

Postdoctoral position

Deciphering the Role of Macrophages in Antibiotic Persister Formation

Persistence and single-cell dynamics of respiratory pathogens Lab (Dr. Nicolas Personnic)

International Center for Infectiology Research (CIRI) – Lyon

Context: Many pathogens are difficult to eradicate, even in the absence of genetically encoded antimicrobial resistance mechanisms and despite remaining susceptible to antibiotics *in vitro*. A subset of clonal bacteria can transiently withstand antibiotic treatment; these cells are known as *antibiotic persisters*. Growing evidence suggests that the host immune cell environment, particularly within macrophages, plays a critical role in persister formation. We are seeking a highly motivated postdoctoral scientist to investigate how heterogeneous pathogen–macrophage interactions drive antibiotic evasion and persistence. The successful candidate will develop innovative projects at the interface of cell biology, immunology, microbiology, and molecular biology, while leveraging cutting-edge single-cell technologies and multi-omics approaches.

Our lab: At CIRI, the Persistence and Single-Cell Dynamics of Respiratory Pathogens Lab led by Nicolas Personnic explores how heterogeneity, from molecular to population scales, drives pathogen survival and antibiotic evasion. We combine quantitative single-cell biology and Omics approaches to provide new concepts in infection biology. You'll join a dynamic, collaborative environment with access to state-of-the-art platforms.

Profile

- PhD in Cell Biology, Immunology, or a related field, with a focus on macrophage biology, cellular immunity, immune cell dynamics, or host-pathogen interactions.
- Experience with advanced cellular & molecular techniques (e.g., live-cell imaging, flow cytometry, CRISPR screens, or single-cell RNA-seq, Proteomics, etc.) is highly desirable.
- A proven track record of productivity (publications commensurate with career stage) and a passion for interdisciplinary research.
- Team-oriented mindset and excellent communication skills in English (oral/written).
- Eligibility for international postdoctoral fellowships (e.g., Marie Skłodowska-Curie Actions, EMBO, HFSP) is a plus.

Candidates will also be encouraged to pursue independent ideas as they progress toward becoming an independent scientist.

Conditions

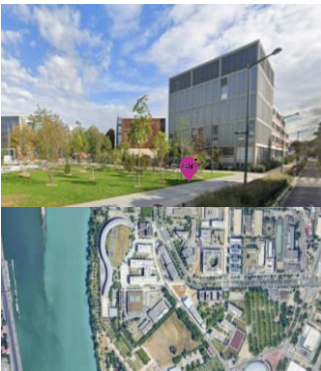
- Start date upon agreement.
- The position is funded for 3 years in the form of a renewable 1-year contract. The candidate will be supported to apply to independent funding.
- Salary follows Lyon 1 University regulations according to experience.

Contact: Candidates should send a CV and a cover letter including a brief description of research interests and your motivation to join the lab to nicolas.personnic@cns.fr. Include two letters of reference (one from your PhD supervisor).

Deadline for applications: Applications will be reviewed on a rolling basis until the position is filled.

Relevant publications

- Dadole, I. *et al.* (2024). The macrophage-bacterium mismatch in persister formation. *Trends in Microbiology*.
- Striednig, B, *et al.* (2021). Quorum sensing governs a transmissible *Legionella* subpopulation at the pathogen vacuole periphery. *EMBO Reports*.
- Personnic, N. *et al.* (2019) Quorum sensing modulates the formation of virulent *Legionella* persisters within infected cells. *Nature Communications*.



About CIRI

CIRI is a leading research institute jointly affiliated to INSERM, CNRS, ENS Lyon and Lyon 1 University. CIRI gathers 400 scientists with a diverse panel of expertise ranging from molecular microbiology to human immunology. At the CIRI, we offer a dynamic and stimulating scientific environment at the heart of the Lyon Biodistrict, with strong links to clinical research and direct access to state-of-the-art technological platforms through the SFR Biosciences (UMS3444/US8). Located in a city renowned for its thriving biotech ecosystem and vibrant cultural life, Lyon also offers easy access to the French Alps, the Auvergne region, the Mediterranean Sea, and is just a two-hour train ride from Paris. It's an ideal setting to pursue cutting-edge research while enjoying an exceptional quality of life.



BIOLOGIE



Lyon 1



ENS DE LYON