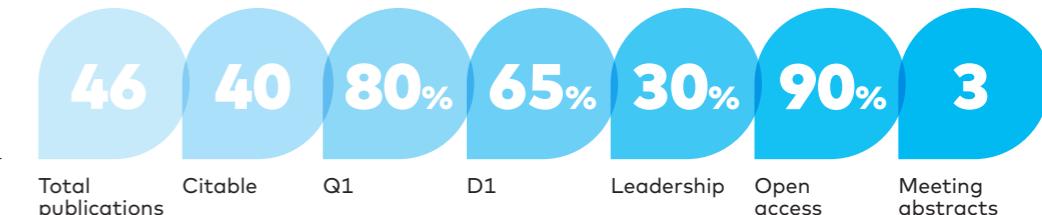
Senior Research Technician

Alves Días, Patricia
Croitoru, Ioana Marcela

Laboratory Technician

Hernández Eguizazu, Haizea
Moragon Rodriguez, Saioa

SCIENTIFIC OUTPUT



PROJECTS

Active Projects

Public Competitive programmes

National, 3

Autonomous, 3

Total 6

Public competitive programme projects awarded

National, 1

Autonomous, 1

Local, 1

Total 3

TRANSFER

Patent family:

1. FOXO inhibitors: A new treatment for Amyotrophic Lateral Sclerosis (ALS).
2. ALS biomarker ELOVL6.

Licensing agreements:

1. MIAKER DEVELOPMENTS S.L.

HIGHLIGHTED ARTICLES

01.

Liu X, Jones PS, Pasternak M, Masellis M, Bouzigues A, Russell LL et al. Frontoparietal network integrity supports cognitive function in pre-symptomatic frontotemporal dementia: Multimodal analysis of brain function, structure and perfusion. *Alzheimers. Dement.* 2024; 20(12):8576–8594.

02.

Iruzubieta P, Damborenea A, Ioghen M, Bajew S, Fernandez Torrón R, Töpf A et al. Biallelic variants in SNUPN cause a limb girdle muscular dystrophy with myofibrillar-like features. *Brain.* 2024; 147(8):2867–2883.

03.

Muñoz Oreja M, Sandoval A, Bruland O, Perez Rodriguez D, Fernandez Pelayo U, de Arbina AL et al. Elevated cholesterol in ATAD3 mutants is a compensatory mechanism that leads to membrane cholesterol aggregation. *Brain.* 2024; 147(5):1899–1913.

CLINICAL TRIALS

Clinical research

Clinical trials with medicinal products (MPs), 6

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 3

Other clinical studies, 4

Total active clinical studies

13

TRAINING

1

Total doctoral theses defended

Neurosciences Area

6.1.2



Neuromuscular Diseases

AWARDED HR POSITIONS

Public competitive programmes

1

Río Hortega
Contract

HR

Managers

López de Munain Arregui, Adolfo José
Saénz Peña, Miren Ametsa

Team

Senior Researcher

Gil Bea, Francisco Javier
Fernández Torró, Roberto
Sistiaga Berrondo, Andone
Vallejo Illarramendi, Ainara

Postdoctoral Researcher

Aizpurua Iparraguirre, Jesús María
Immanuel, Jenita
Labayru Iusquiza, Garazi
Pan Montojo Puga, Francisco José
Pérez Agustín, Adrián
Zayas Arrabal, Julián

Permanent Clinical Researcher

Poza Aldea, Juan José

PhD Student

Garciañdie Arcelus, Maddi
Gonzalez Imaz, Klaudia
Horcajo Arbosa, Aixa
Marco Moreno, Pablo
Mosqueira Marín, Laura
Pascual Frías, Nerea
Prendes García, Carolina
Rodríguez Gómez, Laura
Ruiz Roldan, Cristina
Sanchez Molleda, Ángela
Valls Rodríguez, Andrea

Platform Managers

Aiastui Pujana, Ana
Camañio González, María Pilar

Laboratory Technician

Levchuk, Mariya

Senior Research Technician

Garay Albizuri, Patricia

PROJECTS

Active projects

Public competitive programmes

National, 8

Autonomous, 9

Active projects

Private competitive programmes

International, 1

National, 1

Total 19

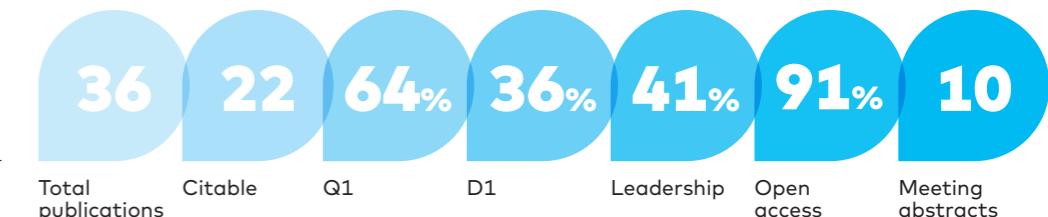
Public competitive programme projects awarded

National, 2

Autonomous, 4

Total 6

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Mega Vascular Cognitive Impairment and Dementia (MEGAVCID) C. A genome-wide association meta-analysis of all-cause and vascular dementia. *Alzheimers. Dement.* 2024; 20(9):5973-5995.

02.

Iruzubieta P, Damborenea A, loghen M, Bajew S, Fernandez Torró R, Töpf A et al. Biallelic variants in SNUPN cause a limb girdle muscular dystrophy with myofibrillar-like features. *Brain.* 2024; 147(8):2867-2883.

03.

Mora Ayestaran N, Dispensieri A, Kristen AV, Maurer MS, Diemberger I, Drachman BM et al. Age- and Sex-Related Differences in Patients With Wild-Type Transthyretin Amyloidosis: Insights From THAOS. *JACC Adv.* 2024; 3(8):101086-101086.

TRANSFER

Patent family:

1. New compounds for regulating intracellular calcium homeostasis.
2. FOXO inhibitors: A new treatment for Amyotrophic Lateral Sclerosis (ALS).
3. ALS biomarker ELOVL6.
4. Compounds for use in the treatment of limb-girdle muscular dystrophy type 2A (LGMD2A) - dihydroquinolines.
5. Compounds for use in the treatment of limb-girdle muscular dystrophy type 2A (LGMD2A) - thiadiazolidinones.
6. Triazoles for the treatment of ocular diseases.

Licensing agreements:

1. New compounds for regulating intracellular calcium homeostasis (triazoles), licensed to MIRAMOON PHARMA S.L.
2. FOXO inhibitors: new treatment for amyotrophic lateral sclerosis (ALS), licensed to MIAKER DEVELOPMENTS S.L.

Spin-off:

1. MIRAMOON PHARMA S.L.

Start-up:

1. MIAKER DEVELOPMENTS S.L.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 9

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 1

Other clinical studies, 5

Total active clinical studies 16

TRANSLATIONAL APPLICATION

1

Clinical practice guidelines

TRAINING

2

Total doctoral theses defended

Neurosciences Area

6.1.3



Neuroimmunology

AWARDED HR POSITIONS

Public competitive programmes

1

Postdoctoral contracts

1

Río Hortega Contract

7

Mobility Grants

HR

Managers

Otaegui Bichot, David
Castillo Triviño, Tamara

Team

Senior Researcher

Muñoz Culla, Maider

Postdoctoral Researcher

Alberro Garitano, Ainhoa
Bravo Miana, Rocío del Carmen
Celarain Sanz, Naiara
Martínez Ascensión, Alex
Moles Alegre, Laura

Permanent Clinical Researcher

Arruti González, Maialen
Andrés Marín, Naiara
Espinosa Ros, Eduardo
Prada Iñurrategui, Alvaro

PhD Student

Arizaga Echebarria, Jone Karmele
García-Serrano Iñiguez, Saioa
Gorostidi Acua, Miriam
Iribarren López, Andrea
Martins Almeida, Laura
Mendiburu Arrieta, Idoia
Otaegui Chivite, Ane
Zabala García, Aitor

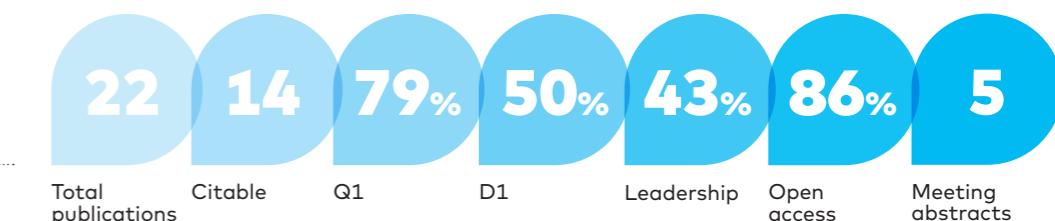
Senior Research Technician

Romarate García, Leire

Laboratory Technician

Crespillo Velasco, Hirune

SCIENTIFIC OUTPUT



PROJECTS

Active projects

Public competitive programmes

National, 5

Autonomous, 4

Local, 1

Active projects

Private competitive programmes

Regional, 2

Total 12

Public competitive programme projects awarded

National, 1

Autonomous, 1

Local, 1

Total 3

TRANSFER

Patent family:

1. Circular RNAs as biomarkers of multiple sclerosis.
2. Molecular patterns for diagnosis and stratification of frail individuals.

Intellectual property:

1. App for monitoring and tracking animal models.

Licensing agreements:

1. App for evaluating the animal model of multiple sclerosis - BIOTOOLS. Licence agreement with NORAYBIO.

HIGHLIGHTED ARTICLES

01.

EvolutionRMS investigators et al. Safety and efficacy of evobrutinib in relapsing multiple sclerosis (evolutionRMS1 and evolutionRMS2): two multicentre, randomised, double-blind, active-controlled, phase 3 trials. *Lancet Neurol.* 2024 Nov;23(11):1119-1132.

02.

Alberro A, Bravo Miana RD, Iñiguez SG, Iribarren López A, Arroyo Izaga M, Matheu A et al. Age-Related sncRNAs in Human Hippocampal Tissue Samples: Focusing on Deregulated miRNAs. *Int. J. Mol. Sci.* 2024; 25(23)

03.

Bravo Miana RD, Arizaga Echebarria JK, Sabas Ortega V, Crespillo Velasco H, Prada A, Castillo Triviño T et al. Tetraspanins, GLAST and L1CAM Quantification in Single Extracellular Vesicles from Cerebrospinal Fluid and Serum of People with Multiple Sclerosis. *Biomedicines.* 2024; 12(10)

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 6

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 6

Other clinical studies, 5

Total active clinical studies 17

Neurosciences Area

6.1.4



Mitochondria, Health & Longevity

AWARDED HR POSITIONS

Public competitive programmes

1

Mobility

HR

Manager

Holt, Ian James

Team

Postdoctoral Researcher

Muñoz Oreja, Mikel

PhD Student

Chengtai, Li
Frimpong, Angela

Senior Research Technician

Villar Fernández, Marina



PROJECTS

Active projects

Public competitive programmes

International, 1

National, 2

Autonomous, 2

Total 5

Projects awarded

Public competitive programmes

National, 2

Autonomous, 1

Total 3

SCIENTIFIC OUTPUT

4

Total publications

3

Citable

100%

Q1

100%

D1

100%

Leadership

100%

Open access

TRANSFER

Patent family:

1. Compounds for treating mitochondrial DNA disorders.
2. The Use Of Mn²⁺ To Alleviate Impaired Mtdna Replication And Thus To Treat A Range Of Neurological And Neurodegenerative Disorders

Licensing agreements:

1. Small molecule therapies for mitochondrial disorders. Ownership transfer agreement with UCL Business.

TRAINING

3

Total doctoral theses defended

3

Internationally recognised theses

HIGHLIGHTED ARTICLES

01.

Zufiría M, Pikatza Menoio O, Garciandia Arcelus M, Bengoetxea X, Jiménez A, Elicegui A et al. Dysregulated FOXO1 activity drives skeletal muscle intrinsic dysfunction in amyotrophic lateral sclerosis. *Acta Neuropathol.* 2024; 148(1):43-43.

02.

Muñoz Oreja M, Sandoval A, Bruland O, Perez Rodriguez D, Fernandez Pelayo U, de Arbina AL et al. Elevated cholesterol in ATAD3 mutants is a compensatory mechanism that leads to membrane cholesterol aggregation. *Brain.* 2024; 147(5):1899-1913.

03.

Spinazzola A, Perez Rodriguez D, Ježek J, Holt IJ. Mitochondrial DNA competition: starving out the mutant genome. *Trends Pharmacol. Sci.* 2024; 45(3):225-242

Neurosciences Area

6.1.5



Sensory Neurodegeneration

AWARDED HR POSITIONS

Private competitive programmes



Predoctoral contracts

HR

Manager

Irigoyen Laborra, Cristina
Ruiz Ederra, Javier

Team

Senior Researcher

Mendicute del Barrio, Javier

Postdoctoral Researcher

Acera Osa, Arantxa
Alberdi Ibarloza, Txomin
Martínez Soroa, Itziar
Rodríguez Aguirreche, Iñaki

Permanent Clinical Researcher

Bascaran Oteyza, Lucía
Juaristi Eizmendi, Leire
Ruiz Miguel, Miguel

PhD Student

Lara López, Araceli
Sarasola Gastezi, Miren Nekane

Senior Research Technician

Reparaz Bonilla, Iraia

TRAINING



Total doctoral theses defended

Internationally recognised theses

SCIENTIFIC OUTPUT

14

Total publications

6

Citable

67%

Q1

17%

Leadership

100%

Open access

2

Meeting abstracts

TRANSFER

Patent family:

1. Triazoles for the treatment of ocular diseases

HIGHLIGHTED ARTICLES

01.

Alió JL, Martínez Abad A, Ruiz Mesa R, Kim HM, Mendicute J, Ribeiro FJ et al. Visual and patient reported outcomes provided by a refractive multifocal intraocular lens based on continuous transitional focus. *Eye Vis.* 2024; 11(1):41-41. Q1 (11/95) IF: 4.2

02.

Zeuli R, Karali M, de Brujin SE, Rodenburg K, Scarpato M, Capasso D et al. Whole genome sequencing identifies elusive variants in genetically unsolved Italian inherited retinal disease patients. *Hum. Genet. Genom. Adv.* 2024; 5(3):100314-100314. Q2 (66/191) IF: 3.3

03.

Basharat R, de Brujin SE, Zahid M, Rodenburg K, Hitti Malin RJ, Rodríguez Hidalgo M et al. Next-generation sequencing to genetically diagnose a diverse range of inherited eye disorders in 15 consanguineous families from Pakistan. *Exp. Eye Res.* 2024; 244109945-109945. Q1 (18/95) IF: 3

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 2

Clinical research with medical devices (MDs), 2

Observational studies (with MPs and MDs), 3

Other clinical studies, 2

Total active clinical studies 7

TRANSLATIONAL APPLICATION



Clinical practice guidelines

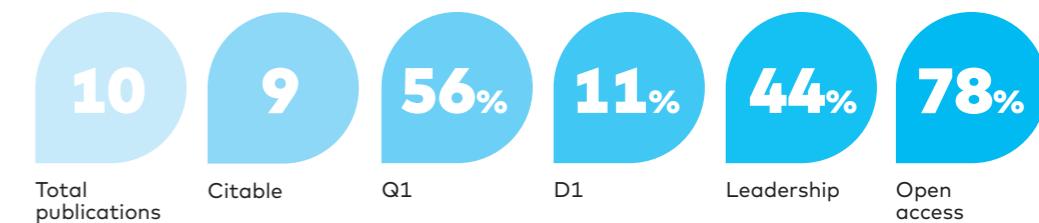
Neurosciences Area

6.1.6



Mental Health and Psychiatric Care

**SCIENTIFIC
OUTPUT**



HR

Managers

Iruin Sanz, Álvaro
Gabilondo Cuéllar, Andrea

Team

Postdoctoral Researcher

Aperribai Unamuno, Leire
Martínez Riera, Roser
Muela Aparicio, Alexander
Pereda Pereda, Eva
Pérez Fernández, José Ignacio
Ruiz Feliu, Miguel Ángel
Ruiz Iriondo, María
Salaberria Irizar, Karmele
Sarrionandia Peña, Ainize

Permanent Clinical Researcher

Hernandez Álvarez, Fabián
Múzquiz Jiménez, Álvaro
Oscoz Irurozqui, Maitane
Plata Redondo, Raquel
Zapirain Etxebeste, Edurne

Senior Research Technician

Riera Martín, Anna
Valencia Villareal, Macarena

PROJECTS

**Active projects
Public competitive
programmes**

International, 1

Autonomous, 3

Total 4

TRANSFER

Intellectual property:

1. Olímpicamente

HIGHLIGHTED ARTICLES

01.

Gabilondo A, Gonzalez-Pinto A, Garcia J, del Valle D, Morentin B, Iruin A. Analysis of health services use and clinical profiles in the year prior to suicide between 2010-2018, an opportunity to improve its prevention. Spanish Journal of Psychiatry and Mental Health. In press. Available online 18 May 2024.

02.

Expósito Campos P, Pérez Fernández JI, Salaberria K. A qualitative metasummary of detransition experiences with recommendations for psychological support. Int. J. Clin. Health Psychol. 2024; 24(2):100467-100467.

03.

Muela A., Bryan, C., Garcia-Ormaza, J. y Salaberria, K. Cross-cultural adaptation and psychometric validation of the Suicide Cognitions Scale-Revised (SCS-R) in spanish adolescents in residential care. Spanish Journal of Psychology, 2024, 27, e30, 1-10

TRAINING

3

Total doctoral
theses defended

6.1.7



Neurosciences Area

Stroke

AWARDED HR POSITIONS

Public competitive programmes

1

Release from
duties
Researchers

HR

Managers

De La Riva Juez, Patricia
Quiñones Gonzalez, Iliana

Team

Senior Researcher

De Arce Borda, Ana Maria

PhD Student

Rego Garcia, Iago

Permanent Clinical Researcher

Alonso Lacabe, Maitane
Anabitarte Gonzalez, Maier
Diez Gonzalez, Noemi
Equiza Bazan, Jon
Garmendia Lopetegui, Eñaut
Gonzalez Holgado, Elena
Gonzalez Lopez, Felix
Larrea Peña, Jose Angel
Laspiur Gandara, Raquel Sofia
Lopez De Turiso Lopez, Arantza
Lüttich Uroz, Alexandre
Marcos Osuna, Maria Macarena
Marta Enguita, Juan
Martinez Zabaleta, Maria Teresa

PROJECTS

Active projects

Public competitive programmes

National, 1

Autonomous, 2

Local, 1

Active projects

Private competitive programmes

National, 1

Total 5

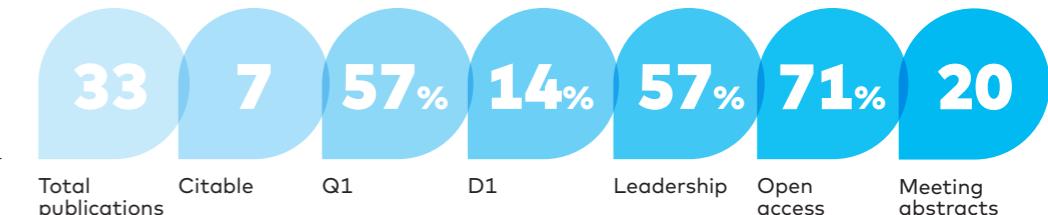
Projects awarded

Public competitive programmes

National, 2

Total 2

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

de la Riva P, Marta Enguita J, Rodríguez Antigüedad J, Bergareche A, de Munain AL.

Understanding Endothelial Dysfunction and Its Role in Ischemic Stroke After the Outbreak of Recanalization Therapies. *Int. J. Mol. Sci.* 2024; 25(21): 11631.

02.

Quiñones, I., Gisbert-Muñoz, S., Amoruso, L., Manso-Ortega, L., Mori, U., Bermudez, G., ... & Carreiras, M. (2024). Unveiling the neuroplastic capacity of the bilingual brain: insights from healthy and pathological individuals. *Brain Structure and Function*, 229(9), 2187-2205.

03.

Pérez Lázaro C, López-Bravo A, Gómez-Escaloniella Escobar C, Aguirre C, de Felipe A, de la Riva P, Calleja S, Arjona A, Serrano Ponz M, Navarro-Pérez MP, Delgado- Mederos R, Bashir Viturro S, Llul L, Egido J, García Madrona S, Díez González N, Benavente-Fernández L, de la Torre-Colmenero JD, Tejada Meza H, Vesperinas-Castro A, Sánchez-Cirera L, Trillo S. Management of cerebral venous thrombosis in Spain: MOTIVATE descriptive study. *Neurologia (English Edition)* 2024 Apr;39(3):226-234

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 2

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 4

Other clinical studies, 2

Total active clinical studies 8

6.1.8



Neurosciences Area

Neurogenetics, biology and RNA therapies - NeuroRNA

AWARDED HR POSITIONS

Public competitive programmes

1

Postdoctoral Contract

2

Mobility

HR

Managers

Blazquez García, Lorea
Iruzubieta Agudo, Pablo

Team

Postdoctoral Researcher

Santos-García Sanz, Irene
Alonso Martínez De Marañón, Josune

Permanent Clinical Researcher

Bastida Lertxundi, Nerea
Crettaz, Julien Swen
Saez Villaverde, Raquel

PhD Student

Damborenea Moreno, Alberto
Manterola Larrañaga, María
Pérez Fernández, Laura
Rubio Zulaika, Ane
Sarmiento Iturbe, Fernando
Velasco Bilbao, Ane

Senior Research Technician

Carazo Hidalgo, María

PROJECTS

Active projects

Public competitive programmes

European, 1

National, 2

Autonomous, 4

Active projects

Private competitive programmes

National, 1

Autonomous, 1

Total 9

Projects awarded

Public competitive programmes

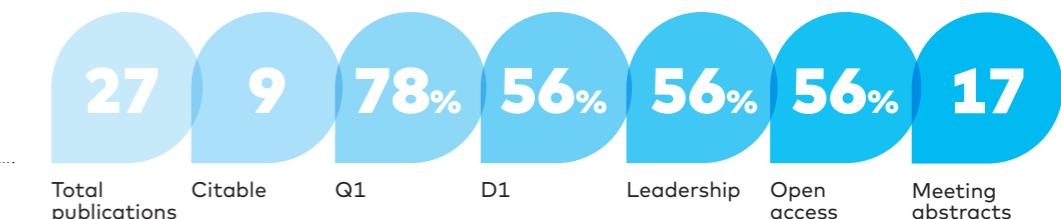
European, 2

National, 1

Autonomous, 3

Total 6

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Zufiría M, Pikatza Menoio O, Garciandia Arcelus M, Bengoetxea X, Jiménez A, Elicequi A et al. Dysregulated FOXO1 activity drives skeletal muscle intrinsic dysfunction in amyotrophic lateral sclerosis. *Acta Neuropathol.* 2024; 148(1):43-43.

02.

Iruzubieta P, Alves C, Al Shamsi AM, ElGhazali G, Zaki MS, Pinelli L et al. Clinical and neuroradiological spectrum of biallelic variants in NOTCH3. *Ebiomedicine.* 2024; 107105297-105297.

03.

Núñez Álvarez Y, Espie Caullet T, Buhagiar G, Rubio Zulaika A, Alonso Marañón J, Luna Pérez E et al. A CRISPR-dCas13 RNA-editing tool to study alternative splicing. *Nucleic Acids Res.* 2024; 52(19):11926-11939.

6.2

Liver and Gastrointestinal Diseases Area

LIVER AND GASTROINTESTINAL DISEASES AREA

Gastrointestinal Diseases

Liver Diseases

Liver Immuno-Oncology

Metabolism and Cancer

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Build on the results achieved so far in publications and research projects.
- Secure and retain postdoctoral staff as permanent and structural members of the group.
- Incorporate clinical practitioners into medical research.

Most Notable Publications in 2024

Bujanda L, Nyssen OP, Ramos J, Bordin DS, Tepes B, et Al. Effectiveness of *Helicobacter pylori* Treatments According to Antibiotic Resistance. *Am J Gastroenterol* 2024.

da Fonseca LG, Izquierdo-Sánchez L, Hashizume PH, Carlino Y, Baca EL, Zambrano C, Sepúlveda SA, Bolomo A, Rodrigues PM, Riaño I, Boonstra A, Debes JD, Bujanda L, Carrilho FJ, Arrese M, Roa JC, Carrera E, Ferrer JD, Balderramo D, Oliveira CP, Banales JM. Cholangiocarcinoma in Latin America: a multicentre observational study alerts on ethnic disparities in tumour presentation and outcomes. *Lancet Reg Health Am*. 2024.

Lewinska M, Zhuravleva E, Satriano L, Martinez MB, Bhatt DK, Oliveira DVNP, Antoku Y, Keggenhoff FL, Castven D, Marquardt JU, Matter MS, Erler JT, Oliveira RC, Aldana BI, Al-Abdulla R, Perugorria MJ, Calvisi DF, Perez LA, Rodrigues PM, Labiano I, Banales JM, Andersen JB. Fibroblast-Derived Lysyl Oxidase Increases Oxidative Phosphorylation and Stemness in Cholangiocarcinoma. *Gastroenterology*. 2024.

Olazagoitia-Garmendia A, Rojas-Márquez H, Romero MDM, Ruiz P, Agirre-Lizaso A, Chen Y, Perugorria MJ, Herrero L, Serra D, Luo C, Bujanda L, He C, Castellanos-Rubio A. Inhibition of YTHDF1 by salvianolic acid overcomes gluten-induced intestinal inflammation. *Gut* 2024.



6.2.1

Liver and Gastrointestinal Diseases Area

Gastrointestinal Diseases

HR

Manager

Bujanda Fernández de Piérola, Luis

Team

Postdoctoral Researcher

Izquierdo Sánchez, Laura

Permanent Clinical Researcher

Alonso Galán, Horacio
Barrero Iñíguez, Maialen
Etxart Lopetegui, Ane
Gil Lasa, Inés

PhD Student

Nafría Jiménez, Beatriz

Platform Manager

Hijona Muruamendaraz, Elizabeth

Laboratory Technician

Goitia Viaña, Ana

PROJECTS

Active projects Public competitive programmes

National, 2

Autonomous, 3

Local, 1

Active projects Private competitive programmes

Autonomous, 1

Total 8

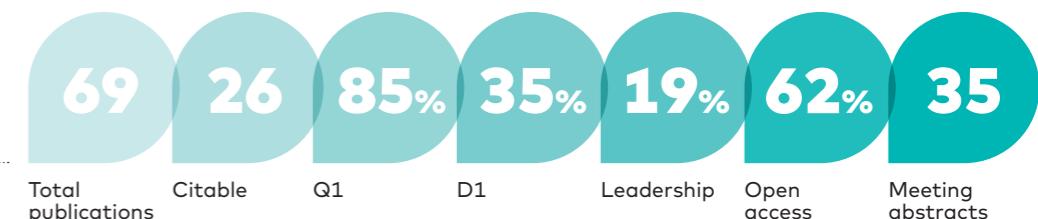
Public competitive programme projects awarded

Autonomous, 2

Local, 1

Total 3

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Bujanda L, Nyssen OP, Ramos J, Bordin DS, Tepes B, Perez Aisa A et al. Effectiveness of Helicobacter pylori treatments according to antibiotic resistance. *Am. J. Gastroenterol.* 2024; 119(4):646-654.

02.

Domínguez Rovira X, Arnau Collell C, Gonfaus G, Llangués Sistac G, Muñoz J, Llopis A et al. Germline mutations in *HIC1* are associated with serrated polyposis syndrome. *Eur. J. Hum. Genet.* 2024; 32:1266-1266.

03.

Llach J, Luzko I, Earl J, Barreto E, Rodríguez Garrote M, Lleixà M et al. Should We Offer Universal Germline Genetic Testing to All Patients with Pancreatic Cancer? A Multicenter Study. *Cancers.* 2024; 16(22).

TRANSFER

Patent family:

1. Saliva-based diagnostic test for eosinophilic oesophagitis.

Start-up:

1. Smart Peer Reviewers S.L.

TRAINING

1

Total doctoral
theses defended

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 1

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 3

Other clinical studies, 9

Total active clinical studies 14

TRANSLATIONAL APPLICATION

1

Clinical practice
guidelines

6.2.2

Liver and Gastrointestinal Diseases Area

Liver Diseases

AWARDED HR POSITIONS

Private competitive programmes

2

Predoctoral contracts

1

Internships

HR

Manager

Bañales Asurmendi, Jesús María

Team

Postdoctoral Researcher

Caballero Camino, Francisco Javier
Olaizola Rebé, Irene

Permanent Clinical Researcher

Aguirre Allende, Ignacio
Alustiza Echeberria, José María
Beguiristain Gómez, Adolfo
Castiella Eguzkiza, Agustín
De Juan Echavarri, María Dolores
Gallego Otaegui, Lander
Gutiérrez San Jose, Elide
Jiménez Agüero, Raúl
La Casta Muñoa, Adelaida
Pastor Bonel, Tania
Pérez Castaño, Ylenia
Ruiz Montesinos, Inmaculada
Zapata Morcillo, Eva

PhD Student

Markaide García, Enara
Pastor De los Toyos, Noelia

Platform Manager

Riaño Fernández, Ioina

Senior Research Technician

Coelho Do Val, Beatriz

PROJECTS

Active projects

Public competitive programmes

International, 1

National, 1

Autonomous, 6

Local, 1

Active projects

Private competitive programmes

International, 4

National, 1

Total 14

Public competitive programme projects awarded

International, 1

National, 1

Autonomous, 2

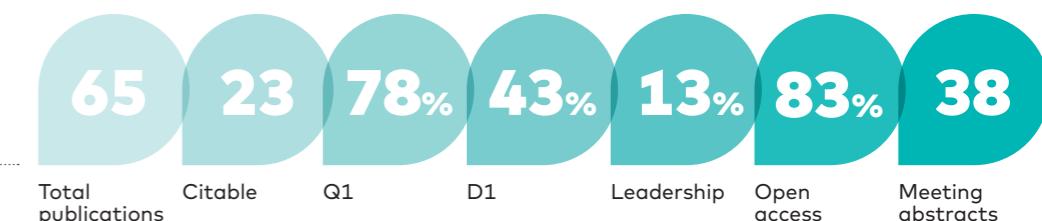
Private competitive programme projects awarded

International, 2

National, 1

Total 7

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

da Fonseca LG, Izquierdo Sanchez L, Hashizume PH, Carillo Y, Baca EL, Zambrano C et al. Cholangiocarcinoma in Latin America: a multicentre observational study alerts on ethnic disparities in tumour presentation and outcomes. Lancet Regional Health-Americas. 2024; 40100952-100952.

02.

Kendall T, Overi D, Guido M, Braconi C, Banales J, Cardinale V et al. Recommendations on maximising the clinical value of tissue in the management of patients with intrahepatic cholangiocarcinoma. JHEP Rep. 2024; 6(6):101067-101067.

03.

Lewinska M, Zhuravleva E, Satriano L, Martinez MB, Bhatt DK, Oliveira DVNP et al. Fibroblast-Derived Lysyl Oxidase Increases Oxidative Phosphorylation and Stemness in Cholangiocarcinoma. Gastroenterology. 2024; 166(5).

TRANSFER

Patent families:

1. Combined therapeutic strategy for polycystic liver disease using new HDAC6 inhibitors derived from UDCA.
2. Polyelectrophilic metallated heterocycles derived from 2-(PYRIDIN-2-YL)IMIDAZO[1,2-A]PYRIDINE and their use as chemotherapeutic agents.
3. Inventors of the patent METHODS OF TREATING CANCER, owned by Intercept Pharmaceuticals Inc.
4. Device for cell culture.

Know-how licence:

1. OWL FAT - serum metabolomic fingerprint for accurate and non-invasive prediction of liver fat concentration.
2. OWL GENOMICS - serum metabolomic fingerprint for prognosis in NAFLD/NASH based on genetic polymorphism associations.

Licensing agreements:

1. OWL FAT - Joint Ownership Agreement and Exploitation Licence Agreement with ONE WAY LIVER, S.L.
2. OWL GENOMICS - Joint Ownership Agreement and Exploitation Licence Agreement with ONE WAY LIVER, S.L.
3. Development of new selective HDAC6 inhibitors derived from ursodeoxycholic acid. Preferential licence agreement with NOWTURE BIO.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 9

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 2

Other clinical studies, 3

Total active clinical studies 11

TRAINING

1

Total doctoral theses defended

1

Internationally recognised theses

6.2.3

**Liver and Gastrointestinal Diseases Area**

Liver Immuno-Oncology

AWARDED HR POSITIONS**Public competitive programmes****1**

Mobility

HR**Manager**

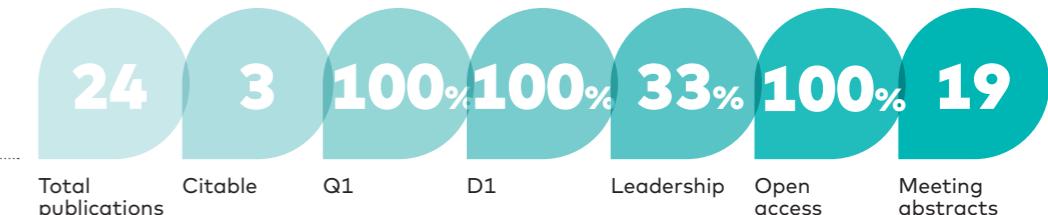
Perugorria Montiel, Maria Jesus

Team**Postdoctoral Researcher**

Agirre Lizaso, Aloña

PhD StudentHuici Izagirre, Maider
Urretabizkaia Garmendia, Josu**1**

Internships

PROJECTS**Active projects****Public competitive programmes**National, **2**Autonomous, **2****Total** **4****Public competitive programme projects awarded**Autonomous, **1****Total** **1****SCIENTIFIC OUTPUT****HIGHLIGHTED ARTICLES****01.**

Olazagoitia Garmendia A, Rojas Marquez H, Sebastian delaCruz M, Agirre Lizaso A, Ochoa A, Mendoza Gomez LM, Perugorria MJ, Bujanda L, Madrigal AH, Santin I, Castellanos-Rubio A. m6A Methylated Long Noncoding RNA LOC339803 Regulates Intestinal Inflammatory Response. *Adv. Sci.* 2024; 11(13):e2307928.

02.

Lewinska M, Zhuravleva E, Satriano L, Martinez MB, Bhatt DK, Oliveira DVNP, Antoku Y, Keggenhoff FL, Castven D, Marquardt JU, Matter MS, Erler JT, Oliveira RC, Aldana BI, Al-Abdulla R, Perugorria MJ, Calvisi DF, Perez LA, Rodrigues PM, Labiano I, Banales JM, Andersen JB. Fibroblast-Derived Lysyl Oxidase Increases Oxidative Phosphorylation and Stemness in Cholangiocarcinoma. *Gastroenterology*. 2024;166(5):886-901.e7.

03.

Rojas Márquez H, Olazagoitia garmendia A, Perugorria MJ, Huerta A, Bujanda L, Castellanos rubio A. Human Colonic Organ Culture Reveals XPO1-Independent Ability of Salvianolic Acid to Reduce Ulcerative Colitis-Related Inflammation. *Gastro Hep Adv.* 2024; 3(8):1132-1134.

6.2.4



Liver and Gastrointestinal Diseases Area

Metabolism and Cancer

AWARDED HR POSITIONS**HR****Public competitive programmes****1**

Postdoctoral contracts

2

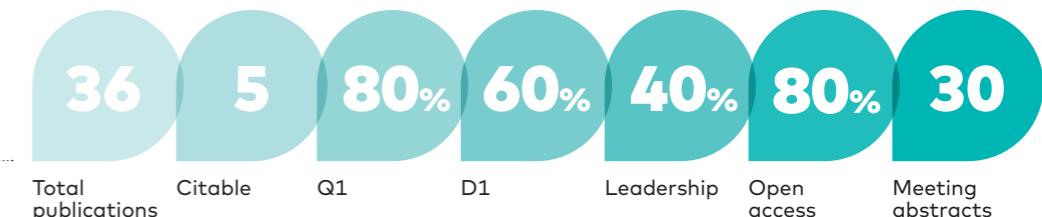
Mobility

Manager

Rodrigues Vieira, Pedro Miguel

Team**Postdoctoral Researcher**

Lapitz Dambolenea, Ainhoa

PhD StudentEchebarria Estebanez, Anne
Iturbe Rey, Santiago
Lasa Elosegui, Irune**PROJECTS****Active projects****Public competitive programmes**National, **1**Autonomous, **1**Local, **1****Active projects****Private competitive programmes**National, **1****Total** **4****Private competitive programme projects awarded**National, **1****Total** **1****SCIENTIFIC OUTPUT****HIGHLIGHTED ARTICLES****01.**

da Fonseca LG, Izquierdo Sanchez L, Hashizume PH, Carlino Y, Baca EL, Zambrano C et al. Cholangiocarcinoma in Latin America: a multicentre observational study alerts on ethnic disparities in tumour presentation and outcomes. *Lancet Regional Health-Americas*. 2024; 40100952-100952.

02.

PYDYNN, Ferenc A, Trzos K, Pospiech E, Wilamowski M, Mucha O et al. MCPIP1 Inhibits Hepatic Stellate Cell Activation in Autocrine and Paracrine Manners, Preventing Liver Fibrosis. *Cell. Mol. Gastroenterol. Hepatol.* 2024; 17(6):887-906.

03.

Lewinska M, Zhuravleva E, Satriano L, Martinez MB, Bhatt DK, Oliveira DVNP, Antoku Y, Keggenhoff FL, Castven D, Marquardt JU, Matter MS, Erler JT, Oliveira RC, Aldana BI, Al-Abdulla R, Perugorria MJ, Calvisi DF, Perez LA, Rodrigues PM, Labiano I, Banales JM, Andersen JB. Fibroblast-derived lysyl oxidase increases oxidative phosphorylation and stemness in cholangiocarcinoma. *Gastroenterology* 2024; 166(5):886-901.

6.3 ● Infectious Diseases Area

INFECTIOUS DISEASES AREA

Sexually Transmitted Infections

Infectious Epidemiology and Antimicrobial Resistance

Infectious Diseases and Global Health

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Promote the translational application of research results.
- Integrate various research groups within the area.
- Explore new inter-area research lines.
- Enhance publication impact.
- Incorporate best practices aligned with RRI (Responsible Research and Innovation).

Most Notable Publications in 2024

Marimón JM, Montes M, Vizuete N, Guerrico LA, Aginagalde AH, Mir Cros A et al. Pertussis Outbreak During 2023 in Gipuzkoa, North Spain. *Vaccines*. 2024; 12(10):

Salmerón P, Serra Pladevall J, Vall Mayans M, Villa L, Otero Guerra L, Milagro A et al. Genetic characterisation of lymphogranuloma venereum in Spain: a multicentre study. *Sex. Transm. Infect.* 2024; 100(8):512-516.

Martínez Sellés M, Kortajarena Urkola X, Muñoz P, Fariñas MC, Armiñanzas C, de Alarcón A et al. Infective endocarditis in HIV-infected patients. Analysis of a national cohort. *Infect. Dis.* 2024; 56(12):1-10.

Vale FF, Roberts RJ, Kobayashi I, Camargo MC, Rabkin CS, Research Network HPGP. Gene content, phage cycle regulation model and prophage inactivation disclosed by prophage genomics in the *Helicobacter pylori* Genome Project. *Gut Microbes*. 2024; 16(1):2379440-2379440.



Infectious Diseases Area

6.3.1



Sexually Transmitted Infections

SCIENTIFIC OUTPUT

Total publications



Citable



Q1



Leadership



Open access

HR**Manager**

Piñeiro Vázquez, Luis Darío

Team**Permanent Clinical Researcher**Arrastia Erviti, Maitane
Gil Alonso, Leire
Idigoras Viedma, Pedro
Lasa Alvarado, Izaskun**HIGHLIGHTED ARTICLES****01.**Salmerón P, Serra Pladevall J, Vall Mayans M, Villa L, Otero Guerra L, Milagro A et al. Genetic characterisation of lymphogranuloma venereum in Spain: a multicentre study. *Sex. Transm. Infect.* 2024; 100(8):512-516.**02.**Simoes MP, Hodcroft EB, Simmonds P, Albert J, Alidjinou EK, Ambert Balay K et al. Epidemiological and clinical insights into the enterovirus D68 upsurge in Europe 2021/22 and the emergence of novel B3-derived lineages, ENPEN multicentre study. *J. Infect. Dis.* 2024; 230(4):917-928.**PROJECTS****Active projects
Public competitive
programmes**

Autonomous, 1

Total 1**Projects awarded
Public competitive
programmes**

Autonomous, 1

Total 1**TRANSLATIONAL
APPLICATION**Clinical practice
guidelines

Infectious Diseases Area

6.3.2



Infectious Epidemiology and Antimicrobial Resistance

AWARDED HR POSITIONS

Public competitive programmes

1

Release from
duties
Researchers

HR

Manager

Marimón Ortiz de Zarate, José María

Postdoctoral Researcher

Alkorta Gurrutxaga, Mirian
Alonso Asencor, Marta
Aranzamendi Zaldumbide, Maitane
Montes Ros, Milagrosa
Vicente Anza, Diego
Vidaur Tello, Loreto

Permanent Clinical Researcher

Idigoras Viedma, Pedro

PhD Student

Rekalde Hernando, Maite Elisa

Senior Research Technician

Sorarrain Zarraga, Ane



PROJECTS

Active projects

Public competitive programmes

European, 1

Total 1

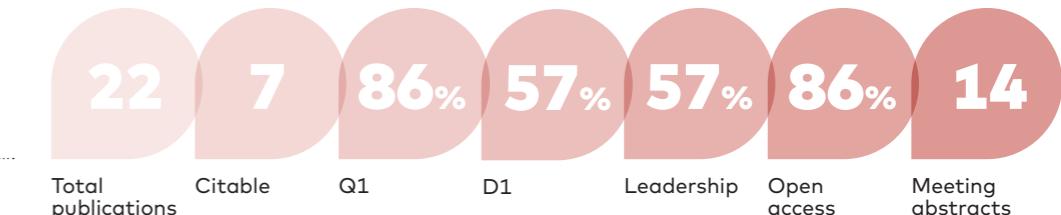
Projects awarded

Public competitive programmes

European, 2

Total 2

SCIENTIFIC OUTPUT



TRANSFER

Intellectual property:

1. Streptococcus pneumoniae serotyping kit.

Licensing agreement:

1. Streptococcus pneumoniae serotyping kit.
2. Co-ownership and commercial exploitation licence agreement with OPERON S.L.

HIGHLIGHTED ARTICLES

01.

Marimón JM, Montes M, Vizuete N, Guerrico LA, Aginagalde AH, Mir Cros A et al. Pertussis Outbreak During 2023 in Gipuzkoa, North Spain. *Vaccines*. 2024; 12(10).

02.

Vale FF, Roberts RJ, Kobayashi I, Camargo MC, Rabkin CS, Research Network HPGP. Gene content, phage cycle regulation model and prophage inactivation disclosed by prophage genomics in the *Helicobacter pylori* Genome Project. *Gut Microbes*. 2024; 16(1):2379440-2379440.

03.

Calvo Silveria S, González Díaz A, Grau I, Marimón JM, Cercenado E, Quesada MD et al. Evolution of invasive pneumococcal disease by serotype 3 in adults: a Spanish three-decade retrospective study. *Lancet Reg Health Eur*. 2024; 41100913-100913.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 0

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 0

Other clinical studies, 1

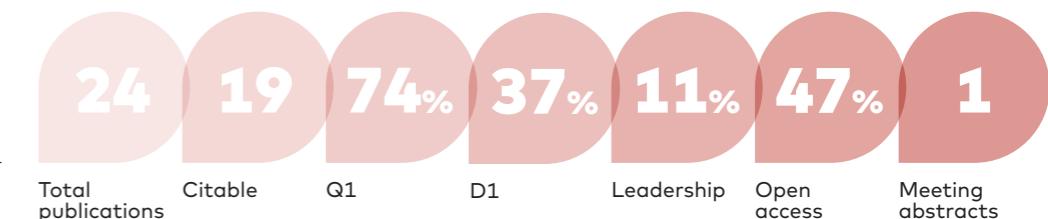
Total active clinical studies 1

6.3.3

Infectious Diseases Area

Infectious Diseases and Global Health

SCIENTIFIC OUTPUT



HR

Manager

Carmona de la Torre, Francisco de Asís
Ibarguren Pinilla, Maialen

Team

Permanent Clinical Researcher

Álvarez Rodríguez, Ignacio
Azkune Galparsoro, Harkaitz
Bayona Carlos, Ana
Bustinduy Odriozola, María Jesús
Camino Ortiz de Barrón, Xabier
Gil Alonso, Leire
Goenaga Sánchez, Miguel Angel
Iribarren Loyarte, Jose Antonio
López Olaizola, Maddi
Kortajarena Urkola, Xabier

Senior Research Technician

Nevado Pavón, Claudia

PROJECTS

Active projects Public competitive programmes

Local, 1

Total 1

HIGHLIGHTED ARTICLES

01.

Palom-Grau C, Cuervo G, Muñoz P et al; GAMES Investigators. A Contemporary Picture of Coagulase-Negative Staphylococcal Endocarditis: A Nationwide GAMES Cohort Study. *J Am Coll Cardiol.* 2024 Oct 25:S0735-1097(24)08573-5.

02.

Camprubí Ferrer D, Díaz Menéndez M, Crespillo Andújar C, Galparsoro HA, Belhassen García M, Cuadros González J et al. Executive Summary of the Spanish Guidelines for the Diagnosis and Management of Imported Febrile Illnesses from the Spanish Society of Tropical Medicine and International Health (SEMTSI), the Imported Pathology Group of the Spanish Society of Infectious Diseases and Clinical Microbiology (GEPI-SEIMC), the Spanish Society of Family and Community Medicine (SEMFYC), the Spanish Society of Primary Care Physicians (SEMERGEN) and the Spanish Society of Emergency Medicine (SEMES). *Enferm Infect Microbiol Clin (Engl Ed).* 2024; 42(7):380-385.

03.

López Cortés LE, Delgado Valverde M, Moreno Mellado E, Goikoetxea Aguirre J, Guió Carrión L, Blanco Vidal MJ et al. Efficacy and safety of a structured de-escalation from antipseudomonal β -lactams in bloodstream infections due to Enterobacteriales (SIMPLIFY): an open-label, multicentre, randomised trial. *Lancet Infect Dis.* 2024; 24(4):375-385.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 5

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 1

Other clinical studies, 2

Total active clinical studies 6

TRANSLATIONAL APPLICATION

2

Clinical practice guidelines

TRAINING

1

Total doctoral theses defended

6.4 Oncology Area

ONCOLOGY AREA

Breast Cancer

Cellular Oncology

Molecular Oncology

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- At least 1 project submitted to funding agencies with team members from 2 or more groups within the area.
- At least 1 new research line developed in collaboration between 2 or more groups within the area.
- 2 or more publications signed by members of 2 or more groups in the area.
- 1 doctoral thesis co-directed by members of 2 or more groups within or outside the area.
- 2 or more joint seminars involving members of 2 or more groups within the area.
- 2 or more projects submitted to funding agencies involving another entity and/or industry partner.

Most Notable Publications in 2024

Hiensch AE, Depenbusch J, Schmidt ME, Monninkhof EM, Pelaez M, Clauss D et al. Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial. *Nat. Med.* 2024; 30(10):2957-2966.

Nemours S, Solé C, Goicoechea I, Armesto M, Arestin M, Urruticoechea A et al. Use of Gain-of-Function Screening to Identify miRNAs Involved in Paclitaxel Resistance in Triple-Negative Breast Cancer. *Int. J. Mol. Sci.* 2024; 25(24).

Cruces Salguero S, Larrañaga I, Mar J, Matheu A. Centenarians of the Basque Country are resilient to cancer. *GeroScience*. 2024.

Guerrero Zotano Á, Pérez García JM, Ruiz Borrego M, Bermejo B, Gil M, de la Haba J et al. Neoadjuvant letrozole and palbociclib in patients with HR-positive/HER2-negative early breast cancer and Oncotype DX Recurrence Score =18: DxCARTES study. *ESMO Open*. 2024; 9(10):103733-103733.

Armesto M, Nemours S, Arestín M, Bernal I, Solano Iturri JD, Manrique M et al. Identification of miRNAs and Their Target Genes Associated with Sunitinib Resistance in Clear Cell Renal Cell Carcinoma Patients. *Int. J. Mol. Sci.* 2024; 25(13).



6.4.1**Oncology Area****Breast Cancer****AWARDED HR POSITIONS****Public competitive programmes****1**

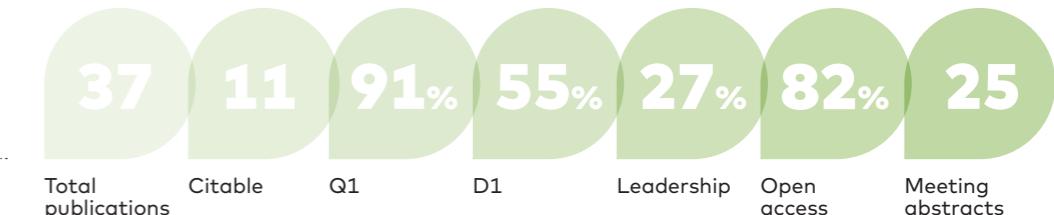
Postdoctoral contracts

Private competitive programmes**2**

Predoctoral contracts

HR**Managers**Álvarez López, Isabel Manuela
Muñoz Caffarel, María**Team****Senior Researcher**Urruticoechea Ribate, Ander
Garmendia Iturbe, Iratí**Postdoctoral Researcher**Arrieta Etxeberria, Haritz
Azcoaga Azcoaga, Peio
Manzano Figueroa, Sara**Permanent Clinical Researcher**Álvarez Cuesta, Luis
Ancizar Lizarraga, Nerea
Fernández Calleja, Marta
Guimón Olaizola, Elena
Lahuerta Martínez, Ainara
Paisán Ruiz, Ana
Rezola Bajineta, Marta
Urraca de la Serna, José María**PhD Student**Álvarez Huesa, Uxue
López Velazco, Joanna Inés
Petit de Prado, Paloma
Romo Valera, Ainhoa
Sánchez Castro Adrián**Laboratory Technician**

Telletxea Garmendia, Zuhara

SCIENTIFIC OUTPUT**HIGHLIGHTED ARTICLES****01.**

Hiensch AE, Depenbusch J, Schmidt ME, Monninkhof EM, Pelaez M, Clauss D et al. Supervised, structured and individualized exercise in metastatic breast cancer: a randomized controlled trial. *Nat. Med.* 2024; 30(10):2957-2966.

02.

Bacci M, Lorito N, Smiriglia A, Subbiani A, Bonechi F, Comito G et al. Acetyl-CoA carboxylase 1 controls a lipid droplet-peroxisome axis and is a vulnerability of endocrine-resistant ER(+) breast cancer. *Sci. Transl. Med.* 2024; 16(736).

03.

López Velazco JI, Manzano S, Otaño M, Elorriaga K, Bultó N, Herrero J et al. A prospective study on tumour response assessment methods after neoadjuvant endocrine therapy in early oestrogen receptor-positive breast cancer. *Breast Cancer Res.* 2024; 26(1):3-3.

CLINICAL TRIALS**Clinical Research**

Clinical trials with medicinal products (MPs), **35**

Clinical research with medical devices (MDs), **0**

Observational studies (with MPs and MDs), **3**

Other clinical studies, **6**

Total active clinical studies **38**

TRAINING**1**

Total doctoral theses defended

1

Internationally recognised theses

PROJECTS**Active projects****Public competitive programmes**National, **4**Autonomous, **2**Local, **1****Active projects****Private competitive programmes**National, **4****Total** **11****Public competitive programme projects awarded**National, **2**Autonomous, **2**Local, **1****Active projects****Private competitive programmes**National, **2****Total** **7**

Oncology Area
6.4.2
Cellular Oncology

AWARDED HR POSITIONS

Public competitive programmes

1

Predoctoral contracts

1

Grants

HR

Manager

Matheu Fernández, Ander

Team

Senior Researcher

Carrasco García, Estefanía
Cossío Mora, Fernando
Moncho Amor, Verónica
Samprón Lebed, Nicolás

Postdoctoral Researcher

Egaña Otaño, Larraitz
Iturrioz Rodríguez, Nerea
Landa Medrano, Jon
Marcos Pérez, Diego
Ortiz de Urbina Ugarte, David Ignacio
Sáenz Antoñanzas, Ander
Villanúa Bernues, Jorge Alberto

Permanent Clinical Researcher

Arévalo Lobera, Sara
Moreno Valladares, Manuel
Ruiz Díaz, Irune

PhD Student

Aguirre Zuazo, Itxaso
Artetxe Zurutuza, Aizpea
Cruces Salguero, Sara
Elizazu Pérez, Joseba
Otaegi Ugartemendia, Maddalen
Saénz Antoñanzas, Ander

Laboratory Technician

Veragara Arce, Jhonatan Andrés

PROJECTS

**Active projects
Public competitive programmes**

European, 1

National, 5

Autonomous, 6

Local, 2

**Active projects
Private competitive programmes**

Autonomous, 1

Total 15

Public competitive programme projects awarded

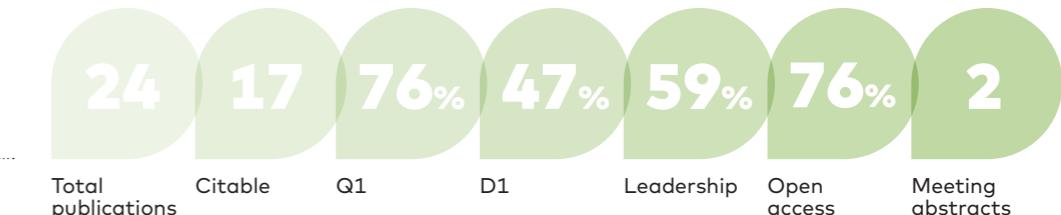
European, 1

National, 2

Autonomous, 4

Total 7

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Cruces Salguero S, Larrañaga I, Mar J, Matheu A. Centenarians of the Basque Country are resilient to cancer. *GeroScience*. 2024.

02.

Saenz Antoñanzas A, Muñoz Culla M, Rigo P, Ruiz Barreiro L, Moreno Valladares M, Alberro A et al. Centenarian hippocampus displays high levels of astrocytic metallothioneins. *Aging Cell*. 2024; 23(8):

03.

Elizazu J, Artetxe Zurutuza A, Otaegi Ugartemendia M, Moncho Amor V, Moreno Valladares M, Matheu A et al. Identification of a novel gene signature related to prognosis and metastasis in gastric cancer. *Cell. Oncol.* 2024; 47(4):1355-1373.

TRANSFER

Patent families:

1. Identification of molecular patterns for diagnosis and stratification of frail individuals.
2. Functional capacity analysis device.
3. HISTONE DEACETYLASE DERIVATIVES for the treatment of cancer.

Licensing agreement:

1. Functional capacity analysis device, licensed to BIOLAN S.L.

TRAINING

1

Total doctoral theses defended

1

Internationally recognised theses

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 1

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 0

Other clinical studies, 0

Total active clinical studies 2

Oncology Area

6.4.3



Molecular Oncology

AWARDED HR POSITIONS

HR

Public competitive programmes

3

Postdoctoral contracts

Release from duties Researchers

1

Manager

Lawrie, Charles

Team

Senior Researcher

Basterretxea Badiola, Laura
Ceberio Echepipia, Izaskun
Solé Cañadas, Carla

Postdoctoral Researcher

Armesto Álvarez, María Consuelo
Bourantas, Dimitrios
De la Encarnación Bermudez, Cristina
Martínez De Arbulo Echebarria Miguel
Panizo Santos, Carlos Manuel
Nemours Stephane
Suarez Alvarez, Beatriz

Permanent Clinical Researcher

Araiz Ramírez, María
Bengoechea Nerecan, Enrique
Bernal Simón, Iraide

PhD Student

Gurrutxaga Navas, June
Marquez Lopez, Maitane

Senior Research Technician

Arestin Muruzabal, María

Laboratory Technician

Arocena Bertiz, Leire
Carretero Dominguez, Francisco Jose
Centeno Barrio, Diego

PROJECTS

Active projects
Public competitive programmes

National, 1

Autonomous, 8

Active projects
Private competitive programmes

National, 2

Autonomous, 2

Total 13

Public competitive programme projects awarded

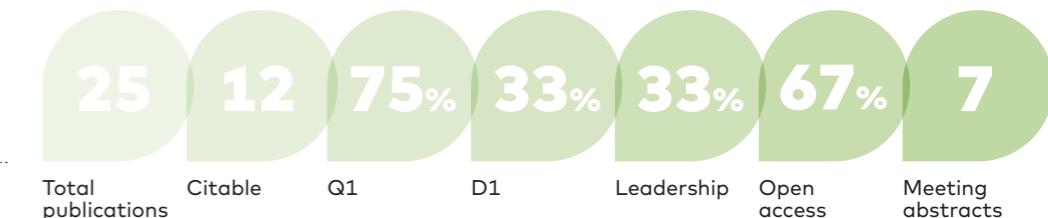
European, 1

National, 1

Autonomous, 4

Total 6

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Nemours S, Solé C, Goicoechea I, Armesto M, Arestin M, Urruticoechea A et al. Use of Gain-of-Function Screening to Identify miRNAs Involved in Paclitaxel Resistance in Triple-Negative Breast Cancer. *Int. J. Mol. Sci.* 2024; 25(24):

02.

Armesto M, Nemours S, Arestín M, Bernal I, Solano Iturri JD, Manrique M et al. Identification of miRNAs and Their Target Genes Associated with Sunitinib Resistance in Clear Cell Renal Cell Carcinoma Patients. *Int. J. Mol. Sci.* 2024; 25(13):

03.

Nemours S, Armesto M, Arestín M, Manini C, Giustetto D, Sperga M et al. Non-coding RNA and gene expression analyses of papillary renal neoplasm with reverse polarity (PRNRP) reveal distinct pathological mechanisms from other renal neoplasms. *Pathology*. 2024; 56(4):493-503.

TRANSFER

Patent families:

1. Mutation detection device.
2. SARS-CoV-2 detection technology.
3. Modular multiwell plates for cell culture, optimised for Raman spectroscopy imaging.

Licensing agreement:

1. SARS-CoV-2 detection technology. Joint Ownership and Exploitation Licence Agreement with INDICATE SOLUTIONS S.L.

Spin-off:

1. INDICATE SOLUTIONS S.L.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 12

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 4

Other clinical studies, 3

Total active clinical studies

16

6.5

Systemic Diseases Area

SYSTEMIC DISEASES AREA

Heart Diseases

Obstetrics and Gynaecology

Otolaryngology and Head and Neck Surgery

Paediatrics

Respiratory and Pleural Pathology

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Promote the translational application of research results.
- Incorporate new research groups into the area.
- Integrate various research groups within the area.
- Explore new inter-area research lines.
- Foster collaboration with the R&D&I ecosystem and the business network of the Basque Autonomous Community.
- Incorporate best practices aligned with RRI (Responsible Research and Innovation).

Most Notable Publications in 2024

Bastante T, Martín Moreiras J, Cid Álvarez AB, en representación A, Carballo Garrido J, Andraka L et al. Spanish cardiac catheterization and coronary intervention registry. 33rd official report of the Interventional Cardiology Association of the Spanish Society of Cardiology (1990-2023). Rev. Esp. Cardiol. 2024; 77(11):936-946.

Del Valle D, Ruiz R, Lekuona A, Cobas P, Jaunarena I, Gorostidi M, et al. Superparamagnetic iron oxide (SPIO) for sentinel lymph node detection in vulvar cancer. Gynecologic Oncology. 2024; 187:145-150.

Sevilla Ayensa M, Pérez Arruti A, Alberich Inchausti M, Larruscain Sarasola E, González García JA, Sistaga Suárez JA et al. Validation of step oncology, a platform for head and neck cancer patients support during and after treatment: preliminary results. Eur. Arch. Oto-Rhino-Laryn. 2024.

Andina Martínez D, Claret Teruel G, Gijón Mediavilla M, Cámará Otegui A, Baños López L, de Miguel Lavisier B et al. Nirsevimab and Acute Bronchiolitis Episodes in Pediatric Emergency Departments. Pediatrics. 2024; 154(4).

Aguinagalde B, Ferrer Bonsoms JA, López I, Lizarbe IA, Fernández Monge A, Recuero JL et al. Comparison of 5-Year Survival and Disease Recurrence After Trisegmentectomy or Left Upper Lobectomy: A Propensity Score Analysis of the National GEVATS Database. Arch. Bronconeumol. 2024; 60(11):705-713



Systemic Diseases Area

6.5.1

Heart Diseases

AWARDED HR POSITIONS

HR

Public competitive programmes

2

Postdoctoral contracts

Manager

Alegret Ramon, Nuria
Arana Achaga, Xabier

Team

Postdoctoral Researcher

Del Bosque Martín, Cristina
Zubillaga Azpiroz, Elena

Permanent Clinical Researcher

Echegaray Ibáñez, Kattalin
Goena Vives, María Cristina
Izaguirre Yarza, Alberto
Larman Tellechea, Mariano
Perez Martinez, Clara Isabel
Rengel Jiménez, Ainhoa
Robledo Mansilla, Eva
Solla Ruiz, Itziar
Villanueva Benito, Iñaki

PROJECTS

Active projects Public competitive programmes

Autonomous, 2

Active projects Private competitive programmes

National, 1

Total 3

Projects awarded Public competitive programmes

European, 1

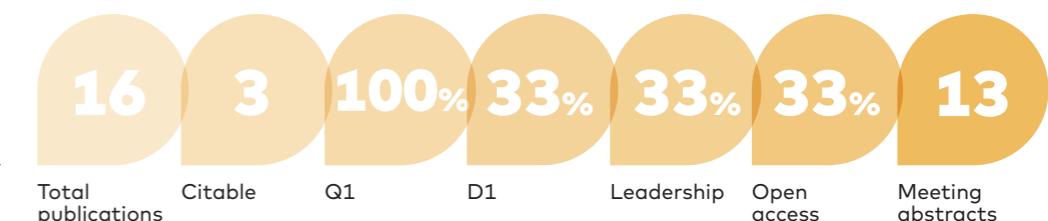
Autonomous, 1

Active projects Private competitive programmes

National, 1

Total 3

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Bastante T, Martín Moreiras J, Cid Álvarez AB, en representación A, Carballo Garrido J, Andraka L et al. Spanish cardiac catheterization and coronary intervention registry. 33rd official report of the Interventional Cardiology Association of the Spanish Society of Cardiology (1990-2023). Rev. Esp. Cardiol. 2024; 77(11):936-946.

02.

Esteban Fernandez A, Gomez Otero I, Lopez Fernandez S, Santamarta MR, Pastor Perez F, Fluvia Brugues P et al. Influence of the medical treatment schedule in new diagnoses patients with heart failure and reduced ejection fraction. Clin Res Cardiol. 2024; 113(8):1171-1182.

03.

Cabrera Romero E, Ochoa JP, Barriales Villa R, Bermúdez Jiménez FJ, Climent Payá V, Zorio E et al. Penetrance of Dilated Cardiomyopathy in Genotype-Positive Relatives. J. Am. Coll. Cardiol. 2024; 83(17):1640-1651.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 1

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 1

Other clinical studies, 3

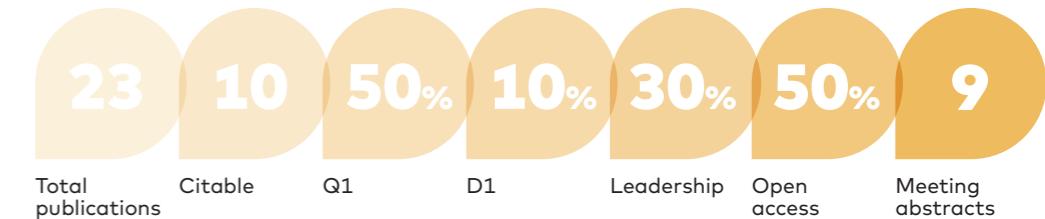
Total active clinical studies 5

6.5.2

Systemic Diseases Area

Obstetrics and Gynaecology

SCIENTIFIC OUTPUT



HR

Manager

Díez Itza, Irene

Team

Senior Researcher

Jaunarena Marín, Ibon

Postdoctoral Researcher

Arrue Gabilondo, Miren
Belar Ortega, María Joséfa

Permanent Clinical Researcher

Gorostidi Pulgar, Mikel
Lekuona Artola, María Aranzazu



TRANSFER

Patent families:

1. Method and device for detecting hypoxia.

Licensing agreements:

1. Method and device for assessing hypoxia, licensed to the institute's spin-off OPTEC4LIFE S.L.

HIGHLIGHTED ARTICLES

01.

Del Valle D, Ruiz R, Lekuona A, Cobas P, Jaunarena I, Gorostidi M, et al. Superparamagnetic iron oxide (SPIO) for sentinel lymph node detection in vulvar cancer. *Gynecologic Oncology*. 2024; 187:145-150. Factor de impacto 4.5 (Q1, Oncología).

02.

Martín Cameán M, Jaunarena I, Sánchez-Méndez JI, et al. Survival in pregnancy-associated breast cancer patients compared to non-pregnant controls. *Reproductive Biology and Endocrinology*. 2024; 22(1):34. Factor de impacto 4.2 (Q1, *Obstetricia y Ginecología*).

03.

Arriola-Alvarez I, Jaunarena I, Izeta A, Lafuente H. Progenitor Cell Sources for 3D Bioprinting of Lymphatic Vessels and Potential Clinical Application. *Tissue Engineering Part A*. 2024; 30(13-14):353-366. Impact factor 3.5 (Q2, *Biomedical Engineering*).

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 0

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 0

Other clinical studies, 3

Total active clinical studies 4

TRAINING

1

Total doctoral theses defended

Systemic Diseases Area

6.5.3



Otolaryngology and Head and Neck Surgery

HR

Manager

Altuna Mariezcurrena, Xabier

Team

Postdoctoral Researcher

Rey Martínez, Jorge

Permanent Clinical Researcher

Chiesa Estomba, Carlos Miguel

Garcia Iza, Leire

Soriano Reixach, María Montserrat

PROJECTS

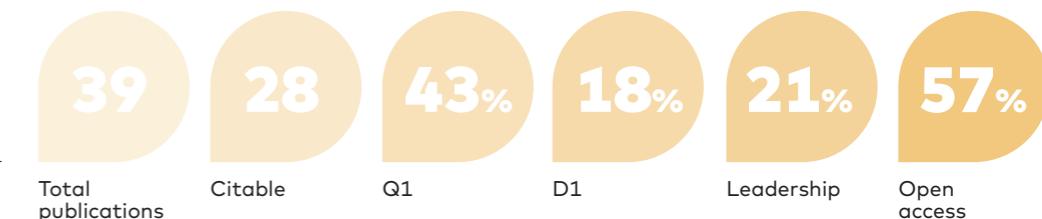
Active projects Public competitive programmes

Local, 1

Total 1



SCIENTIFIC OUTPUT



TRANSFER

Patent families:

1. Development of cartilage grafts and tympanic membrane grafts using 3D bioprinting

HIGHLIGHTED ARTICLES

01.

Sevilla Ayensa M, Pérez Arruti A, Alberich Inchausti M, Larruscain Sarasola E, González García JA, Sistaga Suárez JA et al. Validation of step oncology, a platform for head and neck cancer patients support during and after treatment: preliminary results. Eur. Arch. Oto-Rhino-Laryn. 2024.

02.

Maniaci A, Chiesa Estomba CM, Lechien JR. ChatGPT-4 Consistency in Interpreting Laryngeal Clinical Images of Common Lesions and Disorders. Otolaryngol. Head Neck Surg. 2024; 171(4):1106-1113.

03.

Chiesa Estomba CM, Sanchez Barrueco A, Cammaroto G, Lechien JR, Mayo Yanez M, Cenjor C et al. Prophylactic antibiotics in sialendoscopy: a randomized clinical trial. Eur. Arch. Oto-Rhino-Laryn. 2024; 281(10):5511-5516.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 0

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 0

Other clinical studies, 0

Total active clinical studies 1

TRANSLATIONAL APPLICATION

1

Clinical practice guidelines

Systemic Diseases Area
6.5.4 Paediatrics

AWARDED HR POSITIONS

Public competitive programmes

1

Release from duties
Researchers

HR

Manager

Martí Carrera, Itxaso

Team

Postdoctoral Researcher

Apilanez Urkiola, Miren Alicia
Corcuera Elosegui, Paula
Gorroxategi Gorroxategi, Pedro
Korta Murua, Jose Javier
Larrea Tamayo, Elene
Luengo Etxebeste, Aitziber
Muga Zuriarrain, Oihana
Rezola Arcelus, Erika
Sardon Prado, Olaia

Permanent Clinical Researcher

Calvo Monge, Cristina
Camara Otegui, Amaia
De La Cuevas Teran, Maria Isabel
García Abos, Miriam
García de Andoin Barandiaran, Nagore
Juaristi Irureta, Saioa
Rocandio Cilveti, Beatriz
Satrústegi Aritziturri, Miren
Serrano Pejenaute, Idoia
Tarabini-Castellani Ciorcia, Beatriz Maria
Uriz Monaut, Jose Javier

Senior Research Technician

Urgel Muñoz, Paola Pilar

PROJECTS

Active projects

Public competitive programmes

Autonomous, 3

Active projects

Private competitive programmes

National, 1

Autonomous, 4

Total 8

Public competitive programme projects awarded

European, 1

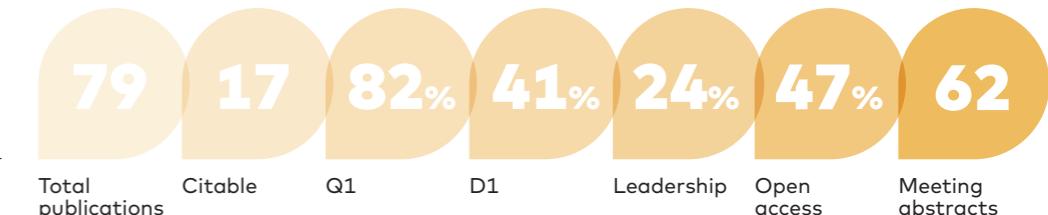
National, 1

Autonomous, 2

Local, 3

Total 7

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Andina Martínez D, Claret Teruel G, Gijón Mediavilla M, Cámará Otegui A, Baños López L, de Miguel Lavisier B et al. Nirsevimab and Acute Bronchiolitis Episodes in Pediatric Emergency Departments. *Pediatrics*. 2024; 154(4):

02.

Rodriguez Fernandez R, Xu Z, Moreno Galdo A, Sardon O, Rubi T, Castillo Corullon S et al. Longitudinal transcriptional immune profiles and persistent wheezing in moderate-to-late preterm infants. *Pediatr Allergy Immunol*. 2024; 35(10):14261-14261.

03.

Muñoz Oreja M, Sandoval A, Bruland O, Perez Rodriguez D, Fernandez Pelayo U, de Arbina AL et al. Elevated cholesterol in ATAD3 mutants is a compensatory mechanism that leads to membrane cholesterol aggregation. *Brain*. 2024; 147(5):1899-1913.

TRAINING



CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 2

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 1

Other clinical studies, 2

Total active clinical studies 5

6.5.5

Systemic Diseases Area

Respiratory and Pleural Pathology

HR**Manager**

García-Zamalloa Zamalloa, Alberto
Salegi Etxebeste, Iñaki

Team**PhD Student**

Aguinagalde Valiente, Borja
Royo Gutierrez, Iñaki

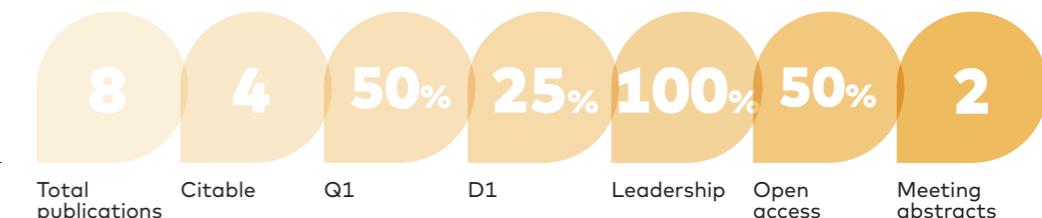
Permanent Clinical Researcher

Aguinagalde Valiente, Borja
Royo Guitierrez, Iñaki
Gil Rodríguez, Eva Lorea
Gómez Domínguez, Celia Fátima
Inchausti Iguñiz, Marta
Juaristi Abaunz, María Aranzazu
Labeguerie Arenaza, Beñat
Miguel Arce, Juan Antonio
Rezola Carasusan, Alejandro
Rivas Guerrero, Agustina
Segués Merino, Nerea
Zabaleta Jiménez, Jon
Zufiaurre Echeverría, Ane

PROJECTS**Active projects**
Public competitive programmes

International, 1

Total 1

SCIENTIFIC OUTPUT**TRANSFER****Patent families:**

1. Design and validation of a medical device for post-mortem lung biopsy in animals and humans

Intellectual property:

1. PLEURA APP

HIGHLIGHTED ARTICLES

01.

Aguinagalde B, Ferrer Bonsoms JA, López I, Lizarbe IA, Fernández Monge A, Recuero JL et al. Comparison of 5-Year Survival and Disease Recurrence After Trisegmentectomy or Left Upper Lobectomy: A Propensity Score Analysis of the National GEVATS Database. *Arch. Bronconeumol.* 2024; 60(11):705-713

02.

Zabaleta J, Blasco A, Esnal T, Aguinagalde B, López IJ, Fernandez Monge A et al. Clinical trial on nurse training through virtual reality simulation of an operating room: assessing satisfaction and outcomes. *Cir Esp (Engl Ed)*. 2024; 102(9):469-476.

03.

López I, Aguinagalde B, Urreta I, Royo I, Bolufer S, Sánchez L et al. Presurgical invasive mediastinal staging in lung cancer, unexpected N2 and long-term survival: a registry-based study with data from the Spanish group for video-assisted thoracic surgery. *J. Thorac. Dis.* 2024; 16(5):2856-2865.

CLINICAL TRIALS**Clinical Research**

Clinical trials with medicinal products (MPs), 0

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 3

Other clinical studies, 1

Total active clinical studies 4

6.6

Epidemiology and Public Health Area

EPIDEMIOLOGY AND PUBLIC HEALTH AREA

Primary Care

Environmental Epidemiology and Child Development

Epidemiology of Chronic and Communicable Diseases

Financial Evaluation of Chronic Diseases

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Integration of the various research groups within the area being coordinated.
- Promotion of research lines and intra-area collaboration.
- Development of new research lines in collaboration between 2 or more groups in the area.
- Production of research results involving members of 2 or more groups in the area.
- Promotion of research careers within the area.

Most Notable Publications in 2024

Gröniger M, Sabin J, Kaaks R, Amiano P, Aune D, Castro NC et al. Associations of milk, dairy products, calcium and vitamin D intake with risk of developing Parkinson's disease within the EPIC4ND cohort. *Eur. J. Epidemiol.* 2024; 39(11):1251-1265.

Errasti N, Lertxundi A, Barroeta Z, Alvarez JI, Ibarluzea J, Irizar A et al. Temporal change and impact on air quality of an energy recovery plant using the M-BACI design in Gipuzkoa. *Chemosphere.* 2024; 363142809-142809.

Estadilla CDS, Mar J, Ibarroondo O, Stollenwerk N, Aguiar M. Impact of High Covid-19 Vaccination Rate in an Aging Population: Estimating Averted Hospitalizations and Deaths in the Basque Country, Spain Using Counterfactual Modeling. *J. Epidemiol. Glob. Health.* 2024; 14(3):1289-1299.

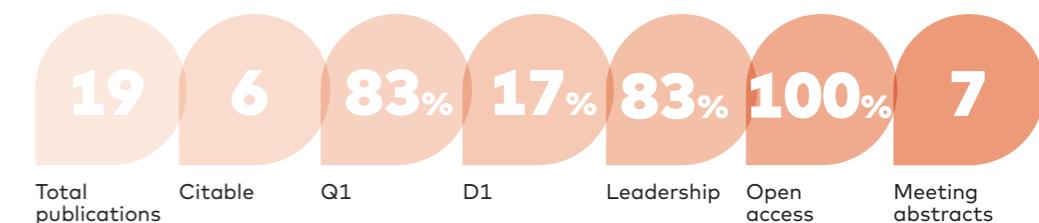
Dicken SJ, Dahm CC, Ibsen DB, Olsen A, Tjønneland A, Louati Hajji M et al. Food consumption by degree of food processing and risk of type 2 diabetes mellitus: a prospective cohort analysis of the European Prospective Investigation into Cancer and Nutrition (EPIC). *Lancet Reg Health Eur.* 2024; 46101043-101043.



6.6.1

**Epidemiology and Public Health Area**

Primary Care

SCIENTIFIC OUTPUT**HR****Manager**

Vergara Micheltorena, Itziar
Rotaeché del Campo, Rafael

Team**Senior Researcher**

Vrotsou, Kalliopi

Postdoctoral Researcher

Etxeberria Agirre, Miren Arritokieta
Gutiérrez Stampa, María Angeles

Permanent Clinical Researcher

Antón Rodrigo, Iván
Apalategi Gómez, Uxune
Barral Juez, Iosu
Del Campo Peña, Emma
Díez Ruiz, Ana Isabel
Gamboa Moreno, Estíbaliz
Garaikoetxea Iturriarri, Ana Isabel
González Miguel, Raquel
Güell Pelayo, Carolina

Supporting Researcher

Mateo Abad, Maider

Senior Research Technician

Hernández González, Miriam
Sanchez Sanchez, Clara

PROJECTS**Active projects****Public competitive programmes**

International, 1

National, 9

Autonomous, 8

Total 18

Public competitive programme projects awarded

National, 3

Autonomous, 3

Total 6

TRANSFER**Patent families:**

1. Device for assessing functional capacity.
2. Identification of molecular patterns for diagnosis and stratification of frail individuals.

Licensing agreement:

1. Device for assessing functional capacity.
Licensed to BIOLAN S.L.

HIGHLIGHTED ARTICLES

01.

Juste RA, Vrotsou K, Mateo Abad M, Gutiérrez Stampa MA, Rotaeché R, Vergara I et al. Non-specific protection against severe COVID-19 associated to typhoid fever and DTP vaccination. *Heliyon*. 2024; 10(9):

02.

Sanchez A, Pijoan JI, de Rozas RS, Lekue I, San Vicente R, Quindimil JA et al. De-imFAR phase II project: a study protocol for a cluster randomised implementation trial to evaluate the effectiveness of de-implementation strategies to reduce low-value statin prescribing in the primary prevention of cardiovascular disease. *Bmj Open*. 2024; 14(4):

03.

Regalado de Los Cobos J, Vrotsou K, Onaindia Ecenarro MJ, Isasi Otaolea J, Aramburu Zubiaurre M, Millet Sampedro M et al. Proposing a workload indicator for hospital at home patients in Osakidetza- Basque Public Health Service. *J. Healthc. Qual. Res.* 2024; 39(2):80-88.

CLINICAL TRIALS**Clinical Research**

Clinical trials with medicinal products (MPs), 1

Clinical research with medical devices (MDs), 0

Observational studies (with MPs and MDs), 2

Other clinical studies, 1

Total active clinical studies 4

6.6.2

Epidemiology and Public Health Area

Environmental Epidemiology and Child Development

HR

Manager

Ibarluzea Maurolagoitia, Jesús María
Lertxundi Manterola, Aitana

Team

Senior Researcher

Santa Marína Rodríguez, Loreto

Postdoctoral Researcher

Álvarez Uriarte, Jon Iñaki
Andiarena Villaverde, Ainara
Arranz Freijo, Enrique
Arregi Otxotorena, Ane
Azurmendi Imaz, Aitziber
Babarro Vélez, Izaro
Barreto Zarza, Florencia Belén
Barroeta Legarreta, Ziortza
Ferro Uríguen, Alexander
Irizar Loibide, Amaia
Jimeno Romero, Alba
Lertxundi Iribar, Nerea
Macía Guerrero, Patricia
Subiza Pérez, Mikel
Vegas Moreno, Oscar
Zubero Oleagoitia, Miren Begoña

Permanent Clinical Researcher

Acha Morcillo, Joana
Urbieta Macazaga, Nerea

PhD Student

Luque García, Leire
San Román Martínez, Ane
Zabaleta Camino, Carlos

Senior Research Technician

Bereziartua Aranzabal, Ainhoa
Otamendi Garitano, Maialen

PROJECTS

Active projects Public competitive programmes

National, 3

Autonomous, 2

Local, 1

Active projects Private competitive programmes

National, 1

Total 7

Public competitive programme projects awarded

National, 1

Autonomous, 1

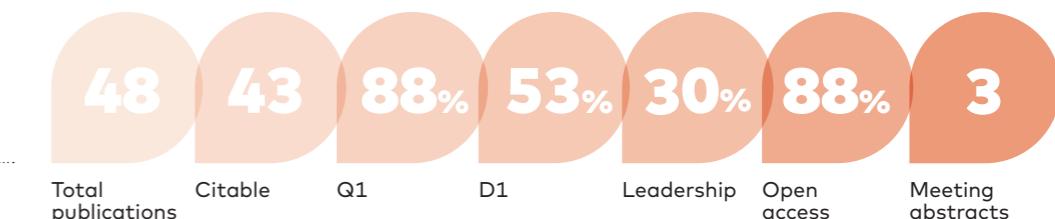
Local, 1

Private competitive programme projects awarded

National, 1

Total 4

SCIENTIFIC OUTPUT



HIGHLIGHTED ARTICLES

01.

Errasti N, Lertxundi A, Barroeta Z, Alvarez JI, Ibarluzea J, Irizar A et al. Temporal change and impact on air quality of an energy recovery plant using the M-BACI design in Gipuzkoa. Chemosphere. 2024; 363142809-142809.

02.

Arregi A, Vegas O, Lertxundi A, García Baquero G, Ibarluzea J, Andiarena A et al. Hair cortisol determinants in 11-year-old children: Environmental, social and individual factors. Horm Behav. 2024; 164105575-105575.

03.

Arregi A, Vegas O, Lertxundi A, Silva A, Ferreira I, Bereziartua A et al. Road traffic noise exposure and its impact on health: evidence from animal and human studies-chronic stress, inflammation, and oxidative stress as key components of the complex downstream pathway underlying noise-induced non-auditory health effects. Environ Sci Pollut Res Int. 2024; 31(34):46820-46839.

TRAINING

2

Total doctoral
theses defended

2

Internationally
recognised theses

Epidemiology and Public Health Area

6.6.3 Epidemiology of Chronic and Communicable Diseases

HR

Group lead researcher

Amiano Etxezarreta, Pilar
Jiménez Zabala, Ana

Team**Postdoctoral Researcher**

Abilleira Cillero, Eunate
Imaz Goienetxea, Liher
Sarasqueta Eizaguirre, Cristina

Investigador/a Clínico Estable

Aginagalde Llorente, Adrian Hugo

PhD Student

Gil Majuelo, Leire
López de Munain Marqués, Arantza
Mokoroa Carollo, Olatz
Sancho Martínez, Rosa María

Senior Research Technician

Aizpurua Atxega, Amaia
Alvarez Guerrico, Lorea
Dorronsoro Erauskin, Ane

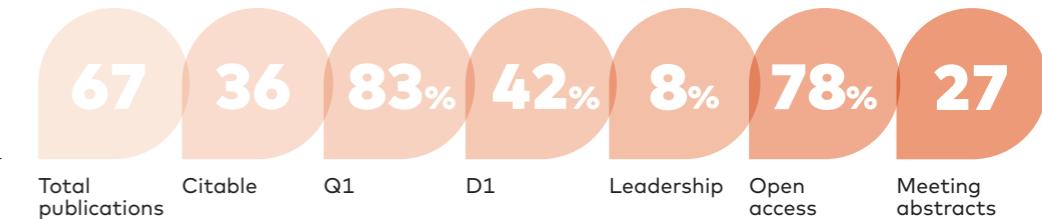
PROJECTS

**Active projects
Public competitive
programmes**

National, 3

Autonomous, 1

Total 4

SCIENTIFIC
OUTPUT

HIGHLIGHTED ARTICLES

01.

Gröninger M, Sabin J, Kaaks R, Amiano P, Aune D, Castro NC et al. Associations of milk, dairy products, calcium and vitamin D intake with risk of developing Parkinson's disease within the EPIC4ND cohort. *Eur. J. Epidemiol.* 2024; 39(11):1251-1265.

02.

Dicken SJ, Dahm CC, Ibsen DB, Olsen A, Tjønneland A, Louati Hajji M et al. Food consumption by degree of food processing and risk of type 2 diabetes mellitus: a prospective cohort analysis of the European Prospective Investigation into Cancer and Nutrition (EPIC). *Lancet Reg Health Eur.* 2024; 46101043-101043.

03.

Marcos Delgado A, Martín Sánchez V, Molina Barceló A, Alonso Molero J, Pérez Gómez B, Pollán M et al. Health-Related Quality of Life in Long-Term Colorectal Cancer Survivors. *Healthcare.* 2024; 12(19):

6.6.4

Epidemiology and Public Health Area

Financial Evaluation of Chronic Diseases

HR

Group lead researcher

Merino Hernández, María Luisa

Team

Postdoctoral Researcher

Arrospide Elgarresta, Arantzazu
Etxebarria Foronda, Iñigo
Ibarrondo Olagüenaga, Oliver
Jauregui García, María Luz
Soto Ruiz De Gordoa, Myriam



PROJECTS

Active projects

Public competitive programmes

International, 1

National, 1

Autonomous, 1

Active projects

Private competitive programmes

Autonomous, 1

Total 4

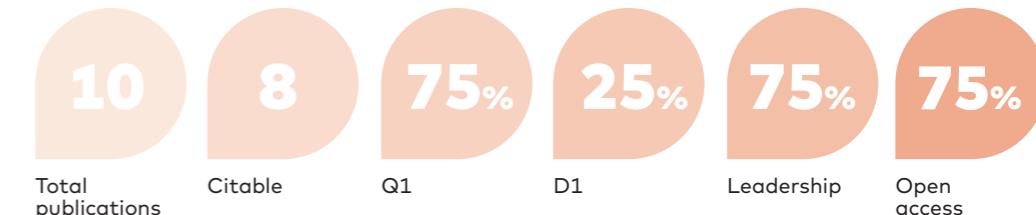
Public competitive programme projects awarded

International, 1

Autonomous, 1

Total 2

SCIENTIFIC OUTPUT



TRANSFER

Intellectual property registration:

1. Software for diabetic retinopathy screening.

Licensing agreement:

1. Software for diabetic retinopathy screening, licensed to ULMA MEDICAL TECHNOLOGIES S. Coop.

HIGHLIGHTED ARTICLES

01.

Estadilla CDS, Mar J, Ibarrondo O, Stollenwerk N, Aguiar M. Impact of High Covid-19 Vaccination Rate in an Aging Population: Estimating Averted Hospitalizations and Deaths in the Basque Country, Spain Using Counterfactual Modeling. *J. Epidemiol. Glob. Health.* 2024; 14(3):1289-1299.

02.

Mar J, Zubiagirre U, Larrañaga I, Soto Gordoa M, Mar Barrutia L, González Pinto A et al. Disparities by Socioeconomic Status and Diagnosis of Dementia in the Prescribing of Antipsychotics in a Real-World Data Population Over 60 Years of Age. *J. Alzheimers Dis.* 2024; 100(2):645-655.

03.

Arrospide A, Ibarrondo O, Blasco Aguado R, Larrañaga I, Alarid Escudero F, Mar J. Using Age-Specific Rates for Parametric Survival Function Estimation in Simulation Models. *Med Decis Making.* 2024; 44(4):359-364.

6.7

Bioengineering Area

BIOENGINEERING AREA

Computational Biology and Systems Biomedicine

Bioengineering in Regeneration and Cancer

E-Health

Stem Cells and Ageing

Scientific objectives and progress in 2024

The following monitoring objectives were successfully achieved during 2024:

- Promote the translational application of research results.
- Integrate various research groups within the area.
- Explore new inter-area research lines.
- Promote collaboration with international groups and/or organisations.
- Foster collaboration with the R&D&I ecosystem and the business network of the Basque Autonomous Community.
- Increase in the value of outputs transferred to the Research Results Transfer Office.
- Incorporate best practices aligned with RRI (Responsible Research and Innovation).

Most Notable Publications in 2024

Vázquez-Aristizabal P, Henriksen-Lacey M, García-Astrain C, Jimenez de Aberasturi D, Langer J, Epelde C, Litti L, Liz-Marzán LM, Izeta A. Biofabrication and Monitoring of a 3D Printed Skin Model for Melanoma. *Adv. Healthc. Mater.* 2024; 13(27): e2401136.

Arróspide Elgarresta M, Gerovska D, Soto Gordoa M, Jauregui García ML, Merino Hernández ML, Araúzo Bravo MJ. Chronic disease incidence explained by stepwise models and co-occurrence among them. *iScience*. 2024; 27(9):110816.

Bakhshandeh, S., Heras, U., Taïeb, H. M., Varadarajan, A. R., Lissek, S. M., Hücker, S. M., Lu, X., Garske, D. S., Young, S. A. E., Abaurrea, A., Caffarel, M. M., Riestra, A., Bragado, P., Contzen, J., Gossen, M., Kirsch, S., Warfsmann, J., Honarnejad, K., Klein, C. A., Cipitria, A. "Dormancy-inducing 3D engineered matrix uncovers mechanosensitive and drug-protective FHL2-p21 signaling axis". *Science Advances*, 2024, 10, 45, ead3997.

Mulet I, Grueso Cortina C, Cortés Cano M, Gerovska D, Wu G, Iakab SA et al. TET3 regulates terminal cell differentiation at the metabolic level. *Nat. Commun.* 2024; 15(1):9749.



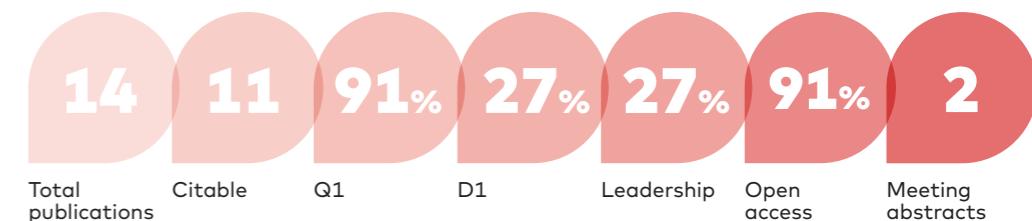
Bioengineering Area

6.7.1



Computational Biology and Systems Biomedicine

SCIENTIFIC OUTPUT



HR

Manager

Araúzo Bravo, Marcos Jesús

Team

Senior Researcher

Gerovska, Daniela Ivanova
Knafo, Dina Shira

Postdoctoral Researcher

Álvarez de Eulate López, Coloma

Permanent Clinical Researcher

Unzurrunzaga Altube, Maite

Predoctoral Researcher

Bohoyo Bengoetxea, Julen
Fernández Moreno, Patricia

PROJECTS

Active projects

Public competitive programmes

European, 2

National, 3

Autonomous, 9

Total 14

Public competitive programme projects awarded

National, 1

Autonomous, 1

Total 2

TRANSFER

Patent families:

1. Device for assessing functional capacity.

Licensing agreement:

1. Functional capacity analysis device, licensed to BIOLAN S.L.

TRAINING

1

Total doctoral theses defended

HIGHLIGHTED ARTICLES

01.

Arróspide Elgarresta M, Gerovska D, Soto Gordoa M, Jauregui García ML, Merino Hernández ML, Araúzo Bravo MJ. Chronic disease incidence explained by stepwise models and co-occurrence among them. *iScience*. 2024; 27(9):110816.

02.

Mulet I, Grueso Cortina C, Cortés Cano M, Gerovska D, Wu G, Iakab SA et al. TET3 regulates terminal cell differentiation at the metabolic level. *Nat. Commun.* 2024; 15(1):9749.

03.

Gerovska D, Fernández Moreno P, Zabala A, Araúzo Bravo MJ. Cell-Free Genic extrachromosomal Circular DNA Profiles of DNase Knockouts Associated with Systemic Lupus Erythematosus and Relation with Common Fragile Sites. *Biomedicines*. 2024; 12(1):80.

6.7.2

Bioengineering Area

Bioengineering in Regeneration and Cancer

SCIENTIFIC OUTPUT



HR

Manager

Cipitria Sagardia, Amaia

Team

Postdoctoral Researcher

Mitxelena Iribarren, Oihane
Pardo Sánchez, Jose Miguel
Salvador Moreno, Naike

Predoctoral Researcher

Berasain Garmendia, Jone
Cárdenas Perez, Rocio
Fallert, Laura
Heras Manterola, Unai

Lab Manager

Iturriaga Oñarte-Echevarria, Leire

PROJECTS

Active projects Public competitive programmes

European, 4

National, 1

Autonomous, 2

Active projects Private competitive programmes

National, 2

Total 9

Public competitive programme projects awarded

International, 2

National, 1

Autonomous, 1

Private competitive programme projects awarded

National, 1

Total 5

HIGHLIGHTED ARTICLES

01.

Bakhshandeh, S., Heras, U., Taïeb, H. M., Varadarajan, A. R., Lissek, S. M., Hücker, S. M., Lu, X., Garske, D. S., Young, S. A. E., Abaurrea, A., Caffarel, M. M., Riestra, A., Bragado, P., Contzen, J., Gossen, M., Kirsch, S., Warfsmann, J., Honarnejad, K., Klein, C. A., Cipitria, A. "Dormancy-inducing 3D engineered matrix uncovers mechanosensitive and drug-protective FHL2-p21 signalling axis". *Science Advances*, 2024, 10, 45, ead3997.

02.

Young, S. A. E., Heller, A.-D., Garske, D. S., Rummel, M., Qian, V., Ellinghaus, A., Duda, G. N., Willie, B. M., Grüneboom, A., Cipitria, A. "From breast cancer cell homing to the onset of early bone metastasis: The role of bone (re)modeling in early lesion formation", *Science Advances*, 2024, 10(8), eadj0975.

03.

Tam, N.*, Becker, A., Mangiarotti, A., O., Cipitria, A.*; Dimova, R.* "Extracellular vesicle mobility in collagen I hydrogels is influenced by matrix-binding integrins", *ACS Nano*, 2024, 18, 43, 29585–29601

TRAINING

1

Total doctoral
theses defended

1

Internationally
recognised theses

Bioengineering Area
6.7.3 E-Health



HR

Managers

Macia Oliver, Iván

Team

Postdoctoral Researcher

Beristain Iraola, Andoni
Bertelsen Simonetti, Álvaro
Cortés Acosta, Camilo Andrés
Epelde Unanue, Gorka
Garin Muga, Alba
Goikolea Vives, Ane
López Linares Roman, Karen
Martin Andonegui, Cristina

Permanent Clinical Researcher

Comba Miranda, Jhon William
De Blas Bravo, Mariano
Del Cura Rodriguez, Jose Luis
Egaña Barreneche, José María
García Familiar, Ainhoa
Marquina González, Ruth

Predoctoral Researcher

Amaya Rodríguez, Isabel De Los Reyes
Artola Balda, Garazi
García González, María Jesus
Kerexeta Sarriegi, Jon
Perez Herrera, Laura Valeria

Senior Research Technician

Sucre Rodríguez, Aurora María
Hernandez Jimenez, Mikel

HIGHLIGHTED ARTICLES

01.

Fiorentino MC, Villani FP, Benito Herce R, González Ballester MA, Mancini A, López Linares Román K. An intensity-based self-supervised domain adaptation method for intervertebral disc segmentation in magnetic resonance imaging. *Int. J. Comput. Assist. Radiol. Surg.* 2024; 19(9):1753-1761.

02.

Kerexeta Sarriegi J, García Navarro T, Rollan Herrera M, Larburu N, Espejo Mambié MD, Beristain Iraola A et al. Analysing disease trajectories in a cohort of 71,849 Patients: A visual analytics and statistical approach. *Int. J. Med. Inform.* 2024; 188105466-105466.

03.

Osorio Marulanda PA, Epelde G, Hernandez M, Isasa I, Reyes NM, Iraola AB. Privacy Mechanisms and Evaluation Metrics for Synthetic Data Generation: A Systematic Review. *IEEE ACCESS.* 2024; 1288048-88074.

CLINICAL TRIALS

Clinical Research

Clinical trials with medicinal products (MPs), 0

Clinical research with medical devices (MDs), 1

Observational studies (with MPs and MDs), 1

Other clinical studies, 0

Total active clinical studies

2

TRAINING



Total doctoral theses defended

6.7.4

Bioengineering Area

Stem Cells and Ageing

AWARDED HR POSITIONS

Public competitive programmes

1

Postdoctoral contracts

1

Grants

HR

Managers

Alonso Martín, Sonia
Izeta Permisán, Ander

Team

Postdoctoral Researcher

Fuertes Álvarez, Sandra
García Puga, Mikel
Lafuente Echevarría, Héctor
Vildosola Esturo, Susana
Yndriago Acha, Laura

Permanent Clinical Researcher

Bonilla Zagala, Mario
Jimeno Badiola, María Begoña
Ormaechea Pérez, Nerea

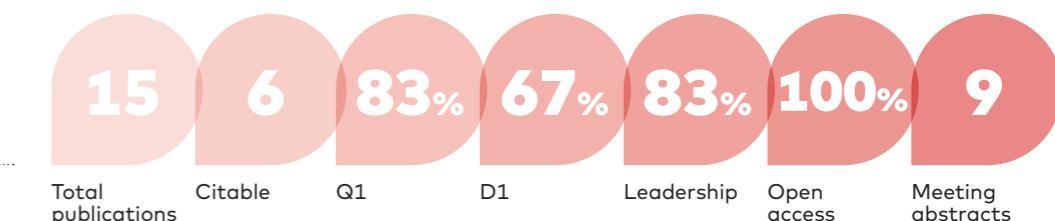
Predoctoral Researcher

Alonso Álvarez, Pedro
Arriola Álvarez, Inazio
Azcue Juaristi, Ignacio
Elicegui Aguirre, Amaia
Gardeazabal Martínez De Espronceda, Leire
Irastorza Lorenzo, Ainhoa
Pikatza Menoio, Oihane
Vidal Gil, Ainhoa

Senior Research Technician

Salcedo Vera, Juan Manuel

SCIENTIFIC OUTPUT



PROJECTS

Active projects

Public competitive programmes

International, 3

National, 5

Autonomous, 7

Local, 1

Total 15

Public competitive programme projects awarded

International, 1

National, 4

Autonomous, 3

Total 5

TRANSFER

Patent families:

1. Method and device for detecting hypoxia.
2. Portable bioprinter with sterile chamber.
3. Development of customised bioinks based on nanoparticles for the 3D printing of dynamic breast cancer models.
4. Development of cartilage and tympanic membrane grafts using 3D bioprinting.
5. FOXO inhibitors: A new treatment for Amyotrophic Lateral Sclerosis (ALS).

HIGHLIGHTED ARTICLES

01.

Vázquez-Aristizabal P, Henriksen-Lacey M, García-Astrain C, Jimenez de Aberasturi D, Langer J, Epelde C, Litti L, Liz-Marzán LM, Izeta A. Biofabrication and Monitoring of a 3D Printed Skin Model for Melanoma. *Adv. Healthc. Mater.* 2024; 13(27): e2401136.

02.

Zufiría M, Pikatza-Menoio O, Garciandia-Arcelus M, Bengoetxea X, et al. Dysregulated FOXO1 activity drives skeletal muscle intrinsic dysfunction in amyotrophic lateral sclerosis. *Acta Neuropathol.* 2024; 148(1): 43.

03.

Iruzubia P, Damborenea A, Ioghen M, Bajew S, Fernandez-Torrón R, et al. Biallelic variants in SNUPN cause a limb girdle muscular dystrophy with myofibrillar-like features. *Brain.* 2024; 147(8): 2867-2883.

TRAINING

2

Total doctoral theses defended

1

Internationally recognised theses

Non-prioritised area

6.8

Associated Clinical Group

HIGHLIGHTED ARTICLES

01.

Currò R, Dominik N, Facchini S, Vegezzi E, Sullivan R, Galassi Deforje V et al. Role of the repeat expansion size in predicting age of onset and severity in RFC1 disease. *Brain*. 2024; 147(5):1887-1898.

02.

Bakhshandeh S, Heras U, Taïeb HM, Varadarajan AR, Lissek SM, Hücker SM et al. Dormancy-inducing 3D engineered matrix uncovers mechanosensitive and drug-protective FHL2-p21 signaling axis. *Sci. Adv.* 2024; 10(45).

03.

Torres Esquius S, Llop Guevara A, Gutiérrez Enríquez S, Romey M, Teulé À, Llort G et al. Prevalence of Homologous Recombination Deficiency Among Patients With Germline RAD51C/D Breast or Ovarian Cancer. *JAMA Netw. Open*. 2024; 7(4).

04.

Zufiría M, Pikatza Menoio O, Garciandia Arcelus M, Bengoetxea X, Jiménez A, Elicegui A et al. Dysregulated FOXO1 activity drives skeletal muscle intrinsic dysfunction in amyotrophic lateral sclerosis. *Acta Neuropathol.* 2024; 148(1):43-43.

05.

González Calle V, Rodríguez Otero P, Sureda A, De Arriba F, Reinoso M, Ribas P et al. Selinexor, daratumumab, bortezomib and dexamethasone for the treatment of patients with relapsed or refractory multiple myeloma: results of the phase II, nonrandomized, multicenter GEM-SELIBORDARA study. *Haematology*. 2024; 109(7):2219-2228

PROJECTS

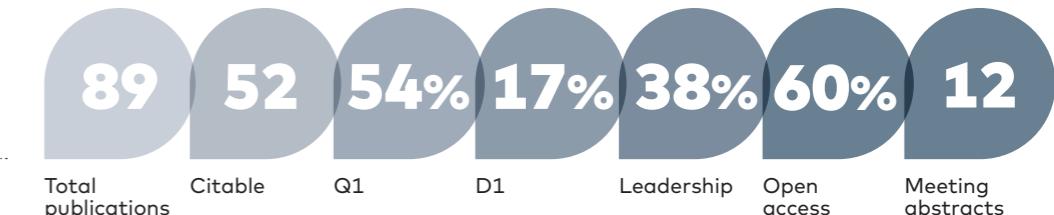
56

Total number of active projects in 2024

131

Total number of active clinical trials in 2024

SCIENTIFIC OUTPUT



TRANSFER

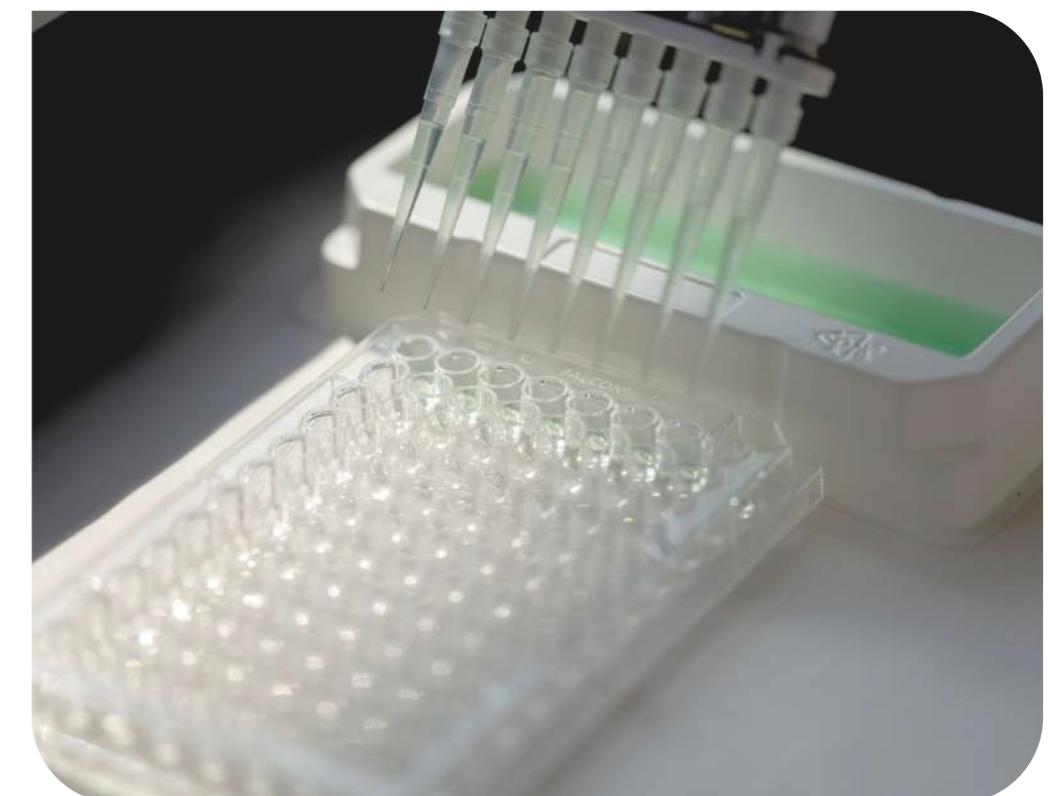
Patent families:

1. Portable device for exercising bedridden patients.
2. ELOVL6 ELA

TRANSLATIONAL APPLICATION

1

Clinical practice guidelines



Financial Data



Financial Data

This includes not only the accounts of the Biogipuzkoa Health Research Institute Association, but also those of the Biogipuzkoa HRI as a whole (same procedure as for the Executive Committee and General Assembly).

| | |
|--|----------------|
| • Income | €16,985,744.00 |
| • Contributions from corporate entities | €6,170,601.00 |
| • External funding | €10,815,143.00 |
| • External competitive funding | |
| • External non-competitive funding | |
| • External funding through billing of R&D&I services | |

Income linked to indirect costs comes from three funding sources:

| | |
|---|----------------------|
| • Projects | |
| • Donations | |
| • Service provision | |
| • Total linked income Indirect costs | €1,279,128.64 |

| | |
|--------------------------------|----------------|
| • Expenses | €16,964,370.00 |
| • Operating expenses | |
| • Personnel expenses | |
| • Depreciation of fixed assets | |

The use of indirect costs is intended for:

1. Structural operating expenses, main items:
 - a) Provision of consultancy, prevention and communication services.
 - b) Inventory-related items.
2. Personnel expenses for administration, platforms and research support (not funded through competitive calls/other grants/billing of R&D&I services).

7

Details of income from corporate entities

Donostialdea IHO (Osakidetza-SVS), BIOEF, University of the Basque Country-Euskal Herriko Unibertsitatea.

Key areas:

- **Donostialdea IHO**
Operations and Staff
- **Health Department**
 - Registered Grant (Strategic Grant Plan)
 - Acceleration of the development and implementation of advanced therapies in the Basque Country
 - Medtech Initiative
- **Ikerbasque Foundation**
Staff (Framework Collaboration Agreement)

Balance sheet

| ASSETS | 31/12/24 | 31/12/23 |
|---|----------------------|----------------------|
| A) Non-current assets | 19,290,093.50 | 16,968,861.95 |
| B) Current assets | 21,133,765.81 | 17,167,401.98 |
| TOTAL ASSETS | 40,423,859.31 | 34,136,263.93 |
| | 6,287,595.38 | 6,938,731.67 |
| LIABILITIES | 31/12/24 | 31/12/22 |
| A) Net equity | 9,048,155.65 | 7,246,414.01 |
| B) Non-current liabilities | 231.16 | 231.16 |
| B) Current liabilities | 31,375,472.50 | 26,889,618.76 |
| TOTAL NET EQUITY AND LIABILITIES | 40,423,859.31 | 34,136,263.93 |

Innovation



Innovation

Renewal as a Funded Unit of ITEMAS PT23

New unit structure with:

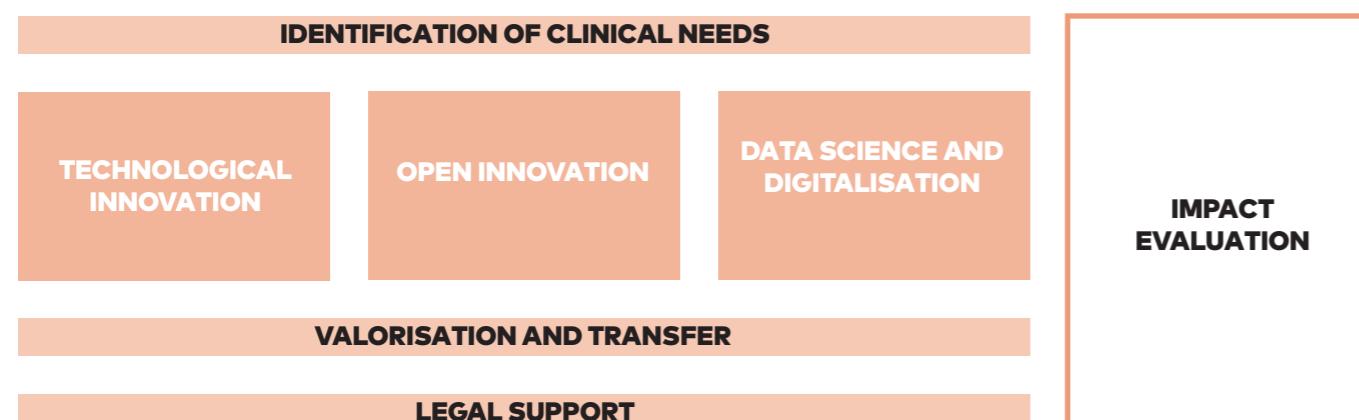
ASSOCIATED UNITS



TECHNOLOGY CENTRES



Strategic lines for promoting innovation



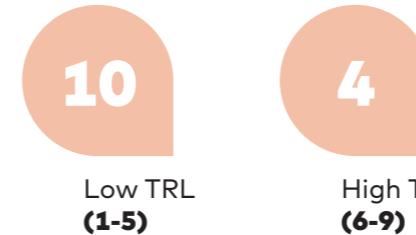
8

TECHNOLOGY TRANSFER



Tools to foster innovation

MEDTECH INITIATIVE



"BONO FOMENTO" FUNDING INSTRUMENT



BOTTOM UP



Innovation conferences

EUROPEAN HEALTH DATA SPACE:

Session on the recently approved European Data Space Regulation, led by Iñigo de Miguel.

October 2024



GIPUZKOA INNOVATES IN HEALTH:

Biogipuzkoa and the Donostialdea IHO brought together around 200 healthcare professionals from the Gipuzkoa IHOs, focusing on the importance of fostering a culture of innovation in healthcare.

November 2024



Communication

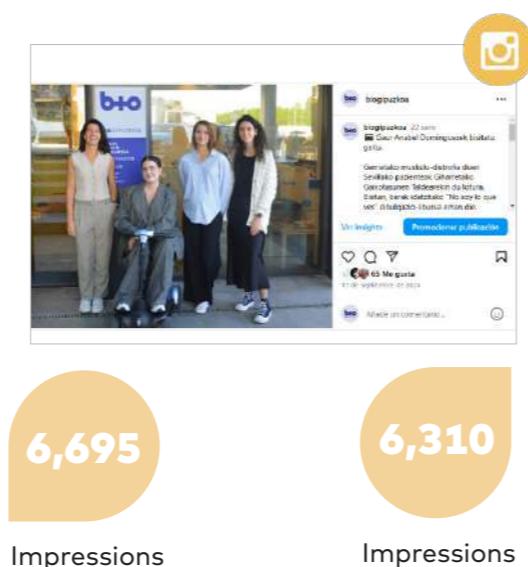


Communication

SOCIAL MEDIA

| | LinkedIn | Twitter | Facebook | Instagram |
|---|----------------|----------------|---------------|----------------|
| Followers | 6,813 | 3,179 | 1,052 | 882 |
| vs 2023 | +27% | +2% | +3% | +36% |
| No. of posts/stories/reels | 481 | 657 | 580 | 391 |
| Impressions | 354,740 | 105,769 | 52,894 | 127,267 |
| vs 2023 | +45% | -47% | +45% | +128% |
| Total interactions (likes, comments, retweets) | 30,413 | 3,145 | 3,806 | 4,576 |
| vs 2023 | +46% | -16% | -3% | +93% |

FEATURED POSTS 2024



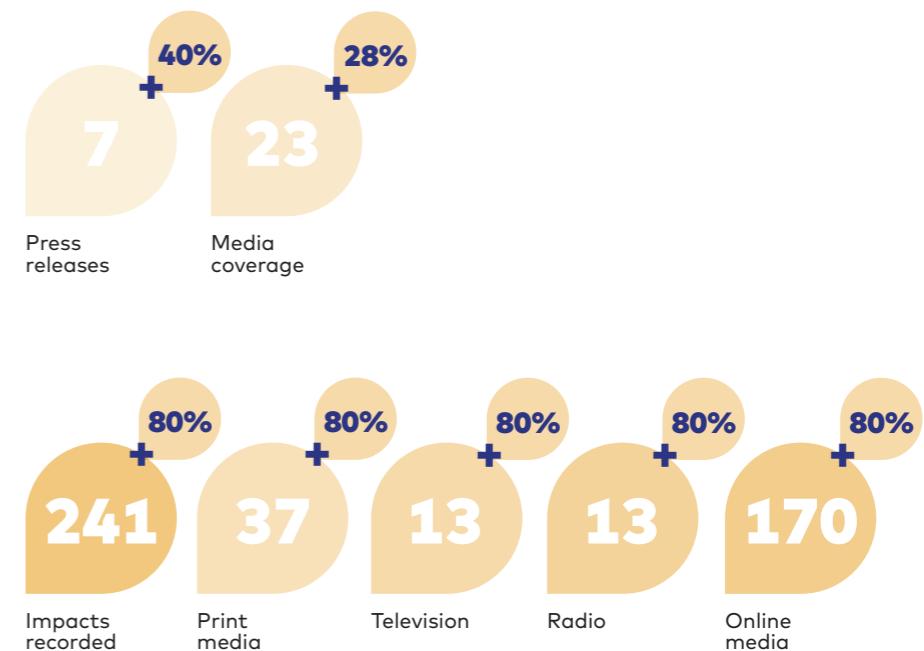
6,695

Impressions
on LinkedIn

6,310

Impressions
on Instagram

THE MEDIA



Percentages vs 2023

WEBSITE

biodonostia.org

51,740

Website visits

News stories published

64

58

Events scheduled

Responsible Research and Innovation (RRI)



Responsible Research and Innovation (RRI)

ASSOCIATIONS AND CITIZEN PARTICIPATION



Colaboración
Participación en los órganos del instituto
Contra el Cáncer Gipuzkoa
Mas que ideas
Hoja de ruta
Atubivila
Aubixa
Ciudadanía
Katxalin



SCIENTIFIC EDUCATION

10

5
Activities

30
Sessions

649
Participants



ACTIVITIES WITH OTHER ORGANISATIONS

7
Activities

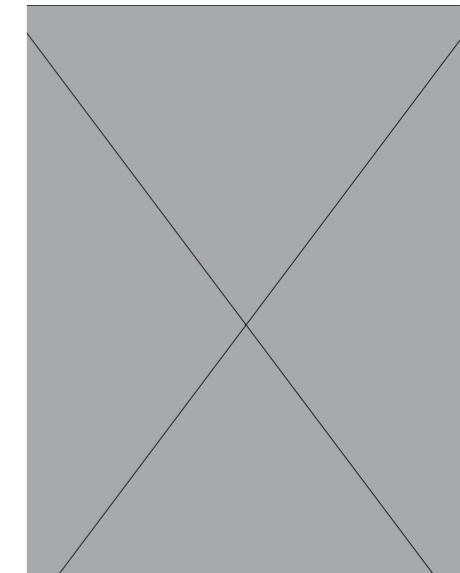
40
Participating staff

165
Dissemination



dss
week
inn

GENDER EQUALITY IN SCIENCE





Scientific Report 2024



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www.biodonostia.org

