



UNIVERSITÀ DI PAVIA
Department of Brain
and Behavioral Sciences

Postdoctoral position available

A 2-year (1+1) postdoctoral position is available at the Neurophysiology laboratory at the Dept. of Brain and Behavioral Sciences of the University of Pavia.

Project title: *Mechanisms of susceptibility to cortical spreading depression in migraine: a multiscale approach*

Background: Migraine is a remarkably common and disabling brain disorder, primarily affecting the sensory system but involving the whole central nervous system. The cortical spreading depression (CSD) is considered the neurophysiological correlate of the migraine aura, characterized by transient sensory alterations preceding the headache in a third of patients. CSD is a self-sustaining and slowly propagating wave of nearly complete depolarization of brain cells, which can be experimentally induced in brain tissue, both in acute preparations and *in vivo*. However, CSD generation and propagation, as well as migraine pathophysiology, remain poorly understood.

Project: Here, we propose to investigate CSD impact on neuronal networks in the cerebral and cerebellar cortex. The project will exploit cutting-edge neurophysiological techniques as high-density multielectrode array recordings (HD-MEA, 3Brain) in acute slices and microendoscopic calcium imaging using miniscopes (nVoke2, Inscopix) in freely moving mice. We will take advantage of the FHM mouse models of migraine to characterize CSD impact on neural networks and its threshold in control and mutated mice, both *ex vivo* and *in vivo*. Moreover, the project will also aim at investigating the impact of sleep deprivation, which is one of the main known triggers of the migraine attack, on CSD susceptibility.

The project is in collaboration with Prof. Daniela Pietrobon's lab (University of Padova).

Candidate Requirements: We are looking for a highly motivated candidate, holding a PhD in neuroscience (or related subjects), with experience in neurophysiology. Previous experience with electrophysiological techniques and animal handling / surgery is welcome. The candidate will work in a highly cooperative environment with other postdocs and PhD students.

Starting date: Beginning of 2024

If you are interested, please contact Lisa Mapelli (lisa.mapelli@unipv.it).



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