**INSERM/UCA UMR1107 Neuro-Dol "Trigeminal Pain and Migraine"**

Directeur de thèse : R. Dallel (PU), co-directeur C. Alba-Delgado (MCU)

radhouane.dallel@uca.fr, cristina.alba\_delgado@uca.fr

**Role of the dysregulation of tryptophan metabolism on astrocyte-neuron interactions in the somatosensory cortex and its contribution in migraine progression**

Migraine is one of the most common neurological diseases, affecting 15% of Europeans, especially women. Approximately 3% of them suffer from chronic migraine (≥15 migraine day/month). Cortical activity in the migraine patient is abnormal during and between migraine attacks. Among the possible actors of these cortical changes are the glial cells, in particular the astrocytes, which play a role in modulating neuronal communication. Recently, we have shown that the prevalence of migraine is increased in patients with chronic inflammatory bowel diseases. In animals, metabolites derived from the bacterial catabolism of tryptophan (Trp) regulate inflammation of both the gut and the central nervous system. In addition, metabolites of tryptophan are also involved in the pathophysiology of migraine. This project will investigate the impact of the dysregulation of tryptophan metabolism on astrocyte-neuron interactions in the somatosensory cortex and its contribution in migraine progression. We will combine several approaches (behavior, *ex vivo* electrophysiology, and confocal calcium imaging, optogenetics, immunohistochemistry, molecular biology) in a new rodent migraine model.

References:

- Dallel, Descheemeaker & Luccarini (2018). Cephalalgia 38(4).

- Razeghi, Togha, Ghorbani et al. (2019). Neurol Sci. 40(11).