

# Fundació de Recerca Clínic Barcelona-Institut d'Investigacions Biomèdiques August Pi i Sunyer (FRCB-IDIBAPS)

## R2A-Postdoctoral Researcher (G1-Researchers) - (FU-339-2024)



**Fundació de Recerca Clínic Barcelona - Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS)** is a leading biomedical research center located at the Clínic Campus in Barcelona, known for its strong international presence. At IDIBAPS, you will join a vibrant research community of over 2,000 professionals and about 100 multidisciplinary groups conducting groundbreaking research. Each year, our teams publish more than 1,500 original articles, placing us at the forefront of biomedical research in Spain. We manage over 1,100 competitive projects, with more than 220 receiving international funding.



HR EXCELLENCE IN RESEARCH

The Clínic Campus offers an exceptional environment for research and innovation, featuring the Hospital Clínic of Barcelona, a top-tier hospital dedicated to comprehensive healthcare, research, and education across almost all medical and surgical specialties. The campus also includes the Faculty of Medicine and Health Sciences of the University of Barcelona, established in 1843, and recognized as one of the most prestigious health faculties in Spain and globally.

IDIBAPS has been accredited with the [HR Excellence in Research](#) by the European Commission since 2015, renewing commitments and actions to advance the alignment of our human resources policies with the 40 principles of the Charter and Code, based on a personalised action plan/HR strategy.



UNIÓN EUROPEA

At IDIBAPS, nearly 100 clinical research groups work closely with laboratory scientists to drive original, translational, and multidisciplinary research. Our collaborative approach aims to solve significant biological and clinical challenges that impact human health.

We are proud to have been accredited with the HR Excellence in Research by the European Commission since 2015. This accreditation reflects our commitment to aligning our human resources policies with the 40 principles of the Charter and Code, guided by a personalized HR strategy and action plan.

IDIBAPS is a CERCA center and accredited as a health research institute by the Instituto de Salud Carlos III (ISCIII).

**We are looking for a R2A-Postdoctoral Researcher to join:**

- **The “Lipid Droplets and Innate Immunity” research line.**
- **In the research project “Lipid Droplets as innate immunity hubs (DRIMMS)”**
- **At the “Lipid trafficking and disease” research group.**
- **Funded by EUROPEAN COMMISSION. Grant agreement number: 101071784**

### Job Description

- Responsibilities

- One Postdoctoral Research positions is available in the group of “Lipid Trafficking and Disease (IDIBAPS Barcelona)” to participate in the ERC granted project “Lipid droplets as innate immunity hubs (DRIMMS)”. The research will be supervised by the ICREA Professor Albert Pol as part of the international consortium “Lipid Droplet-Innate Immunity Group” formed by our group and Robert G. Parton (University of Queensland, Australia) and Caroline Demangel (Institute Pasteur, France).
- Candidates must have a PhD in Biology, Medicine, or similar. Profiles with experience in Immunology, Cell Biology, or Bioinformatics will be especially considered. Previous experience in the design and development of research projects will be valued positively. The contracts will include a trial period of six months, and the salary will be as stipulated by IDIBAPS commensurate according to institutional scales and provided experience.
- Experience in the following areas/techniques will be positively valued: Microbiology and innate immunity mechanisms: Immunology, purification, handling and study of blood cells including macrophages; Bioinformatic analysis and big data management of RNA seq and high throughout screening; Experience in experimentation with animals including organelle purification; Cell Biology techniques including cell culture, electrophoresis, DNA transfection, RNA interference, RT-PCR, kinase assays, immunoprecipitation and western-blot; Molecular Biology, design and production of plasmids and DNA vectors, CRISPR screening; Flow cytometry, cell viability and proliferation, detection of lipid content, oxidative stress, and cell separation; Microscopy, Immunofluorescence techniques, immunocytochemistry and confocal microscopy; Lipid analysis, affinity chromatography, and HPLC.

**Scientific background:**

- To date, approximately 1400 species of human pathogens have been identified. These pathogens cause 16 million deaths each year and this situation is predicted to worsen in the future. It is therefore imperative that countermeasures to face this global threat are identified and implemented as soon as possible.
- A distinctive premise of our research is that countermeasures could be learnt from the sophisticated defence mechanisms that eukaryotes have developed over millions of years to cope with the pervasive presence of microbes. As major lipid storage organelles of eukaryotes, lipid droplets (LDs) are an attractive source of nutrients for invaders. Pathogens induce and physically interact with LDs and the current view is that they 'hijack' LDs to draw on substrates for host colonisation.
- We recently challenged this dogma by demonstrating that LDs are endowed with a regulated protein-mediated antibiotic activity. Our work introduced the new concept that dependence on host nutrients is a generic 'Achilles heel' of intracellular pathogens and LDs a chokepoint harnessed by innate immunity to organise a front-line defence.
- The Lipid Droplet-Innate Immunity Group is an ERC-funded International and multidisciplinary consortium that combine complementary knowledge and transdisciplinary expertise to investigate the hypothesis that LDs are innate immunity hubs sensing infection and directly confronting invaders. Using state-of-the-art technology, we will characterise how LDs efficiently coordinate and precisely execute a plethora of immune responses.
- Characterisation of these novel innate immune Systems will be paradigm-shifting in immunology, physiology and cell biology. In the age of antimicrobial resistance and viral pandemics, unravelling how eukaryotic LDs fight and defeat dangerous microorganisms will inspire new anti-ineffective therapies.

Read more at:

1) Mammalian lipid droplets are innate immune hubs integrating cells metabolism and host defence. Bosch M, (...) and Pol A. Science. 2020 Oct 16;370 (6514): eaay8085. doi: 10.1126/science.aay8085.  
Editor's comment in <https://science.sciencemag.org.sire.ub.edu/content/370/6514/eaay8085.editor-summary>  
Special Perspective in <https://sciencemag.org.sire.ub.edu/content/370/6514/294F1000> four times recommended  
<https://facultyopinions.com/prime/738842825>

2) Lipid droplets and the host-pathogen dynamic: FATal attraction?

Bosch, M, Sweet MJ, Parton RG, and Pol A. The Journal of Cell Biology 2021, 220 (8): e202104005. doi: 10.1083/jcb.202104005.

- **Required Education Level:** Biology, Medicine, Biomedicina or similar.
- **Master/PhD:** Master's degree in any discipline related to Immunology, Cell Biology, or similar.
- **Experience**
  - Previous experience in the design and development of research projects will be positively valued.
  - Experience in the following areas/techniques will be positively valued:
    - Microbiology and innate immunity mechanisms.
    - Immunology, purification, handling and study of blood cells including macrophages.
    - Bioinformatic analysis and big data management of RNA seq and high throughout screening.
    - Experience in experimentation with animals including organelle purification.
    - Cell biology techniques including cell culture, electrophoresis, DNA transfection, RNA interference, R-PCR, kinase assays, immunoprecipitation and western-blot.
    - Molecular biology, design and production of plasmids and DNA vectors, CRISPR screening.
    - Flow cytometry, cell viability and proliferation, detection of lipid content, oxidative stress and cell separation.
    - Microscopy, immunofluorescence techniques, immunocytochemistry and confocal microscopy.
    - Lipid analysis, affinity, chromatography, and HPLC.
- **Knowledge**
  - English.
  - Highly motivated, enthusiastic, and collaborative person.
  - Good capacity Planning.
  - Strong teamwork skills.
  - Good communication skills.
- **What we offer**
  - **Contract:** Indefinite scientific-technical contract.
  - **Workday:** Full time (37,5 hs/week).
  - **Continuous training provided by the company.**

- **Working conditions:** 22 vacation days + 6 personal days, 16 available hours, flexible schedule, and flexible remuneration program (medical insurance, transportation, meal vouchers, etc.).
- **Be part of a dynamic work environment:** we are a team with proven experience, a good working atmosphere, and we collectively value ideas and strategies, and prioritises work-life balance life.

- **Application Submission**

**All applications must include the reference code of the job offer (located in the upper left corner of this call).**

- ✓ **Candidates are required to:**

- Enclose a motivation letter and their Curriculum Vitae (including contact details).
- Include proof of the merits stated and the degree obtained.
- Sign and attach the authorization request for personal data - European Regulation (UE) 2016/679 (see page 7).

- ✓ **Place of submission:**

*(clearly indicating the reference code of the job offer at the upper left corner of this call)*

1. By email to the address: [fcrbrhh@recerca.clinic.cat](mailto:fcrbrhh@recerca.clinic.cat)

- ✓ **Application Deadline: 01/10/2024**

**1.1.** The recruitment will be carried out according to the provisions of Article 15 of the Royal Legislative Decree 1/1995, of 24 March, which approves the text of the law of the Statute of workers, in accordance with the provisions of art. 2 of the Royal Decree 2720/98, of 18 December (BOE of 8 January 1999), law 12/2001, of 9 July (B.O.E. of 10 July) and concordant provisions.

The principle of equal treatment between men and women will be considered, according to article 14 of the Spanish Constitution, the Community Directive of 9 February 1976 and what is foreseen in the agreement of the Council of Ministers of 4 March 2005, which approves the plan for gender equality in the General Administration of the State.

The universal accessibility for disabled persons will be considered according to the second paragraph of Article 1 of the law of December 25/2003 of equality of opportunities; 5% of the vacancies are preserved when candidates' pass the selection process and disabilities are proved. Also, compatibility with the tasks associated to the job must be proved so that progressively we reach 2% of all workforces.

1.2. Link to [Regulation \(EU\) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data.](#)

Barcelona, September 17<sup>th</sup>, 2024

## Authorization Request

### I AUTHORIZE:

**Fundació de Recerca Clínic Barcelona – Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS)** to process my data for personnel selection purposes. This data will only be transferred in cases where legally required, in accordance with Regulation (EU) 2016/679 and its corresponding implementing regulations.

Name and Surname:

DNI / NIE:

Signed:

**Barcelona,**