

Permanent contract

Research Engineer Position in Biological Mass Spectrometry & Top-Down Proteomics

We are seeking a talented and motivated scientist with a strong expertise in biological mass spectrometry (MS) and top-down proteomics to join the Mass Spectrometry for Biology (MSBio) Laboratory at the Institut Pasteur, Paris, France.

Context and environment

The Mass Spectrometry for Biology Lab, headed by Julia Chamot-Rooke, is a mixed Institut Pasteur/CNRS Unit (USR 2000). It includes a research group dedicated to the development of structural mass spectrometry and top-down proteomics, and the proteomics platform headed by Mariette Matondo, which provides service and collaboration mostly in bottom-up proteomics.

Missions

The research engineer will be responsible for the top-down proteomics activities and will share his/her time between the research group and the proteomics facility. He/she will work in an interdisciplinary environment and will be involved in projects involving various teams of biologists of the Institut Pasteur, as well as bioinformaticians. He/she will also be part of national and European networks/projects: "European Proteomics Infrastructure Consortium providing access" (EPIC-XS), "Next generation precision antibody profiling" (TopSpec) for which his/her expertise in top-down proteomics will be a major added-value.

A thorough experience in Orbitrap mass spectrometry (Q-Exactive, Tribrid Lumos) and associated LC systems (Dionex, proxeon), in particular for the analysis of intact proteins, is required. The candidate should also have a good knowledge in the software dedicated to data processing for top-down proteomics, such as ProSight.

In the research group, the research engineer will mainly develop innovative top-down proteomics pipelines and apply them in the field of infectious diseases for the analysis of proteoforms highly involved in human health (antibodies, bacterial proteins...). In the facility, his/her role will include participating to collaborative projects combining bottom-up and top-down proteomics experiments. He will make use both of a Nanomate Triversa (Advion) and of LC/nanoLC systems for sample introduction.

The candidate will be in charge of disseminating results (internally and externally into national or international conference), writing scientific articles, participating to fundraising... He/she will closely interact with the bioinformatician recently recruited in the Unit to develop new pipelines for data analysis.

Main activities

- Develop and implement state-of-the-art LC-MS/MS top-down proteomics approaches to characterize proteoforms in the context of various projects
- Participate to projects in collaboration with teams of biologists
- Analyze and validate data
- Manage the Orbitrap Fusion Lumos already present in the lab (and an Eclipse in 2021).
- Perform technological watch in top-down proteomics

- Train users and students in top-down proteomics
- Communicate results through reports or talks, both internally and externally

Expected profile

- PhD in life sciences, chemistry, biochemistry or related field
- 3+ years of research experience in mass spectrometry-based proteomics
- Solid hands-on expertise in top-down proteomics, from sample preparation to data analysis (ProSight, Biopharmafinder)
- Good knowledge in protein sequence databases
- Excellent knowledge in Orbitrap mass spectrometry
- Quality management
- Fluent in English

Interpersonal skills

- Scientific rigor
- Team work
- Excellent organizational skills, prioritization of the work
- Strong communication skills

If you are interested, please send your CV and motivation letter to julia.chamot-rooke@pasteur.fr and mariette.matondo@pasteur.fr