
IPBS Call for Post-doctoral fellows

The IPBS (Institute of Pharmacology and Structural Biology) is seeking motivated postdoctoral researchers to apply for various postdoctoral fundings (Marie Skłodowska-Curie, EMBO, FRM, etc.) and join our laboratory to carry out their research project.

Research topic

Real-time visualization of pulmonary T cell dynamics during mycobacterium tuberculosis infection

Tuberculosis (TB) remains the leading cause of infectious mortality worldwide, largely due to an incomplete understanding of protective T cell immunity. While T lymphocytes are crucial for controlling *Mycobacterium tuberculosis* (Mtb), their limited efficacy may originate from their exclusion from granuloma cores, where infected macrophages reside. The mechanisms governing this spatial segregation remain poorly defined.

This project aims to elucidate, in real time and *in vivo*, T cell dynamics within pulmonary granulomas using lung intravital microscopy (LIVM) established under BSL3 conditions, an exclusive setup in Europe. This approach allows direct visualization of T cell migration, activation, and interactions in the Mtb-infected lung. We will compare T cell behaviors in murine models with distinct susceptibility profiles, analyze how the extracellular matrix regulates T cell access to infected macrophages, and determine whether high endothelial venules (HEVs) act as preferential T cell entry points. The project's originality lies in the first application of pulmonary IVM to TB under BSL3 containment. Through integration of advanced imaging, genetic models, and local and international collaborations (Neyrolles laboratory - IPBS Toulouse, Joel Ernst - UCSF), this project will uncover structural and molecular barriers limiting T cell efficacy and provide new strategies to optimize T cell responses against TB.

Keywords:

Mycobacterium tuberculosis (Mtb), T cell immunity, Intravital microscopy (MP-IVM), Lung immunology, Cell migration and dynamics, Extracellular matrix (ECM), Lung infection models, Host-pathogen interactions

Experience/Skills required:

- Candidates must hold a PhD or having it before the application deadline

We are seeking a highly motivated postdoctoral researcher with a PhD in immunology, pathophysiology, or in vivo imaging, and expertise or strong interest in:

- T cell immunity and dynamics
- Migration of T cells in tissues
- Tuberculosis (TB) immunity

The ideal candidate will have experience in:

- Animal experimentation and tissue analysis
- Intravital and fluorescence microscopy
- Image analysis (Imaris, ImageJ, or equivalent)
- Immunology techniques and flow cytometry
- Data analysis and scientific communication
- Good laboratory practices and animal experimentation certification

Join our team to investigate T cell behavior in pulmonary TB using cutting-edge imaging approaches in a dynamic, collaborative research environment.



Research environment

Host Institution: [Centre National de la Recherche Scientifique](#)

Laboratory: [Institute of Pharmacology and Structural Biology \(Toulouse, France\)](#)

Supervisor: [Emma Lefrancais](#)

Team: [Jean-Philippe Girard laboratory \(Endothelial cells in Immunity, Inflammation and Cancer\)](#)

Why join IPBS ?

Located in **Toulouse, France**, IPBS is a leading research institute affiliated with CNRS and the University of Toulouse.

We offer :

- **A cutting-edge research environment** with access to state-of-the-art facilities in molecular biology, structural biology, imaging, and omics technologies
- **An international, collaborative scientific community**, committed to equality, diversity and inclusivity
- **A multidisciplinary campus at the University of Toulouse**, offering education in science, health, engineering, and technology, representing one of France's major research cluster
- **A supportive career development**, including mentoring, networking, and fellowship guidance
- **Collaborative opportunities** across research centers in Toulouse and within European networks
- **A dynamic, affordable city offering rich culture and high quality of life.** Ideally located between the Mediterranean, the Atlantic, and the Pyrenees' Mountain, Toulouse has long been a key crossroads in Europe. As the capital of the Occitanie region, France's leader in research and innovation, Toulouse hosts over 15,000 academic researchers, 7,500 PhD students, and dedicates 3.5% of its GDP to R&D

Targeted fundings

- [EMBO Postdoctoral Fellowship](#) – Deadline : **23 January 2026**
- [AToUT Postdoctoral Fellowship Programme](#) – Deadline : **28 February 2026**
- [Marie Skłodowska-Curie Postdoctoral Fellowship](#) – Deadline : **September 2026**
- [FRM – Post-doctorate in France](#) – Deadline : **Expected in May 2026**
- [HFSP Long-Term Fellowship](#) – Deadline : **7 May 2026 (Letter of intent) and 25 September 2026 (Submission of Full Proposal)**
- [EMBO Postdoctoral Fellowship](#) – Deadline : **July 2026 (2 calls per year)**
- And other potential fundings depending on your topic and the eligibility

Most fundings provide living allowance, mobility allowance, family allowance (if applicable, research costs, travel and relocation support). However, each funding opportunity has specific eligibility requirements.



Application Process

1) Send a detailed CV, a cover letter outlining your research interests and motivation for joining the group, and the contact information of at least 2 professional references (potential supporters and mentors) to:

- Emma Lefrançais : emma.lefrançais@ipbs.fr
- IPBS Recruitment: recruit@ipbs.fr

Email subject line: IPBS_PF Application_ Emma Lefrançais _[Candidate Name]

2) Internal deadline: 15 January 2025

Don't hesitate to apply now as applications will be reviewed on a rolling basis.

3) Expected Starting date: From September 2026 to September 2027 depending on the funding