



Elettra Sincrotrone Trieste

Junior Research Associate in Protein Production and Characterization for the AVITHRAPID Project at ELETTRA

Deadline: 29 January 2024

Ref: DA/24/1

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center operated as a user facility, featuring a 2.0/2.4 GeV, third-generation synchrotron light source (Elettra), a new free-electron laser light source (FERMI) and a variety of support laboratories. The extremely high quality of the machines and beamlines has set new performance records and has been producing results of great scientific and technological interest. In order to allow the laboratory to remain competitive in the next 20 years, an entirely new source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being developed. The new source will exhibit a major increase in the brilliance and coherence fraction of the photon beams. The Elettra 2.0 optics is based on our enhanced symmetric six bend achromat structure (S6BA-E) with a 12-fold symmetry and an emittance of 200 pm-rad at 2.4 GeV. The new structure creates also straight sections in the arcs permitting the installation of additional insertion devices, thus increasing the number of beamlines. Existing beamlines will have to be upgraded and new beamlines developed to take full advantage of the characteristics of Elettra 2.0. The new machine is scheduled for commissioning in the second half of 2026. See <http://www.elettra.eu> for more information.

Beamline/Activity/Project description

Elettra Sincrotrone Trieste is a partner of the AVITHRAPID European Consortium (HORIZON-HLTH-2023-DISEASE-03 call), which is committed at improving European research capacities and become a key instrument to support research on viral pathogens with epidemic and pandemic potential. Among the project objectives is the development of novel broad-spectrum antivirals through the application of a rational pre-clinical drug discovery workflow. The task of the research group at Elettra Sincrotrone Trieste is to provide evidence of protein-drug binding modes using biochemical, biophysical and structural biology methods. The Protein Facility of the the Elettra Structural Biology Laboratory applies molecular and structural biology tools to the study of druggable protein targets of interest in drug discovery processes. We use protein biotechnology, biophysics and macromolecular crystallography to produce and characterize recombinant proteins and their binding with selected ligands such as small molecule inhibitors, cofactors and protein modulators in order to understand the binding mechanism. This state-of-the-art facility will deliver proteins, perform crystallization and pursue structural determination on them working in close collaboration with the XRD2 diffraction beamline of the Elettra synchrotron radiation facility to enable critical experiments. <https://www.elettra.trieste.it/labs/structural-biology>

Job description

The successful candidate will join the AVITHRAPID research team of Elettra Sincrotrone Trieste and his/her goals will be aligned with the project objectives. He/She will mainly be in charge of the production, characterization and structural analysis of the drug-bound protein targets of interest for the drug discovery process. The successful candidate will report to the local team leader of the project and will work in close contact with the other scientists of the group and with the beamline scientists. He/she will have to work autonomously, present results at project meetings and workshops, international conferences, as well as prepare and submit articles to peer-reviewed scientific journals.

Qualifications

A Ph.D. in biochemistry, chemistry, biology, biophysics or related disciplines, or three years of equivalent research experience, is required. Hands-on experience in molecular biology (recombinant protein expression and protein purification and characterization), in ligand-protein binding analysis (SPR-like or NMR-based methods), as well as in structural biology techniques (crystallization, macromolecular crystallography) is essential. A knowledge of the literature on viral protein targets, drug discovery of antiviral drugs will be considered a plus.

Good time management skills and ability to prioritize are expected, together with the ability to interact with the facility staff and international users at all levels and to work as part of a multi-disciplinary team.

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Excellent oral and written communication skills in English are essential.

General information

The appointment will be a fixed term contract with an initial duration of 12 months. The salary will be commensurate with previous experience and qualifications of the candidate.

Applications should include a full curriculum vitae, the names and contact information (including electronic mail) of at least one person who has agreed to provide a reference.

The interviews may be held via video conferencing.

The deadline for the submission of the application is January 29, 2024.

In accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection 16ter) of Italian legislative decree no. 165/2001, employees or former employees of any Italian Public Entity who have exercised authority over Elettra Sincrotrone Trieste S.C.p.A. or have negotiated with Elettra - Sincrotrone Trieste S.C.p.A. within the last three years will be excluded from the present selection procedure. We thank all applicants in advance.

For more information, please contact Paola Storici (email: paola.storici@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=3721>

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