Postdoctoral position available

Biological High-Field Magnetic Resonance, Institute for Integrative Biology of the Cell
Université Paris-Saclay, CNRS, CEA-Saclay
Gif-sur-Yvette - FRANCE

"Use of non-conventional amino acids for in-cell structural studies"

Structural biology has had a tremendous impact on the understanding of cellular processes. Paradoxically most of the knowledge has come from studies on isolated systems devoid of the cell itself. In the complex and dense cellular milieu, proteins can behave very differently than in test-tubes. Most techniques are unable to cope with or ignore the complexity and disorder of the cytosol. The project is to develop a new and innovative toolkit based on pulse dipolar spectroscopy (PDS) that will allow in-cell nanometer scale measurements of protein structure and dynamics. The ultimate goal is to develop methods that exploit conventional molecular biology and the new and fast-growing area of genetic code expansion to produce targeted protein complexes with new functionalities to form paramagnetic centers within the cells, thus obviating the need for isolation and post-translational modification. To this end the successful candidate will be involve in the incorporation of non-conventional into the target proteins, preparation of samples and realization and interpretation of the PDS measurements.

We are looking for a highly motivated candidate with experience in molecular biology and biochemistry willing to work in a highly interdisciplinary environment. Experience in biophysics and bioinorganic are not a requirement, however the candidate is expected to learn basic theory and the use of complex instrumentation.

We are a leading laboratory in the study of biological systems by high-field Electron Paramagnetic Resonance. Our laboratory count with two state-of-the-art high-field EPR spectrometers ranging from 95 to 285 GHz. We also have a number of conventional 9 GHz spectrometers and facilities for molecular biology and biochemistry work. The I2BC provides a rich working environment that combines all aspect of integrative biology. The position is offered for 24 months.

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