

Twelve months post-doctoral position  
Brain SPECT/PET imaging of Tau oligomers

Team : Neurodegenerative Diseases

Location : Site santé - Domaine de la Merci, Faculté de Médecine et Pharmacie Grenoble

The management and treatment of Alzheimer's disease patients call for a strong diagnosis as early as possible. This project concerns the development of nuclear imaging tools to detect the early abnormal forms of Tau in the human brain with Single Photon Emission Computed Tomography (SPECT) and Positron Emission Tomography (PET) in order to improve the diagnosis and the follow-up of AD hallmarks. Our strategy is to develop radiolabeled nanobodies (Nbs) directed against the oligomeric form of pathologic Tau protein. We produced a Nb with both good affinity and specificity for human tau protein oligomers. We manage to increase the passage of the blood-brain barrier from this Nb, as demonstrated in vitro in an artificial model by associating it with peptides facilitating the BBB crossing. The purpose of this project is to validate in vitro and in vivo these new ligands of early pathological forms of Tau after radiolabeling with Technetium-99m ( $^{99m}\text{Tc}$ ) as well as with Gallium-68 ( $^{68}\text{Ga}$ ). Their biodistribution will be assessed in wild-type mice. Radiotracers will then be validated in transgenic mice along SPECT/PET imaging studies and the  $^{99m}\text{Tc}$  and  $^{68}\text{Ga}$  radiolabeled ligands will finally be compared to the most currently used radiotracer.

We are looking for a highly motivated candidate for a 12-months, full-time postdoctoral position. A solid background in the field of neurobiology and cerebral imaging is expected. Knowledge in the field of nuclear imaging will be appreciated. This project will include in vitro as well in vivo experimentation.

The "Radiopharmaceutiques Biocliniques" laboratory is a research unit of the French National Health Institute (INSERM UMRS\_1039). The objectives of this unit are to develop new radiopharmaceuticals for resolving commonly encountered clinical problems in the setting of diagnostic, prognostic or therapeutic strategies. The different research fields of the laboratory are cardiology, metabolism, oncology and neurodegenerative pathologies (<https://lrb.univ-grenoble-alpes.fr>).

Screening of applications will begin on September 2022 the 1<sup>st</sup> and position will remain open until filled. Please email your detailed CV including publication list with copies of the most relevant ones, and the names/contact information of two individuals/supervisors who can provide a detailed account of your accomplishments and abilities, to:

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