



We recruit a PhD student to

Investigate the importance of mitochondria in cognitive processes during aging

Collaboration : CNRS Univ. Toulouse 3 (France) - Center for Psychiatric Neuroscience of Lausanne, (Switzerland)

Checkout websites : <http://cognition.ups-tlse.fr> and <https://www.chuv.ch>

Twitter : @RememberCrca

Key words: Cognition, mitochondria, brain cells, aging

Summary: The maintenance of healthy mitochondria is critical for brain functions throughout adult life. Aging is associated with a decrease in mitochondrial quality, the decline of biological functions and the development of several diseases.

In the mammalian brain, considerable evidence shows that mitochondrial dysfunctions occur early and contribute to the loss of synaptic function and plasticity. In this context, the two research groups involved in this project (CNRS Univ. Toulouse 3 and CHUV Lausanne, Switzerland) recently demonstrated that mitochondrial disorders play a primordial role in hippocampal function and memory performances during Alzheimer's disease. However, it remains unclear how aging *per se* affects mitochondrial dynamics and functions in the hippocampus and whether mitochondrial defects are causal in neuronal dysfunction. This translational project in close collaboration between Toulouse and Lausanne, will aim to understand the importance of mitochondria in cognition during healthy and pathological aging. Through access to primate and human brain, biobanks (K. Richetin) combined with the manipulation of mitochondrial dynamics targeting hippocampal neural cell populations in mice (M-C. Miquel/ C. Rampon), we will seek for new crucial information linking mitochondria to brain plasticity and cognitive functions throughout aging. We expect that this study will shed light on an unexplored aspect of cognitive diseases, possibly leading to novel diagnostic approaches.

We will give preference to candidates with:

- Excellent M.Sc. (or equivalent) in Neuroscience or biology
- Previous experience in immunohistochemical staining, biochemical assays, microscopy (live and confocal is a plus) and animal behavior
- Excellent English (spoken and written)
- High degree of motivation and ability to work in an interactive research environment
- Data analysis and presentation abilities (computer programming skill as MATLAB or R is a plus)

This combination of institutes within the CARE program offers a vibrant and interactive research environment, state-of-the-art equipment, qualified training and enrolment in a local PhD program.

To apply (deadline sept 27th, 2020): send your CV, motivation letter and reference contacts to:

Marie-Christine.miquel@univ-tlse3.fr and **Kevin.Richetin@chuv.ch**