

GRADUATE STUDENT POSITION

DIRECT MICROGLIAL REPROGRAMMING TO STUDY THE ROLE OF INFLAMMATION IN PARKINSON'S DISEASE

A graduate student's position is available in the Laboratory of Dr. Janelle Drouin-Ouellet at the Faculty of Pharmacy, Université de Montréal. This laboratory uses cell reprogramming methods to generate neural cells from patient biopsies to better understand the pathophysiology of Parkinson's Disease.

Project: The human brain is a complex organ that presents many challenges for neuroscientists. For instance, tissue availability represents a major problem given that this organ does not regenerate, making it next to impossible to obtain live tissue from patients that would allow to study how cells in the brain change and interact with each other in the contexts of aging and brain diseases. To obtain brain cells in a dish, we and others have developed ways to convert skin cells to neurons, the main functional component of the brain. However, the brain is composed of multiple other cell types, also very important to proper brain function, including immune cells such as microglia. Microglia are essential in protecting the brain against pathogens, but are also thought to contribute to the development of neurodegenerative disorders associated with aging, such as Parkinson's and Alzheimer's disease. In this project, the student will work towards converting skin cells obtained from senior donors to microglia, and study the aging signature in these cells. The completion of this project will not only provide a new tool to gain insight into the role of microglia in the contexts of aging and brain diseases, but also allow the development of sophisticated human brain tissues derived from the skin of patients with brain diseases, to study interaction between different cell types of the brain and test new therapies.

Start date: Spring 2021

Candidates should have a B.Sc. degree in medical biology, neuroscience, pharmaceutical sciences, biochemistry, molecular biology, pharmacology or related fields. Candidates should also have interest in neurodegenerative disorders. Experience in cell culture will be considered a plus.

Interested candidates should send their CV and transcripts from their bachelor's degree to Janelle.drouin-ouellet@umontreal.ca

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