iBET
Instituto de Biologia Experimental e Tecnológica

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Highlighting iBET's expertise in vaccine development

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Advancing Vaccines, Protecting Lives: Celebrating World Immunization Week

Highlighting iBET's expertise in vaccine development

To mark World Immunization Week (24 - 30 April), a campaign led by the World Health Organization, iBET highlighted the central role of vaccines in public health, while showcasing its capabilities in vaccine research, development and manufacturing.

Over the past decades, vaccines have been among the most effective tools for saving lives, significantly reducing the global burden of infectious diseases.

In line with this mission, **iBET has established itself as a key partner in advancing vaccine innovation**, supporting international research programs including manufacturing preparedness initiatives.

30 + Years of Experience

For more than 30 years, iBET has built multidisciplinary expertise across molecular biology, virology, bioanalytics, bioprocess engineering, and scale-up and technology transfer.

This integrated approach enables the acceleration of vaccine platforms while ensuring high standards of quality, safety, and efficacy.

Throughout World Immunization Week, iBET shared a series of posts highlighting different areas of its contribution to the field.

Take a look at our communications on:

- Advancing Vaccine Innovation
- Vaccine manufacturing bottlenecks
- iBET role in European Vaccines Hub
- iBET's Vaccine infrastructure

Cutting-edge R&D Facilities

iBET infrastructures provide the technologies required to support every stage of vaccine development, from early process design to manufacturing-ready solutions.

Designed to operate in GMP-compatible environments, these facilities enable scalable processes, ensuring robustness and readiness for real-world application.

> By bridging laboratory research and industrial production, iBET helps accelerate vaccine development

Strengthening Europe's Pandemic Preparedness

Another strategic pillar of iBET's activities is its participation in the **European Vaccines Hub (EVH) for Pandemic Readiness**, a EU-funded initiative focused on enhancing Europe's preparedness for future health crises.

Within this consortium, the Institute is part of Pillar 4 – Regulation and Manufacturing, contributing to the **development of technology transfer roadmaps that ensure efficient vaccine production processes**, including the compliance with regulatory requirements.



Watch here iBET's CEO Paula Alves addressing the institute contribution to EVH.

European Vaccines Hub: One Year of Progress in Pandemic Preparedness

iBET Participates in the First Annual Meeting in Marburg

The European Vaccines Hub (EVH) for Pandemic Readiness has marked its first year with significant progress.
Launched in 2025, the initiative brings together expertise across the full vaccine development pipeline, from early stage research to manufacturing.

This milestone was highlighted at the 1st Annual Meeting in Marburg, on May 19–21, 2026.
Gathering 110 participants, the initiative reviewed its progress and alignment, focusing on speeding up vaccine development, improving data integration, and strengthening coordination with manufacturers for faster emergency responses.

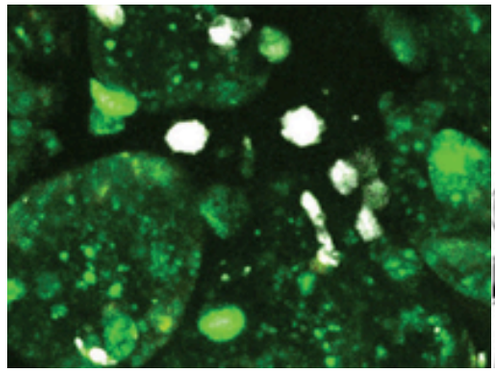
The EVH demonstrates the value of an integrated and collaborative European framework to accelerate pandemic preparedness.

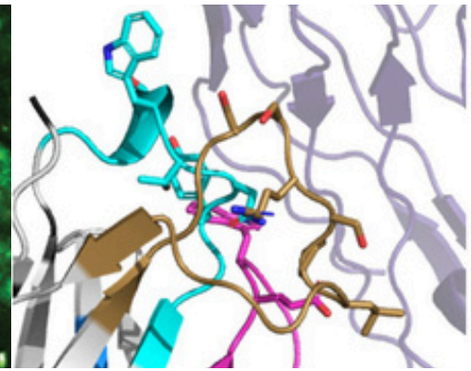
> "iBET is proud to play an active role in this effort, contributing with its capabilities in advanced biomanufacturing."
>
> -Paula Alves, iBET's CEO



Paula Alves (iBET's CEO), Manuel Carrondo (iBET'S Vice President), António Roldão (Head of the Cell-based Vaccines Development Lab) and António Cunha (Head of Biosafety & Sustainability) represented iBET at the EVH 1st annual meeting.

Publications Recognized Among Top-Viewed Worldwide





Advanced Biology

A study by the 3D Advanced Cell Models Lab has been **recognized as a top-viewed article in Advanced Biology**, highlighting its impact in cancer research.

The article presents an advanced 3D cancer model that replicates the breast tumor microenvironment, enabling the testing of new antibody therapies and providing deeper insights into tumor–stroma interactions and immunotherapy strategies.

"Assessing Novel Antibody-based therapies in reconstructive 3D cell models of the tumor Microenvironment"

Protein Science

A collaborative study between iBET's Protein Biophysics for Drug Discovery Lab, Scripps Research, and Merck Healthcare has been **recognized by Protein Science, as one of the journal's most-viewed papers published in 2024.**

This study explored camelid-derived VHH antibodies humanization, identifying key structural features that preserve their stability, binding affinity, and therapeutic potential.

"On the Humanization of VHHs: Prospective Case Studies, Experimental and Computational Characterization of Structural Determinants for Functionality"

Strengthening Global Partnerships at BIO-Europe Spring 2026

iBET and Recipharm Advanced Bio Host On-site Visit

On March 25, iBET welcomed several international biopharma industry representatives to its facilities in Oeiras, in the context of the meeting BIO-Europe Spring 2026, held in Lisbon, Portugal.

The visit was organized in collaboration with **Recipharm Advanced Bio** (formerly iBET's spin-off GenIbet Biopharmaceuticals), highlighting the complementary expertise and capabilities of both organizations.

iBET welcomed also representatives from Oeiras Municipality and NOVA University of Lisbon, highlighting strong regional and academic support for science and innovation.

BIO-Europe Spring is one of Europe's largest biotech partnering conferences, bringing together over 3,700 life sciences leaders to promote international collaboration, business development, and licensing opportunities.

Read more details here.



Visitors had the opportunity to hear lectures from iBET and Genibet Recipharma and visit the infrastrutures.

iBETXplore Day 2026: From Open Exploration to Focused Collaboration

Two complementary moments for internal and external stakeholders were fostered in this year's edition.



Held on May 7 and 8, this year's iBETXplore Meeting gathered 150 participants in a new conference format:

The **Xploration Day** launched the event by presenting scientific advances, bringing together the iBET community and international collaborators to share results from funded projects.

The **Acceleration Day**, shifted the focus to advancing ideas by showcasing ongoing and newly funded projects, and promoting discussions with experts to foster collaborations and strengthen strategic networks.

iBET's Internal Innovation Program

iBETXplore program was created to support bold research ideas from our scientists that can lead to new technologies, methodologies, and research topics. Since its launch in 2017, **59 projects** have been funded with over €4.7M, including seven new projects in 2025 Call.

Read more details here.

Events & Meetings



iBET frequently hosts visits from partners and collaborators, and participates in diverse scientific events.

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Fostering Colaboration: iBET Welcomes Long-term Partners

iBET welcomed delegations from Sanofi, Merck Healthcare, Novartis, and Boehringer Ingelheim

Sanofi Open Day at iBET | May 28

iBET welcomed representatives from Sanofi Portugal scientific teams for an **Open Day celebrating the long-standing collaboration between the two organizations**.
During the event, Sanofi Portugal members Helena Freitas (Country Lead), Duarte Mesquita (Country Medical Lead) and Vitoria Gemas (Medical Affairs Clinical Research Advisor), joined iBET's in discussing the joint commitment to advance next-generation health care solutions



Video highlighting iBET and Sanofi collaboration through iBET's Sanofi Satellite Lab.

Read the full news here.

Merck Healthcare Visit | June 24



Pedro Moura (Merk Portugal), Dimitrios Georgiopoulos (Merck Healthcare), Rita Reis (Merk Portugal), Manuel Carrondo (iBET'S Vice President), Pedro Sousa (Principal Scientist of the Merck Satellite Lab) and Tiago Bandeiras (Head of iBET's Merck Satellite Lab).

For the occasion of the visit of Dimitrios Georgiopoulos, SPV Head of Wider Europe at Merck Healthcare to Merck Portugal, the Merck Satellite Lab team had the pleasure of welcoming Georgiopoulos, Pedro Moura, Managing Director, and Rita Reis, Senior Director Public Affairs, from Merck Portugal, for engaging discussions. **This visit also marked an important milestone, the celebration of 20 years of partnership between iBET and Merck Healthcare.**

Novartis Satellite Lab Visit | July 2

The Novartis Pharma Lab welcomed a delegation from Novartis Global and Novartis Portugal, reinforcing the strong partnership between the two organizations and their shared dedication in advancing innovation in the biopharmaceutical field.
The visit offered a valuable opportunity to deepen collaboration and explore future opportunities with Alexandre Tavares, Global Head of Business Development and M&A Finance at Novartis, alongside Mourad Aboubakr, Country President and General Manager, and Diogo Medina, Country Medical Affairs Head, from Novartis Portugal.
Read the full news here.



Manuel Carrondo (iBET'S Vice President), Ana Paula Batista (Head of iBET's Novartis Satellite Lab), Alexandre Tavares (Novartis) Mourad Aboubakr (Novartis Portugal), Paula Alves (iBET's CEO), and Diogo Medina (Novartis Portugal).

Boehringer Ingelheim Visit | July 6-8

iBET hosted representatives from Boehringer Ingelheim: David Wyatt, Group Head Biotherapeutics Discovery Europe, and Irene Waizenegger, Associate Scientific Director External Innovation.

The visit provided an important opportunity to further strengthen the collaboration between iBET and Boehringer Ingelheim, which has included multiple projects since 2021.
This meeting allowed to review ongoing activities, launch a new biotherapeutics project, and explore future areas of collaboration.



David Wyatt (Boehringer Ingelheim), Andreia Veríssimo (iBET's Senior Scientist at the Late-Stage R&D and Bioproduction Unit) and Irene Waizenegger (Boehringer Ingelheim).

iBET Welcomes Leading Experts from Academia and Industry

iNOVA4Health Seminar Highlights

Building the Bioprocess Modeling Marketplace: How iBET Innovations Can Power the Industry via Novasign Studio | March 26

iBET had the pleasure of hosting Mark Duerkop for a iNOVA4Health seminar dedicated to the concept of a Bioprocess Modeling Marketplace.
The seminar illustrated how hybrid AI workflows, mechanistic models, and digital twins can be transformed into digital assets through Novasign Studio.

Read the full news article here.



Mark Duerkop, Co-founder of Novasign and CEO

Engineering Biomaterials to Control the Cellular (Micro)environment | May 15



Miguel Castilho, Associate Professor of Biomaterials Engineering and Biofabrication at Eindhoven University of Technology

iBET welcomed Miguel Castilho, a specialist in biomaterials engineering and biofabrication. His talk highlighted how high-resolution biomaterial systems and advanced 3D biomanufacturing technologies can be used to restore tissue mechanical functions, such as cardiac muscle contractility, with applications in human disease models and tissue regeneration.

Read the full news article here.

Five Strategies to be Successful in AAV Manufacturing | May 25

iBET had the pleasure of welcoming Eduard Ayuso, a recognized expert in viral vector manufacturing.
During his presentation, Ayuso shared insights from an extensive scientific career spanning more than two decades across academia and industry, supported by over 50 scientific publications. His work has significantly advanced the fields of in vivo gene transfer in small and large animal disease models, as well as viral vector development and analytics.

Read the full news article here.



Eduard Ayuso, Co-founder and CTO of DINAMIQS

Metabolic Engineering of Bacteria for Production of High-Value Chemical Paraxanthine from Caffeine | June 3

iBET hosted Ryan Summers, specialist in synthetic biology and metabolic engineering of bacteria.



Ryan Summers, Associate Professor in Chemical and Biological Engineering at the University of Alabama (USA)

Summers showcased how the engineering of a caffeine-degrading *E. coli* strain led to improved paraxanthine production, a high-value compound of interest as a caffeine alternative in beverages and supplements. iBET also welcomed undergraduate students from the University of Alabama participating in the PURE BLISS research program.

Read the full news article here.

iBET and Recipharm Advanced Bio host APIFARMA's Open Day

Connecting the pharmaceutical industry with Portugal's innovation ecosystem

On May 29, iBET and Recipharm Advanced Bio (formerly iBET's spin-off GenIbet Biopharmaceuticals) **hosted a Pharmaceutical Industry Open Day, as part of Associação Portuguesa da Indústria Farmacêutica (APIFARMA)'s nationwide 2026 initiative.**



The event involved professors, researchers, and MSc and Bachelor's students from the Faculty of Sciences and the Faculty of Pharmacy of the University of Lisbon, NOVA School of Science and Technology, and Instituto Superior Técnico.

The event aimed to showcase industry talent, promote relevant skills, and strengthen links between academia, industry, and society.
A total of 53 students and professors from leading Portuguese universities attended, gaining first-hand insight into pharmaceutical manufacturing, R&D, and career opportunities.

The program included opening remarks from APIFARMA, Recipharm Advanced Bio, and iBET representatives, followed by guided tours of production and research facilities.

The event also brought together key representatives from public institutions and local authorities, reinforcing the role of cross-sector collaboration in driving innovation, employment, and regional development.

iBET Welcomes Haplo-iPS COST Action Meeting Participants

Participants visited iBET's R&D infrastructures.

iBET is part of Haplo-iPS Project funded by COST Association - European Cooperation in Science and Technology.

Haplo-iPS project aims to establish a framework for generating human induced pluripotent stem cells (hiPSC) that are homozygous for frequent HLA haplotypes.

The **2nd Young Researchers Meeting** of the HAPLO-iPS COST Action CA21151 took place in Lisbon, bringing together members for an afternoon of scientific exchange and networking.

Margarida Serra (Head of Stem and Immune Cells Bioengineering Lab) and Pedro Vicente (Scientist) acted as local hosts for the meeting and delivered an opening keynote lecture on biological and engineering approaches to advance hiPSC bioprocesses and translational manufacturing.

The meeting also featured a visit to iBET's R&D infrastructures, giving participants the opportunity to better understand capabilities in integrated bioprocess development, process scale-up strategies, and engineering characterization of hiPSCs.



iBET hosted 34 participants from the 2nd Young Researchers Meeting with a visit to the Biofarma, the Stem and Immune Cell Bioengineering Lab, and Bioproduction and Late-Stage Unit facilities.

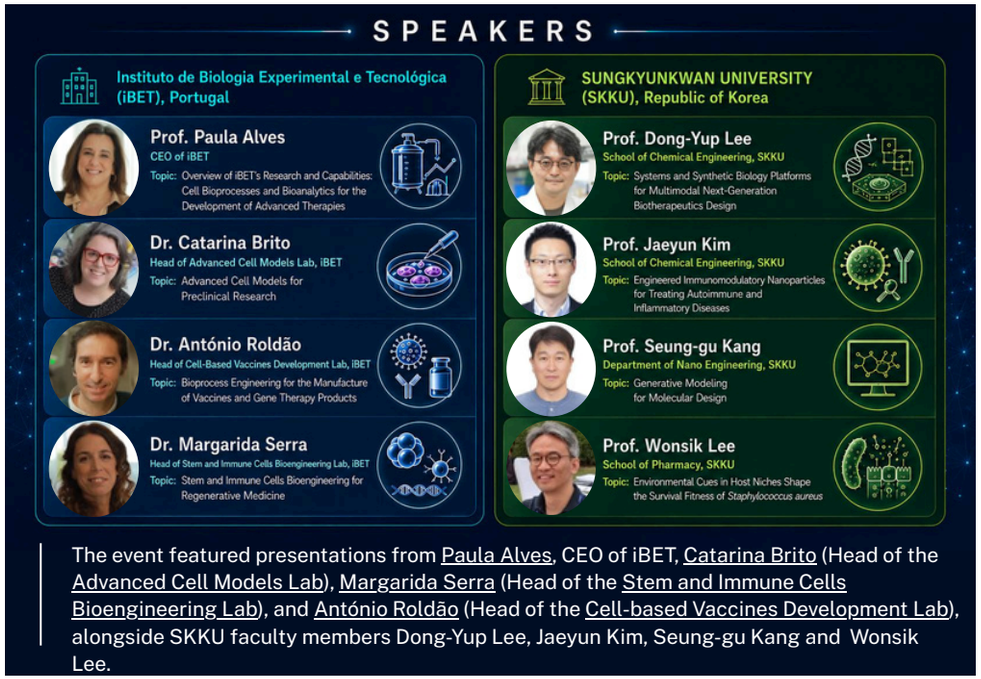
iBET Strengthens Scientific and Industry Connections in South Korea

From academia to industry: exploring opportunities for collaboration and innovation.

In June, iBET's delegation travelled to South Korea to participate in the SKKU-iBET Joint Symposium, while also strengthening ties with leading biotechnology and pharmaceutical companies.

SKKU-iBET Joint Symposium

Held at Sungkyunkwan University (SKKU) on June 19, the symposium, entitled "**Engineering Living Medicines: From Advanced Cell Models to Intelligent Biomanufacturing**", brought together researchers from both institutions to discuss the integration of bioengineering and data science with advanced bioanalytics for the development of advanced therapies.



The event featured presentations from Paula Alves, CEO of iBET, Catarina Brito (Head of the Advanced Cell Models Lab), Margarida Serra (Head of the Stem and Immune Cells Bioengineering Lab), and António Roldão (Head of the Cell-based Vaccines Development Lab), alongside SKKU faculty members Dong-Yup Lee, Jaeyun Kim, Seung-gu Kang and Wonsik Lee.

Engaging with Industry Leaders



iBET members met with the R&D teams at Samsung Biologics (top left), SK Bioscience (top right) and Hanmi Pharmaceuticals (bottom).

The visit provided an opportunity for iBET scientists to engage with key players in South Korea's thriving life sciences ecosystem.

The delegation visited Samsung Biologics, SK Bioscience, and HANMI Pharmaceutical, engaging in discussions on key trends shaping the biopharmaceutical and pharmaceutical sectors, including manufacturing of biologics, vaccines and emerging approaches to drug discovery and development.

Biopharma Team Annual Strategic Retreat

Shaping the Future: outlining iBET's roadmap for 2026 and beyond

On 6–7 April, the iBET Biopharma division held its annual strategic retreat in Ericeira, Portugal.

During these two days, iBET's Laboratory Heads and several senior scientists reflected on the division's 2025 achievements and ongoing challenges.

Throughout the retreat, participants discussed scientific priorities and ensured alignment with current R&D trends and key industry needs. The meeting concluded with the definition of several action steps designed to support the institute's in achieving its Biopharma strategic goals for 2026 and laying the groundwork for long-term objectives.



iBET Lab Heads and senior scientists shared reflections on further strengthening iBET Biopharma's commitment to innovation, excellence, and lasting impact in the health and pharmaceutical sectors.

International Scientific Advisory Board Meeting

Reinforcing iBET's commitment to Scientific Excellence



iBET SAB meeting 2026 joined SAB members, iBET CEO and Vice-President, Leadership team, Business Development team and iBET scientific Leaders.

On July 17, iBET welcomed its International Scientific Advisory Board (SAB) for the annual meeting.

The SAB brings together a group of internationally recognised experts from international Pharma and Biotech industry whose knowledge and experience provide valuable external perspectives on iBET's scientific strategy and its implementation.

The 2026 SAB meeting provided an opportunity to share developments across the institution, covering both scientific and business-development related topics.

Bringing together the SAB and iBET's leadership team, the meeting served as an important forum for constructive discussion and strategic reflection on the Institute's activities and ambitions.

Awards & Honors

Paula Alves awarded the Albert Struyvenberg Medal



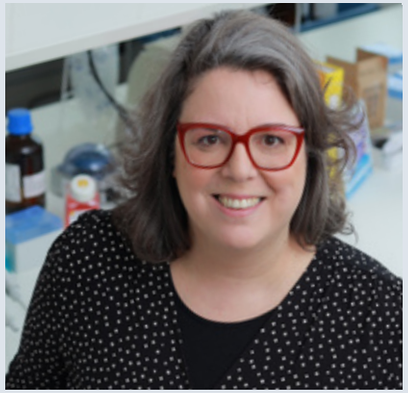
iBET's CEO, Paula Alves has been awarded the prestigious **Albert Struyvenberg Medal 2026**, one of the highest honours granted by the European Society for Clinical Investigation in recognition of exceptional achievements in clinical research.
This distinction recognizes Prof. Alves's pioneering work in biological products, vaccines, and advanced gene and cell therapies, and her key role in translating scientific innovation into clinical impact.

Paula Alves elected as Honorary Member of ESACT

During the recent ESACT2026 Meeting in Salzburg (June 7-10, 2026), Paula Alves was elected as **honorary member of the European Society for the Advancement of Cell Technology (ESACT)**. This distinction highlights Paula Alves's lifelong contributions to the Society and the broader field of animal cell technology. Read more here.

> "This recognition (...) reflects the collaborations, friendships, and shared efforts that have shaped my career. (...) It has been a privilege to be part of ESACT, and I look forward to continuing to support its mission."
>
> -Paula Alves, iBET's CEO

Catarina Brito Awarded Habilitation in Bioengineering



Catarina Brito, Head of Advanced Cell Models Lab, successfully obtained the **Habilitation in Bioengineering from Universidade Nova de Lisboa.**
This recognition reflects Catarina's exceptional scientific career, marked by excellence in research, innovation, and leadership in the field of advanced cell models and translational research.

PhD student Filipa Moura Receives ACTIP Fellowship Award



Filipa Moura, PhD student at iBET's Animal Cell Technology Unit, has been awarded a fellowship from the Advanced Cell Technology Industrial Platform (ACTIP). During the ACTIP meeting in Montreux, Switzerland (April 15–17), Filipa presented her research project.
The ACTIP Fellowship Award honors early-stage researchers advancing cell-based technologies with strong industrial impact and European collaboration.

PhD Graduations



PhD in Molecular Biosciences (MolBioS), ITQB NOVA University of Lisbon (April 1, 2026)

"Devising strategies to detect, reduce and eliminate taint-producing Alicyclobacillus spp. in food products"

Supervisor: Fréderic Gaspar and Teresa Crespo
Microbiology and Molecular Biology Lab



PhD in Bioengineering, MIT Portugal Program (May 14, 2026)

"Unlocking the Potential of hiPSC-derived Cardiac Fibroblasts: From Target Discovery to Scalable Biomanufacturing"

Supervisor: Margarida Serra
Stem and Immune Cells Bioengineering Lab



PhD in Molecular Biosciences (MolBioS), ITQB NOVA University of Lisbon (May 25, 2025)

"Overcoming Lentiviral Cytotoxicity: Strategies for Constitutive Vector Production"

Supervisor: Ana Sofia Coroadinha
Cell Line Dev. and Molecular Virology Lab

Conferences



By participating in **national and international conferences**, iBET scientists share their research through **oral and poster presentations**, broadening their knowledge and creating opportunities for networking and business development.

Advanced Therapies 2026

Advancing Cell and Gene Therapies

London, UK

2 Oral Presentations, session charing and a round-table participation

Read news article here

ESACT 2026

29th Meeting European Society for the Advancement of Cell Technology

Salzburg, Austria

3 Oral presentations, 14 Poster Presentation, 2 members on the Scientific and Executive Committee
Read news article here

Recovery of Biological Products XXI Conference

Fajardo, Puerto Rico

1 Oral Presentation

Read news article here

EMSF 2026

21st European Meeting on Supercritical fluids

Clausthal, Germany

3 Oral presentations, 2 Poster Presentations

Read news article here

ECI - Vaccine Thecnology 10th Conference

Engineering Conferences International - Vaccine Technology X

Porto, Portugal

3 Poster presentations

Read news article here

ASGCT 2026

American Society of Gene & Cell Therapy annual meeting

Boston, US

1 Oral Presentation and 1 Poster Presentation

Read news article here

Cyto 2026

39th annual Congress of the International Society for the Advancement of Cytometry

Florida, US

1 Poster Presentation

ISEKI-Food 2026

Faro, Portugal

3 Oral presentations, 2 Poster Presentations

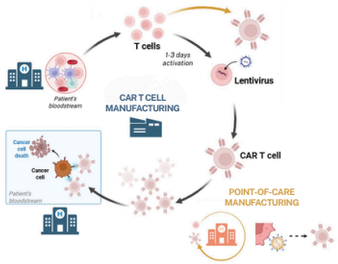
Publications

iBET scientists regularly disseminate their science through **international peer-reviewed journals**

This section highlights scientific papers published between March and July 2026.

Are we there yet? The road to faster and more efficient CAR T cell manufacturing

Matos LN, Costa MS, Serra M, Costa MHG in Journal of Biological Engineering.
doi: 10.1186/s13036-026-00666-5

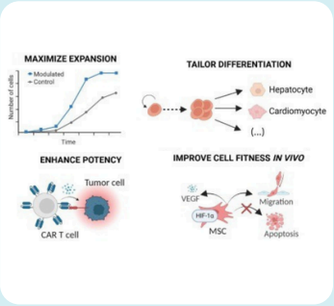


In this review, iBET researchers examine advances in CAR T-cell manufacturing aimed at improving production efficiency while preserving therapeutic cell phenotypes.
The authors discuss strategies to reduce vein-to-vein timelines, including **automation**, **microfluidic systems, process analytical technologies**, and **AI-driven process control.** Emerging approaches such as point-of-care manufacturing and in vivo CAR T-cell generation are also explored.

Shaping cell therapy manufacturing through metabolic understanding and control

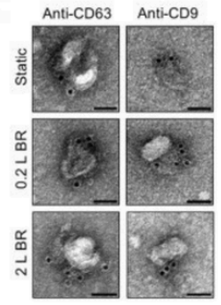
Costa CM, Terrasso AP, Costa MHG, Alves PM, Serra M in Trends in Biotechnology.
doi: 10.1016/j.tibtech.2026.03.006

In this publication, iBET researchers review how metabolic characterization and control can support cell therapy manufacturing.
The authors discuss the **role of metabolism in regulating cell expansion, fitness, phenotype, differentiation, maturation, and therapeutic function.**
Emerging approaches for monitoring cellular metabolism are also explored, including biochemical assays, omics technologies, and advanced process analytical technologies.



Clinical-scale bioreactor production of hiPSC-derived extracellular vesicles modulates miRNA and protein cargo to enhance angiogenic function

Meliciano A, Jacinto J, Freitas C, Costa MHG, Fuzeta MA, Serra M in Trends in Biotechnology.
doi:10.1016/j.tibtech.2025.12.032

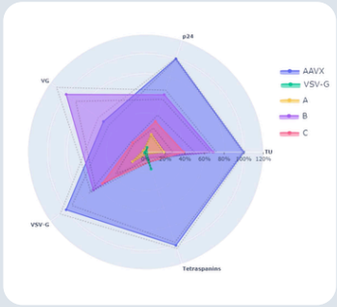


Extracellular vesicles (EVs) derived from human induced pluripotent stem cells (hiPSCs) are emerging as promising therapeutic products, but scalable manufacturing remains a challenge. This study presents **a perfusion-based stirred-tank bioreactor process for the expansion of 3D hiPSC aggregates and production of EVs at scale.** The platform was successfully translated from 0.2 to 2 L bioreactors, achieving clinically relevant EV yields. Omics-based characterization further revealed EV enrichment of proangiogenic cargo.

Publications

Non-infectious particle removal in lentiviral vector purification: A path to higher quality

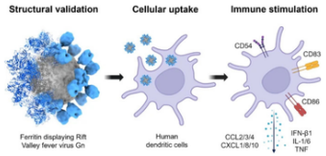
Fernandes RP, Ruiz AB, Bezemer S, Detmers F, Hermans P, Faria TQ, Peixoto C in Separation and Purification Technology. doi: 10.1016/j.seppur.2026.138432



In this study, iBET researchers, in collaboration with Thermo Fisher Scientific, characterized LV feedstocks and developed a novel affinity chromatography strategy to selectively remove non-functional impurities while preserving infectious vectors. Advanced analytical characterization revealed that 94% of particles corresponded to impurities, including extracellular vesicles and VSV-G empty particles. Evaluation of multiple functionalized resins enabled the development of a negative-mode affinity chromatography process.

Ferritin nanoparticles displaying rift valley fever virus glycoprotein elicit potent dendritic cell activation in vitro

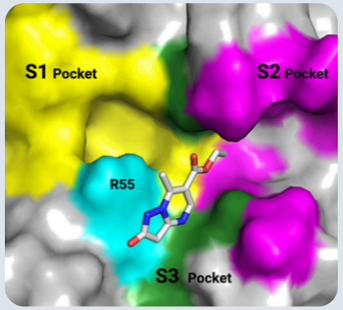
Rodrigues MQ, Cardoso I, Duarte N, Alves PM, Roldão A in Virology Journal. doi: 10.1186/s12985-026-03130-4



Rift Valley fever (RVF) is a zoonotic disease with no human vaccine. To support new vaccination strategies, **a ferritin-based nanoparticle platform displaying the RVF virus glycoprotein Gn was engineered to enhance antigen presentation and immune activation.** Cryo-electron microscopy confirmed the ordered, symmetric display of Gn on the nanoparticle surface. The nanoparticles promoted efficient uptake by human dendritic cells and induced cellular activation with pro-inflammatory cytokine secretion.

Structure-based design of pyrazole derivatives targeting the human Cyclophilin D binding site

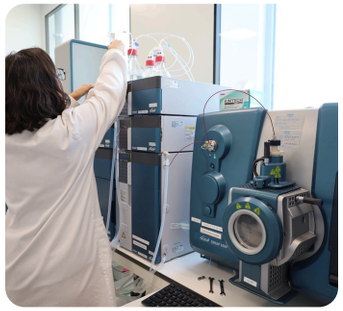
Silva DO, Freitas MC, Malta CF, Martins MT, Sousa PMF, Matias PM, Schwarz D, Ventura MR, Gradler U, Bandeiras TM in Journal of Biological Macromolecules. doi: 10.1016/j.ijbiomac.2026.151496



Researchers from iBET, Merck Healthcare, and ITQB NOVA identified new high-resolution crystal structures, revealing previously unexplored binding opportunities for Cyclophilin D (CypD) - an important therapeutic target implicated in multiple diseases. The study introduced the FragInc strategy, combining co-crystallization and soaking techniques for detection of low-affinity fragment interactions. A novel pyrazolo-core fragment binding site was identified within the S3 pocket, guiding the synthesis of four new CypD inhibitors.

Mass spectrometry as a tool for metabolomics in cancer

Patrício JS, Guerreiro ACL, Gameiro PA, Morello J in Advances in Experimental Medicine and Biology, Cancer Metabolic Remodeling Book. doi: 10.1007/978-3-032-12166-0_19

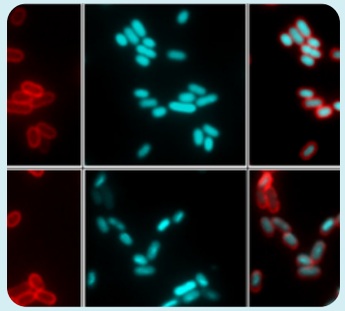


Metabolic alterations are a hallmark of cancer and provide valuable insights for diagnosis, prognosis, and therapeutic development. In this book chapter, researchers from NOVA Medical School and iBET review the **application of mass spectrometry-based metabolomics to cancer research.** Current strategies for metabolite annotation, statistical modelling, and pathway analysis to identify biomarkers and therapeutic targets are discussed, alongside challenges related to reproducibility and metabolite identification.

UV-C LED wavelength effects on inactivation kinetics, DNA damage and membrane integrity in drinking water indicator bacteria

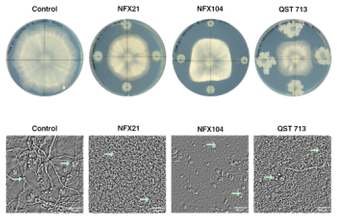
Sério J, Santos C, Martins ME, Marques AP, Feliciano C, Serrano M, Henriques AO, Crespo MTB, Pereira VJ in Scientific Reports. doi: 10.1038/s41598-026-44556-8

Understanding how microorganisms respond to different UV-C wavelengths is essential for optimizing disinfection processes. **In collaboration with ITQB NOVA, iBET researchers evaluated the susceptibility of the drinking water indicator bacteria *Escherichia coli* and *Enterococcus faecium* across the 255–280 nm UV-C range.** High disinfection performance was achieved at all tested wavelengths. The study also proposed a fluorescence microscopy analysis as a quantitative metric to complement viability and DNA damage assessments.



Functional and genomic characterization of *Serratia quinivorans* NFX21 and *Pseudomonas thivervalensis* NFX104, novel biocontrol agents against *Botrytis cinerea*.

Tedesco S, Silva FT, Pimenta M, Gaspar FB, da Silva MN, Crespo MTB, Nascimento FX in Plants. doi: 10.3390/plants15071052

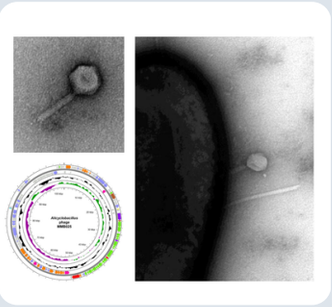


Gray mold, caused by *Botrytis cinerea*, is one of the most damaging diseases affecting crops. **Researchers from iBET and Centro de Biotecnologia e Química Fina characterized *Serratia quinivorans* NFX21 and *Pseudomonas thivervalensis* NFX104 as potential biocontrol agents** against this pathogen. Both strains inhibited *B. cinerea* growth and reduced disease incidence in tomato assays. Genomic analysis revealed an enriched set of antifungal and biosynthetic genes, supporting their potential for control of gray mold disease.

Publications

A novel temperate phage from *Alicyclobacillus*: first evidence in this genus of genomic identity to a sigK-integrated prophage

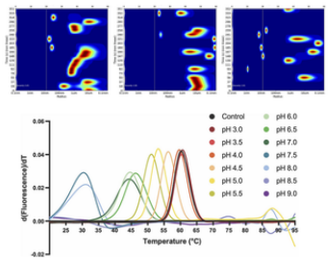
Leonardo IC, Ferreira H, Quendera AP, Crespo MTB, São-José C, Gaspar FB in Microbiology Spectrum. doi: 10.1128/spectrum.03747-25.



Bacteriophages are attracting growing interest as sustainable tools for microbial control in food processing. **In collaboration with iMed.ULisboa, iBET researchers reported phage MMB025, the first infectious phage shown to match a prophage sequence in *Alicyclobacillus*.** The study also revealed phage integration within the sporulation-related sigK gene, providing new insights into phage–host interactions. These findings establish a **valuable genetic resource and support new strategies to control *Alicyclobacillus*-associated food spoilage.**

Alicyclobacillin 24: a class III bacteriocin from *Alicyclobacillus acidoterrestris* targeting species associated with spoilage of acidic fruit-based products

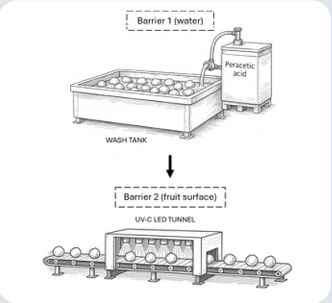
Leonardo IC, Quendera AP, Freitas MC, Santos SS, Lemos AR, Rodrigues CF, Ferreira H, Pimenta MS, São-José C, Bandeiras TM, Crespo MTB, Gaspar FB in Frontiers in Microbiology. doi: 10.3389/fmicb.2026.1823210



***Alicyclobacillus* species are among the main causes of spoilage in fruit juices and other fruit-based beverages, creating persistent challenges for the beverage industry.** To support the development of new control strategies, **iBET researchers identified and characterized Ali24, a novel bacteriocin with specific activity against Alicyclobacillus.** Biophysical characterization using dynamic light scattering and nano differential scanning fluorimetry demonstrated enhanced stability and reduced aggregation under acidic conditions, supporting the potential of Ali24 in fruit processing environments.

Early-stage inactivation of *Alicyclobacillus acidoterrestris:* A UV-C LED and peracetic acid approach

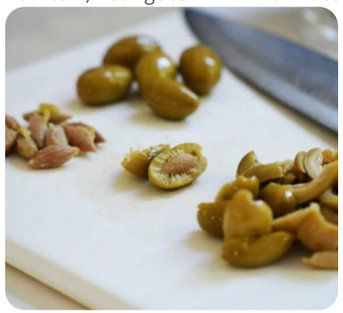
Leonardo IC, Crespo MTB, Pereira VJ, Gaspar FB in LWT- Food Science and Technology. doi: 10.1016/j.lwt.2026.119356



In this work, an **early-stage intervention strategy combining UV-C LED and peracetic acid was evaluated for bacterial inactivation.** Results show that vegetative cells recover after heat treatment, highlighting their potential contribution to spoilage. While UV-C LED treatment at 280 nm achieved substantial bacterial reductions, regrowth depended on treatment intensity. Combining UV-C LED with peracetic acid prevented bacterial recovery, supporting its use as a complementary microbial control strategy in fruit-based beverages.

Valorization of olive stones: chemical composition and bioactivity

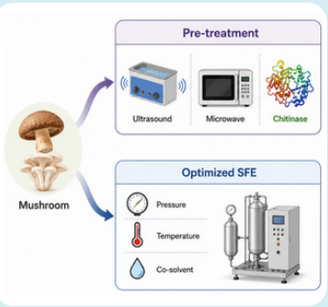
Nunes B, Fernández N, Silva AB, Partidário A, Marto J, Alexandre EMC, Lourenço S, Serra AT, Bronze MR, Duarte N, Rodrigues AM in Pharmaceuticals. doi: 10.3390/ph19030447



Olive stones are a by-product of olive processing with potential as a source of bioactive compounds.
In a collaborative study, **researchers from iBET, iMED.ULisboa, INIAV, Perfinox, and Sovena Portugal investigated the chemical composition and biological activity of olive stone extracts**. Fatty acid and phenolic profiles were characterized.
The resulting **extracts exhibited antioxidant activity and selective antiproliferative effects.**

Supercritical fluid extraction of ergosterol from *Lentinula edodes* and *Pleurotus ostreatus*: optimization and synergistic effects of biomass pre-treatments

Faustino R, Ferreira A, Bronze MR, Fernández in Molecules. doi: 10.3390/molecules31122067



Ergosterol (ERG) is a bioactive compound with cholesterol-lowering, antioxidant, and antitumor properties. **To improve the recovery of ERG-rich extracts from mushrooms, iBET researchers evaluated the combined effect of biomass pre-treatment and supercritical fluid extraction (SFE).** The optimized SFE process produced more concentrated ERG extracts than conventional Soxhlet extraction with n-hexane in shiitake and oyster mushrooms. Ultrasound, microwave, and enzymatic pre-treatments were also assessed.

iBET's publication record featured in this edition of Facts & Figures spans **Cell and Gene Therapy Manufacturing**, **Structural Biology**, **Bioanalytics**, and **Food & Environmental Microbiology**.

Hands with Purpose: iBET Team Building Day

This year, iBET's team building event was dedicated to giving back to the community.

Together, iBET community restored the local campus kindergarten Grãos de Gente by painting walls, windows, and furniture, renovating a beloved wooden train and playhouse, and helping revitalize the playground garden for the children who use it every day.
By turning teamwork into lasting community impact, iBET created a brighter, safer, and more welcoming space while strengthening the bonds that unite us. The event showcased the team spirit, commitment, and dedication of the iBET community.

We are grateful to Grãos de Gente for the warm welcome and hospitality that made the day even more meaningful. The project benefited from the guidance and expertise of r2 interiordesign, while Vítor Adão (catering) and Maria Bradshaw (singer) helped create a memorable atmosphere with great food and music.

Have a glimpse of the event and appreciate the before & after photos in this **video**



Strengthening Critical Thinking: iBET Life Long Learning Workshop

In an increasingly complex and information-rich world, critical thinking is an essential skill for making informed decisions. While naturally embedded in scientific research, these skills are equally valuable in everyday life, helping us evaluate information and make better decisions.

As part of the Life Long Learning Workshops series promoted by iBET's People & Culture Department, on **26 of May iBET welcomed José Maria Pimentel**, economist, Critical Thinking Professor at ISCTE, and creator of the acclaimed podcast 45 Graus.
During the session, participants explored how critical thinking enables individuals to analyse information logically, evaluate arguments and evidence, recognise biases and fallacies, and distinguish between facts, opinions, and manipulation.



iBET Move supports Batoto Yetu Association

Through iBET Move, our employee sports and wellbeing initiative, iBET donated €1,350 to Batoto Yetu Portugal, a youth and cultural association based in Caxias, Oeiras.
On April 28, representatives from iBET visited the Association to learn more about its work supporting the social integration of children and young people of African origin or descent through educational, artistic, and cultural activities.

The donation was made possible through funds raised from iBET Move sports activities and employee wellbeing massages. Each year, these funds are donated to a local social solidarity organization, extending the impact of our wellbeing initiatives beyond iBET.



Ricardo Veríssimo (Batoto Coordinator), Fernanda Spínola (Lab manager and iBET Move coordinator), Tânia Correia Costa (Head of People and Culture) and Sara Rebelo (Human Resources / People and Culture).



Our Values

Agility

We foster a culture of continuous improvement and embrace change as an opportunity of growth. We excel in flexibility and speed of execution of our research services.

Innovation

We look for novelty in each project and find solutions that add value to the institution and the client. We take the risk to create something new.

Ambition

We are determined to achieve our goals, inspired by the creation of value for our partners, using persistence, will, and restlessness.

Integrity

We act with honesty and ethics. We respect our partners and all stakeholders. We use scientific and technological knowledge to create value for the market and society in general.

Commitment

We are truly focused and feel responsible for our stakeholders (team, partners, and society) offering our best knowledge. Our people are our greatest asset, and we are committed to supporting their growth and career development.

Search for Knowledge

We search to know more. We look for the best solutions and sharing the best practices internally and externally.

Associate Members

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Bial Keeping life in mind

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