

Postdoctoral Position

Team Synaptic Plasticity and Neural Networks

Institute of Psychiatry and Neuroscience of Paris, INSERM U1266
Team heads: Vivien Chevalyere and Rebecca Piskorowski
Duration of position: 3 yrs
Starting date: March 2021

We are currently recruiting a highly motivated postdoc to work with our team on a project examining the cellular mechanism allowing environmental factors to influence social cognition.

Environmental enrichment is a promising therapeutic approach for the treatment of several psychiatric diseases. In particular, significant improvements have been observed in patients suffering from pathologies with altered social cognition such as schizophrenia and autism spectrum disorders. However, the cellular and molecular mechanisms underlying the beneficial effect of environmental enrichment are poorly understood. Area CA2 of the hippocampus, a brain structure critical for social cognition, is specifically altered during several psychiatric diseases such as schizophrenia. Importantly, we described similar alterations in a mouse model of schizophrenia, thus validating this model to study potential treatments.

Our team has found that hippocampal area CA2 is very sensitive to environmental conditions. In wild type mice that have spent 3 weeks in an enriched environment, we observe an increase in social recognition memory, a decrease in inhibitory transmission and an increase in pyramidal neuron excitability. Strikingly, we observe similar electrophysiological changes in a mouse model of schizophrenia as well as a complete rescue of social memory. Thus, the goal of this project is to study the effect of environmental enrichment during normal and pathological conditions. In particular, the candidate will be expected to use a variety of electrophysiological techniques to determine the mechanisms involved in the change in action potential threshold and in inhibitory transmission induced by environmental enrichment.

Our team is located in a recently created state-of-the-art INSERM research institute in Paris. Experience with whole-cell patch clamp recordings and data analysis is required. Successful candidates will also communicate well and thrive in a team-oriented environment.

Please send CV and names of references to vivien.chevalyere@parisdescartes.fr or rebecca.piskorowski@inserm.fr

Recent Publications:

- Chen S et al. (2020) *Nature*. 586, 270-274.
- Robert V, et al (2020) *Journal of General Physiology*. 152(4). Apr 6.
- Domínguez S, et al (2019) *Cell Reports*. Oct 29;29(5):1099-1112.e4.
- Nasrallah K, et al (2019) *Cell Reports*. 27, 86-98.
- Boehringer R, et al (2017) *Neuron*, May 3;94(3):642-655.e9.
- Piskorowski RA, et al (2016). *Neuron*. 2016. Jan 6;89(1):163-176.
- Piskorowski RA and Chevalyere V. *J. Neurosci*. 2013. Sept 4;33(36):14567-78.