



PADOVA
neuroscience
CENTER



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

POST-DOC POSITION AVAILABLE AT THE DEPARTMENT OF BIOMEDICAL SCIENCES (UNIVERSITY OF PADUA, ITALY)

RESEARCH PROJECT:

In vivo functional characterization of whole brain- and population-level dynamics in genetic mouse models of migraine

PROJECT DESCRIPTION

Migraine is a remarkably disabling and still poorly understood brain disorder which primarily affects the sensory nervous system. It is characterized by recurrent attacks of unilateral headache and by a global dysfunction in multisensory information processing. Previous investigations at the microcircuit level in genetic models of migraine have revealed significant alterations in the cortical excitatory synaptic transmission due to impaired mechanisms of glutamate release and glutamate clearance. Goal of the proposed project is investigating, in awake animal models, the impact that these microcircuit-level alterations have on the population and brain wide neuronal dynamics. In particular, the investigation will focus on the characterization of the functional connectivity in resting-state condition and of the spatio-temporal features of the activity elicited by a sensory stimulation. At this purpose, the research will adopt mostly optogenetic approaches based on fluorescence-based genetically encoded reporters of the neuronal activity and reporters of glutamate concentrations (iGluSnFr), in combination with large field of view high-speed mesoscale imaging and multiphoton imaging. To characterize the effective connectivity in the FHM models, in a parallel approach, the research will use light-based activity modulators (ChR2/GtAcR) in combination with activity recording.

QUALIFICATIONS

We are looking for motivated and highly committed candidates holding a Ph.D in biomedical, biological or biophysical sciences or other related disciplines, or alternatively a minimum of three years of experience with research in mouse models. Ideal candidate should have a proven experience in techniques for research with mouse models *in vivo* and for functional imaging or optogenetics *in vivo*. High levels of flexibility and proven ability to manage a research project are a plus.

POSITION

The full-time contract (funded by MUR in the PRN2017 Program) will cover a period of 18 months with a salary defined according to the National tables for PostDocs and to the candidate experience.

ABOUT THE RESEARCH TEAM

The selected candidate will work at the Department of Biomedical Sciences at UNIPD under the supervision of Prof. Marco Dal Maschio and Prof. Daniela Pietrobon. For this project, the candidate will have access to all the facilities available at the Department of Biomedical Sciences and at the Padua Neuroscience Center.

CONTACTS

Interested candidates should email marco.dalmaschio@unipd.it and daniela.pietrobon@unipd.it including:

- 1) a cover letter describing scientific experience, interests and career goals;
- 2) full CV;
- 3) reference letter and/or names and contact details for two professional references.

REFERENCES

doi: 10.1016/j.neuron.2009.01.027
doi: 10.15252/emmm.201505944
doi: 10.1016/j.neuron.2020.11.018.