

R2A-Postdoctoral Researcher (G1) at the Lipid trafficking and disease

Code: FU-11/2025

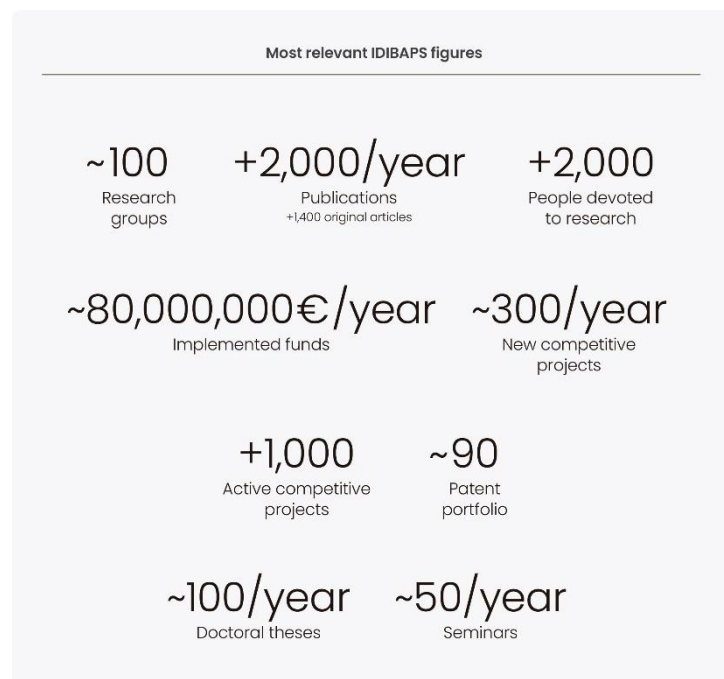
About the institution

The Barcelona Clinical Research Foundation-August Pi i Sunyer Biomedical Research Institute (IDIBAPS) is a biomedical research centre of excellence, located on the Barcelona Clinic Campus and with a clear international focus.

The IDIBAPS research community includes over 2,000 professionals and a hundred multidisciplinary groups that carry out high-impact translational research aimed at addressing biological and clinical questions relevant to human health, as evidenced by the more than 1,500 original articles published each year that make the institution one of the main biomedical research centres in Spain.

The Clínic Campus offers a high-level research and innovation environment, which includes the Hospital Clínic of Barcelona, a referral hospital committed to care, research and teaching, which covers practically all medical and surgical specialities, plus the University of Barcelona's Faculty of Medicine and Health Sciences. The latter dates from 1843 and is today one of the most prestigious health sciences faculties in Spain and worldwide.

Since 2015, IDIBAPS has had [HR Excellence in Research](#) accreditation from the European Commission. It is a CERCA centre and is accredited as a Health Research Institute by the Carlos III Health Institute (ISCIII).



Job description

A Postdoctoral Research position 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 (Institut Pasteur, Paris).

Candidates must have a PhD in Biology, Medicine, or similar. Profiles with experience in Immunology, Epithelial Biology or Innate immunity 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 (36,000 to 42,000 depending on previous experience).

Experience in the following areas/techniques will be positively valued:

- Microbiology; Innate immunity and Epithelial biology.
- Cell Biology techniques including Primary cell culture; Advanced

Microscopy; RNA interference, RT-PCR; Flow cytometry; Lipid analysis.

- Molecular biology techniques such as design and production of plasmids and DNA vectors, viral vector generation and CRISPR;
- Bioinformatic analysis and big data management of RNA seq and high throughput screenings.

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-infective therapies.

The applicant will be using advanced 3D primary epithelial cultures (3) to understand the role of lipid droplets in the defence of epithelial tissues against bacterial infections.

Read more at:

1) Mammalian lipid droplets are innate immune hubs integrating cell metabolism and host defense. Bosch M, (...), and Pol A. *Science*. 2020 Oct 16;370(6514):eaay8085. doi: 10.1126/science.aay8085.

Editor's comment in

<https://sciencemag.org.sire.ub.edu/content/370/6514/eaay8085.editor-summary>
 Special Perspective in <https://science-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.

3) Self-sustaining long-term 3D epithelioid cultures reveal drivers of clonal expansion in esophageal epithelium. Herms A, (...), and Philip H. Jones. *Nature Genetics*. 2024 Oct;56(10):2158-2173. doi: 10.1038/s41588-024-01875-8.

Required qualifications

- PhD in Biology, Medicine, Biomedicine or similar.
- Master's degree in any discipline related to Immunology, Cell Biology, or similar.

Experience and knowledge

Experience required:

- 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; Innate immunity and Epithelial biology.
- Cell Biology techniques including Primary cell culture; Advanced Microscopy; RNA interference, RT-PCR; Flow cytometry; Lipid analysis.
- Molecular biology techniques such as design and production of plasmids and DNA vectors, viral vector generation and CRISPR;
- Bioinformatic analysis and big data management of RNA seq and high throughput screenings.

Skills:

- Highly motivated, enthusiastic, and collaborative person.
- Good capacity Planning.
- Strong teamwork skills.
- Good communication skills.

IDIBAPS offers

- **Type of contract:** Indefinite contract for scientific-technical activities.
- **Working hours:** Full time (37.5 hours / week).
- **Line of research:** Lipid Droplets and Innate Immunity
- **Project:** Lipid Droplets as innate immunity hubs (DRIMMS)
- **Funder and official project code:** European Commission - 101071784
- **Incorporation into IDIBAPS:** A research centre of excellence in the city of Barcelona. Excellent research results and competitive project grant awards, both national and international.
- Long-life training offered by the institute.
- **Working conditions:** Holiday entitlement of 22 days + 6 days for personal affairs, flexible working hours and flexible remuneration (health insurance, transport, meal vouchers, training).
- **The chance to form part of a dynamic work environment:** We are a team with a wealth of experience that jointly evaluates ideas and strategies and promotes a healthy work-life balance.

Applications

- **Presentation letter:** explicitly mentioning the call reference and explaining the candidate's personal reasons for applying.
- **Curriculum Vitae:** including a list of publications, where applicable.
- **Documentation accrediting** the credentials set out and the required qualifications.
- **Obligatory:** the duly signed Authorisation relating to EU Regulation 2016/679 on the protection of personal data (*attached document, page 6*) must be attached to the application.

Submission and deadline

- Candidates shall submit their applications, indicating the call reference for the position for which they are applying, by email to the address: FCRBRRHH@recerca.clinic.cat
- **Deadline:** From the publication of this call until 30/01/2025

The employment contract will be in accordance with the provisions of Legislative Decree 1/1995, of 24 March, approving the text of the Workers' Statute Law, of Law 14/2011, of 1 June, on science, technology and innovation in accordance with the provisions of Art. 2 of Royal Decree 2720/98, of 18 December (BOE of 8 January 1999), Law 12/2001, of 9 July (BOE of 10 July) and concordant provisions.

The principle of equal treatment between men and women fundamental, in accordance with Article 14 of the Spanish Constitution, the European Community Directive of 9 February 1976, and the provisions of the Agreement of the Council of Ministers of 4 March 2005, approving the

Plan for Gender Equality in the General State Administration.

The universal accessibility of people with disabilities is fundamental according to section 2 of Article 1 of Law 51/2003, of 2 December, on equal opportunities, and 5% of vacancies are reserved as long as candidates pass the selection processes and accredit their disability and compatibility with the tasks to be carried out, so that we progressively reach 2% of the total workforce.

The gross annual remuneration relating to the position that is the subject of this call will be established based on each candidate's experience and aptitudes.

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

Barcelona, on January 16, 2025

Authorisation request

I hereby authorise:

The **FUNDACIÓ DE RECERCA CLÍNIC BARCELONA – INSTITUT D'INVESTIGACIONS BIOMÈDIQUES AUGUST PI I SUNYER (IDIBAPS)**, to process my data for personnel recruitment purposes, transferring them only in cases where legally required, in line with the provisions of Regulation (EU) 2016/679, and the corresponding regulations that develop it.

Name and Surname:

DNI/NIE/ID:

Signed:

Barcelona,