



Postdoc position:

Deciphering allostery in a large family of enzymes by X-ray crystallography, in a collaborative project with NMR, simulation and biophysics

Grenoble, France

Missions

- Within the framework of a project financed by the French National Research Agency (ANR) on the evolution of allosteric regulation in a large family of metabolic enzymes, the researcher will be in charge of carrying out biochemical and structural studies mainly based on X-ray crystallography. This work will be carried out in liaison with various other partners in France and Austria who participate in the project. The objective is to obtain structures with or without the presence of ligands in order to capture these enzymes in various structural conformations.

- Work context

- The Structural Biology Institute of Grenoble (IBS) is a Joint Research Unit which hosts more than 290 people mainly from CNRS, CEA and Grenoble Alpes University. The host team (ELMA) located at IBS has a long expertise in structural biochemistry and enzymology. The host team is composed of 5 permanent members. The team has a well-equipped laboratory with all the necessary equipment to carry out enzyme purifications and the robotic and manual crystallogenesis process. For this purpose, the team benefits from a privileged access to the robotic sampling platform (HTX) of the European Molecular Biology Laboratory (EMBL). Access to the ESRF (European Synchrotron Radiation Facility) bio-crystallography lines is also facilitated.

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Activities

- Purify enzymes representative of the major steps in the evolution of malate dehydrogenases (non-allosteric) towards lactate dehydrogenases, which are allosteric.

- To research the crystal growth conditions of these enzymes. Optimize their growth and collect diffraction data on synchrotron lines.

- Process the data and build the structural models.

- Compare and analyze the obtained structures with those already existing.

Skills

General knowledge:

- Possess a Ph.D. in Structural Biology / Biophysics.

- Excellent knowledge of crystallography and biochemistry.

- English language

Skills:

- Proven experience in protein crystallography.

- Proficiency in protein biochemistry - purification and characterization (affinity purification, SEC etc), circular dichroism, spectrophotometric measurements.
 - Teamwork on specific projects.
 - Rigor and good organization in the planning and execution of experiments. Ability to synthesize the advances obtained
 - Intellectual curiosity with the possibility of broadening one's fields of competence
- The work schedule is spread over the week, but may require occasional weekend work.

General information

Reference :

Workplace : GRENOBLE, FRANCE

Scientific limited-time contract (22 months)

Expected date of employment : September 1, 2022 - June 30, 2024.

Working hours : Full time

Desired level of education : PhD, up to 3 years post-doctoral experience

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