Title: Impact of traumatic brain injury at the molecular and behavioural levels

Supervisor: Anne Meiller and Clélia Allioux

Duration: 3 months

Project Context:
The Lyon Neuroscience Research Center (CRNL) integrates the multidisciplinary expertise of 340 members for a synergistic approach of brain organization, cognitive functions and brain disorders. The team TIGER's research focuses on brain disorders including epilepsy and traumatic brain injury (TBI). The NeuroChem technological platform is specialized in the development of new enzymatic micro-biosensors for in vivo or in vitro detection of neurotransmitters and metabolites. The collaboration between the team TIGER and the NeuroChem platform permits to understand the pathophysiology occurring during TBI, and more specifically the release of neurotransmitters taking place during it.

Project Objectives:
Traumatic brain injury (TBI) is a major health concern. A large proportion of TBI victims are children and young adults, and TBI remains the leading cause of disability in people under 40 years of age. Brain damage results from both an initial physical insult (primary injury), and also continues to evolve in the ensuing hours to days because of secondary neurological complications. Among secondary injuries following TBI, Cortical Spreading Depolarizations (CSD) are waves of depolarization propagating along the cortex that induce a massive energetic demand to repolarize the cells. CSDs participate in prognosis because their occurrence and duration are related to patient's outcome.

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**Bibliography**
