

POSTDOCTORAL POSITION

Astrocyte signaling in health and neurodegenerative diseases

Team of Carole Escartin, NeuroPSI

A post-doctoral position is available in the team of Carole Escartin at NeuroPSI (Paris-Saclay Institute of Neuroscience, in Saclay, 25km south of Paris, France). The successful candidate will join a team of 7 people studying astrocyte signaling in health and neurodegenerative diseases.

Astrocytes are emerging as key players in many diseases [1-3], through complex and yet-to-characterize communication with neurons [4]. The goal of this project funded by an Equipe FRM grant is to explore how astrocytes use transcription-factor based signaling cascades for their long-term interactions with neurons in health and disease. Specifically, the successful candidate will i) develop novel cell-specific molecular tools for the precise manipulation of key astrocyte intracellular signaling cascades in the mouse brain; ii) establish how specific signaling cascades govern diverse reactive astrocyte molecular and functional features in an *in vivo* model of Alzheimer's disease and iii) evaluate the therapeutic benefit of specific signaling targeting in astrocytes *in situ*.

Technical description:

This multidisciplinary project involves viral gene transfer in the mouse brain, immunostainings, fluorescence activated cell sorting of astrocytes, functional cellular imaging (on slices and 2-photon), transcriptomics and mouse behavioral analysis.

NeuroPSI offers a unique environment to perform this project, by gathering multidisciplinary research teams, skilled technical staff, biosafety level 2 laboratories to manipulate viral vectors and state-of-the-art facilities to study neuron-astrocyte interactions at the molecular, cellular, functional and behavioral level.

Qualifications:

We are looking for a highly motivated candidate with research experience in several of these techniques and a strong background in glial cell biology.

Applicants must hold (or be about to obtain) a Ph.D. in Neurosciences or Cellular Biology and be fluent in English. They should be willing to work autonomously in a collaborative environment and be dedicated to the progress of a demanding and original project.

Applicants should send a CV, a letter of motivation and two reference letters in a single pdf document.

Terms:

24-month post-doctoral position starting in May-September 2024, salary depending upon experience.

Extension will be possible by applying to additional post-doctoral fellowships. The successful candidate will receive all necessary training, regular supervision and constructive discussion on his/her results and future career. He/she will have access to dedicated equipment and reagents and have the opportunity to present at internal and international meetings.

Contact :

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1. Abjean, L., et al., *Reactive astrocytes promote proteostasis in Huntington's disease through the JAK2-STAT3 pathway*. *Brain*, 2023. **146**(1): p. 149-166.
2. Ceyzeriat, K., et al., *Modulation of astrocyte reactivity improves functional deficits in mouse models of Alzheimer's disease*. *Acta Neuropathol Commun*, 2018. **6**(1): p. 104.
3. Ben Haim, L., et al., *The JAK/STAT3 pathway is a common inducer of astrocyte reactivity in Alzheimer's and Huntington's diseases*. *J Neurosci*, 2015. **35**(6): p. 2817-29.
4. Escartin, C., et al., *Reactive astrocyte nomenclature, definitions, and future directions*. *Nat Neurosci*, 2021. **24**(3): p. 312-325.