PhD fellowship Offer
2022-2025

1 PhD fellowship is offered at NutriNeuro lab, in collaboration with LCPO and ISM under the supervision of Dr Clementine Bosch-Bouju.

Title: Development of a new method for the release of bioactive molecules in the brain

Key words: Drug delivery; polymersomes; photocleavable dyes; brain; electrophysiology; confocal microscopy

Qualifications

- Background and interest in chemistry / biology / pharmacology.
- High self-motivation, autonomy, well organized, team working
- Good IT skills
- Technical skills in biology (immunofluorescence, electrophysiology) and/or chemistry (synthesis chemistry, polymer chemistry)

Thesis detailed overview

The objective of the thesis project is to set-up a new technology for the controlled release of drugs in the brain, through light-activation of encapsulation vesicles (polymersomes). This new method is based on existing technologies widely used in neuroscience and pharmacology: photo-stimulation (such as for optogenetics) and drug delivery through encapsulation. This project is piloted at NutriNeuro and is in collaboration with two chemistry teams (LCPO and ISM), all three located in Bordeaux. The project will also benefit from the rich scientific and technical environment of Bordeaux Neurocampus.

During her/his PhD, the student will be involved in the design and production of biocompatible and photoactivable polymersomes. The student will also perform experiments with *in vivo* and *ex vivo* imagery and electrophysiology. Long-term, the objective of the project is to improve treatments for neurological and neuropsychiatric disorders.

Application with CV, motivation letter and reference letter should be submitted at clementine.bosch-bouju@inrae.fr