

2 PhD positions in stem cell metabolism research, University of Lausanne

Somatic stem cells require a tight balance between proliferation and quiescence to fulfill life-long replenishment of tissues. The role of metabolism in this process has only recently gained attention and remains poorly understood. Our laboratory's main focus lays on adult neural stem cells (NSCs) which give rise to new neurons throughout adulthood. This process is called adult neurogenesis and has been shown to be disturbed in various diseases. We are interested in the metabolic regulation of neurogenesis in health, aging and disease, covering basic aspects of metabolic regulation as well as extrinsic influences on NSC metabolism. Furthermore, we are exploring whether there are common mechanism of metabolic regulation in different somatic stem cell compartments.

We are using innovative techniques such as CRISPR/Cas9 mediated genetic modifications, virus-mediated gene expression *in vitro* and *in vivo*, time-lapse imaging, mass spectrometry imaging as well as proteomic, metabolomic and lipidomic approaches.

One PhD-project will focus on metabolomics of NSCs *in vitro* and *in vivo* in close collaboration with the UNIL metabolomics platform. Prior mass spectrometry experience is thus desirable. The other PhD-project will focus on metabolic requirements of NSCs during human brain development, using brain organoids. For this project, solid cell culture experience is desirable.

Requirements:

- Master's degree in life science or equivalent;
- Strong interest in cell biology, neurobiology and metabolism;
- Fluency in English (oral and written);
- Previous research experience in molecular and cell biology (desirable);
- Experience in cell culture (desirable);

Job details:

Starting date: 01.05.2018 or later
Contract length: 1 year, renewable 2x2 years, maximum 5 years
Occupation: 80 %
Working place: Lausanne, quartier UNIL-Bugnon

Highly motivated students should send their application to Prof. Marlen Knobloch (<mailto:Marlen.Knobloch@unil.ch>) and include a letter of motivation, the CV and 2 references.

Comments

Seeking to promote an equitable representation of men and women among its staff, the University of Lausanne encourages applications from women.