

Postdoctoral position at Institut Pasteur, Paris

Structural biology of small molecule inhibitors

Research Project

We are looking for a highly motivated post-doctoral scientist who would like to decipher, at atomic resolution, how newly discovered small-molecule inhibitors disable the type IV pili of pathogenic bacteria. These virulence nanomachines are essential for host colonization and represent an untapped source of antibacterial targets. Building on our discovery of potent inhibitors that block pili surface display (Aubey et al., PNAS 2019) and on recent chemoproteomic work that revealed their protein targets, your mission will be to determine the binding sites and to unravel the complete mode of action of these compounds. First steps of the work will rely on single-particle cryo-EM and X-ray crystallography, complemented by enzymatic, biophysical and functional assays in live bacteria. By integrating structural information with mechanistic data you will guide medicinal-chemistry efforts aimed at turning these leads into first-in-class antibiotics.

Host lab

The project is funded for at least two years and will be carried out in the Pathogenesis of Vascular Infections Unit headed by Guillaume Duménil at the Institut Pasteur, a vibrant campus in the heart of Paris that hosts more than 150 research groups. You will join an interdisciplinary team of microbiologists, structural biologists, cell biologists and biophysicists. You will have privileged access to state-of-the-art core facilities, including Titan Krios and Glacios microscopes, a fully equipped crystallography platform, advanced computing clusters, proteomics and BSL-2/3 imaging facilities. The institute provides numerous training courses, an active post-doctoral association, sports facilities and competitive salaries with full social benefits.

Knowledge and skills

Candidates should hold (or be about to obtain) a PhD in structural biology, biochemistry, biophysics or a related discipline. Demonstrated experience in recombinant protein expression and purification as well as in cryo-EM and/or macromolecular crystallography is essential; familiarity with cryo-ET, membrane-protein reconstitution, chemical biology, drug design, medicinal chemistry, basic scripting and/or bacterial genetics will be considered advantageous. We value intellectual curiosity, rigor, the ability to work in a team and strong communication skills in English; knowledge of French is not required.

Recruitment process

Applications will be reviewed continuously until the position is filled, with an ideal start early 2026 (date negotiable). Please send a single PDF containing a cover letter outlining your research interests and suitability for the project, a detailed CV with publication list, and the names and e-mail addresses of two to three referees to Dr Guillaume Duménil (guillaume.dumenil@pasteur.fr). Informal enquiries are welcome. Come and help us reveal the structural blueprints for tomorrow's antibiotics.