

PhD CANDIDATE POSITION (FPU FELLOWSHIP)

JOB DESCRIPTION

If you are passionate about translational research in surgery, bioengineering applied to organ preservation, and advancing clinical science through innovation, we invite you to join the Translational Research and Innovation in General and Digestive Surgery Group (GITIC) at the Health Research Institute of La Paz University Hospital (IdiPAZ), Madrid.

THE PROJECT

The project “Reproduction of homeostasis and metabolic stimuli during extended normothermic machine perfusion in the isolated liver” (PI23/00364) focuses on overcoming the current limitations of ex situ normothermic machine perfusion (NMP). Current NMP allows for short-terms preservation (<24h), but long-term maintenance requires a more physiological environment. This project aims to study in vivo metabolomic changes over the course of the circadian rhythm, in order to identify potential molecules necessary for regulating endocrine profiles and metabolic stability during 7-day NMP protocol. Using a preclinical porcine model and high-resolution omics, we will analyze the impact of circadian rhythm modulation on the metabolic stability and viability of ex situ perfused liver grafts.

HOSTING ENVIRONMENT

IDIPAZ-LA PAZ UNIVERSITY HOSPITAL

The La Paz University Hospital Health Research Institute (IdiPAZ) is one of Spain's leading biomedical ecosystems, linked to La Paz University Hospital, the Autonomous University of Madrid (UAM) and the European University. It offers an exceptional environment for translational research with direct access to highly complex clinical practice and leading scientific and technical platforms. IdiPAZ integrates basic science, clinical science, and health technology, favoring projects with a real impact on patients, system efficiency, and healthcare innovation.

IdiPAZ has the next core facilities and platforms available:

- **Experimental Surgery and Animal Facility Service at IdiPAZ.** This infrastructure complies with current legal regulations regarding the protection of laboratory animals, enabling preparation and perioperative care, instrumentation for animal surgery, and basic equipment for the rapid processing of samples.
- **Molecular Imaging and Immunohistochemistry Unit at IdiPAZ.** It is one of the support platforms for research groups that offers guidance and the supply of reagents, materials, and equipment to carry out various histological techniques on tissues or cells and their subsequent image analysis.

- **Flow Cytometry Laboratory.** It is one of the shared laboratories that has a variety of equipment allowing phenotypic analysis of different cellular subpopulations and the quantification of soluble factors in biological samples.
- **Laboratory and cryopreservation space.** On the one hand, there are spaces in -80°C ultra freezers for the storage and preservation of collected samples, as well as storage space at -20°C and 4°C for a wide variety of reagents. Within the laboratory space, there is a physical area for performing molecular biology techniques, equipped with dedicated materials (precision and multichannel pipettes, vortex, inventory storage for materials, among other items), in addition to a series of shared equipment (plate reader, exposure cabinet, qPCR reader, etc.) available to all researchers.
- **Workspace.** There is a personal workspace for carrying out office tasks and follow-up meetings.

THE RESEARCH GROUP

The Translational Research and Innovation Group in General and Digestive Surgery (GITIC) is an emerging multidisciplinary team (consolidated in 2021), made up of surgeons, anesthesiologists, biologists, and engineers, led by Dr. Constantino Fondevila Campo (Chief of Service) and affiliated with the consortium CIBER-EHD (CB06/04/0011). The group's mission is to bridge the gap between the laboratory and the operating room, generating evidence and tools that tangibly improve patient safety, decision-making, and clinical outcomes in general and digestive surgery.

Thanks to the extensive knowledge and skill set of its members, the projects developed by the GITIC group include basic science and experimental research, preclinical and translational surgical models, clinical research, analysis of post-surgical outcomes, and studies related to economic evaluation and the creation of mathematical models:

LINK: <https://www.idipaz.es/areasCientificas/CirugiaTrasplantes/InvestigacionTraslacionalInnovacionCirugiaGeneralDigestiva>

The selected candidate will perform the following tasks within the project:

- **Integrated Omics Analysis:** Interpret *in vivo* metabolomic and proteomic data to identify potential metabolites and factors for perfusate supplementation.
- **Perfusion Protocol Optimization:** Translate omics markers into optimized perfusion strategies, adjusting dosing and timing based on metabolic data.
- **Technician in Experimental Surgery:** Gain proficiency in the surgical environment, including sterility, organ procurement, sample pre-processing, and multi-day perioperative monitoring (includes completion of the Animal Experimentation Course).
- **Experimental Models & Perfusion:** Design and participate in 7-day ex situ normothermic liver perfusions and their functional validation in porcine models.

Fecha: 17/07/2026

- **Molecular Diagnostic Techniques:** Learn and apply the basics for gene analysis by qPCR (quantifying changes in RNA expression) or in situ hybridization.
- **Immunoassays:** Learn and apply protocols based on the specific binding of antibodies to biomolecules. This includes sample collection and preservation, and the execution of techniques such as Immunohistochemistry (optical/fluorescence), Western blot, and ELISA.
- **Data Integration & Curation:** Process and analyze experimental datasets, including physiological variables, biochemical markers, and high-resolution omics (spatial proteomics and metabolomics).

CANDIDATE PROFILE & REQUIREMENTS

We are seeking a highly motivated young scientist with strong interest in surgical research, data science for health and translational biomedical science.

The candidate must have:

- BSc in Biology, Biomedicine, Biotechnology, Bioengineering or related fields.
- Official MSc in one of the following areas (or equivalent): Molecular Biology, Biomedicine or Translational Biomedical Research, Biotechnology, Bioinformatics, Pharmacology or related fields. Must qualify for access to a PhD program in Spain.
- Recommended academic record: overall GPA $\geq 8.5/10$; candidates with GPA $\geq 8.7-9.0$ will be more competitive for FPU evaluation
- Strong motivation for hands-on work in both surgical environment and laboratory settings
- Good level of English (spoken and written).

It will be valued:

- Experience in data analysis/biostatistics.
- Management of datasets (cleaning, imputation, harmonization).
- Laboratory experience (qPCR, ELISA, IHC, Western) and knowledge of omics.
- Participation in projects, internships, scientific communications, or publications.

LABOUR CONDITIONS

- Full-time position.
- Workplace: IdiPAZ-Instituto de Investigación Sanitaria del Hospital Universitario La Paz.
- 4 year PhD contract (FPU Fellowship) associated to the project.
- Gross annual salary: according to AEI/FPU regulations and institutional salary scales: please check: www.aei.gob.es/ca/ayudas-fpu-2026
- Starting date: October 2027

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*Candidates must be eligible for admission or enrollment in an officially accredited doctoral program at a Spanish university for the 2025-2026/2026-2027 academic year, which may be verified after the application and until the end of the appeal period.

SELECTION PROCEDURE:

CANDIDATURES

Please submit a single PDF document including:

- CV (max. 2–3 pages)
- Cover letter (max. 1 page) stating your motivation for accepting the proposal.
- Academic records for BSc and MSc degrees
- Contact details for 1–2 referees

Email submission: cirugia.idipaz@outlook.com with the subject line “FPU GITIC-APPLICATION-[Your Name and Surname]”.

Deadline: August 21, 2026; 23:59 (CEST)

SELECTION PROCEDURE

Screening of CVs: From August 24 to August 30.

- Verification of minimum requirements (degree, MSc, eligibility for PhD enrolment, and profile fit).
- Candidates meeting the requirements will advance to the interview stage.

Interview phase: From August 31 to September 4.

Technical and motivational interview with the GITIC team.

Assessment of fit with the research activities, development potential, and contribution to the group.