

Post-doctoral position in synchrotron and super resolution imaging of metals applied to Neurosciences at CENBG, CNRS and University of Bordeaux (France).

Employer: CNRS

Salary: from 31,000 to 36,000 euros gross annual depending on experience

Workplace: University of Bordeaux, France

Application deadline: January 15th, 2022

Missions

Investigate the molecular mechanisms of metal-induced synaptic toxicity in Alzheimer's disease using synchrotron X-ray fluorescence and super resolution STED imaging.

Scientific project

Alzheimer's disease can be triggered and/or accelerated by environmental exposure to metal contaminants. A novel mechanism of metal-induced neurotoxicity will be evaluated based on the direct interaction of metals with the synaptic cytoskeleton architecture. Interactions of environmental neurotoxic metals with synaptic cytoskeleton proteins will be characterized at the cellular and molecular levels, and prevention strategies involving essential metals will be evaluated. The presence of environmental toxic metals in synapses, and the consequent alteration of synaptic structures, will be characterized using state-of-the-art synchrotron X-ray fluorescence nano-imaging of metals correlated with super-resolution STED microscopy of proteins (Domart et al., eLife, 2020).

Activities

- Sample preparation and performance of STED and immunofluorescence microscopy of cytoskeleton proteins on cultured primary neurons.
- Sample preparation and participation to synchrotron X-ray fluorescence experiments on large scale physics facilities in France and Europe.
- Data analysis for quantitative and correlative imaging.
- Interpretation of data in the context of molecular mechanisms of synaptic toxicity and environmental exposures.

Skills

- PhD in Biology, Chemistry, or Physics.
- experience in cell biology, synchrotron and/or super resolution imaging is desirable
- ability to work meticulously
- interest in innovative imaging techniques and data analysis
- interest in the field of health/environmental research
- ability to communicate and write in English

Work Context

We offer an attractive work environment within the University of Bordeaux including cooperation with the Interdisciplinary Institute of Neurosciences (IINS, team D. Choquet) and with the Laboratory of Interactions Metal Proteins at the University of Aix-Marseille (BIAM, team C. Berthomieu and V. Malard).

Contact:

Requests for information as well as applications accompanied by a complete CV, a letter of motivation and the contact information of 3 references should be sent to Richard Ortega (ortega@cenbg.in2p3.fr).