Neurorestorative effects of cystamine in the context of Parkinson's disease

Program:
Masters of Science (M.Sc.) in Neurobiology/PhD in Neurobiology

Research environment:
Centre de Recherche du CHU de Québec, Axe Neurosciences
http://www.crchuq.ulaval.ca/recherche/axes/neurosciences

Project description: Neurorestorative effects of cystamine in the context of Parkinson's disease
Parkinson's disease (PD) is a debilitating neurodegenerative disorder whose cardinal motor symptoms are rigidity, tremor and bradykinesia. These symptoms are due, in large part, to a progressive and selective loss of brain dopaminergic neurons. However, all current pharmacological treatments are limited to controlling motor symptoms and have not shown potential in slowing down or halting the progression of the disease. Our laboratory has devoted part of its research to investigating neuroprotective and neurorestorative agents and has identified cystamine as a molecule of interest. Using animal models of PD, we have indeed demonstrated that cystamine has promising therapeutic potential but not only as a neuroprotective agent but also as a compound capable of "repairing" some abnormalities that are found in PD. The goal of this project is to deepen our understanding of the mechanisms of action underlying the beneficial effects of this molecule using in vitro and in vivo models. Moreover, we are working closely with the industry in order to test the molecule in a clinical setting. The techniques to be employed are numerous and include the use of animal models of PD (injection of neurotoxins and transgenic mice), immunohistochemistry and immunofluorescence, flow cytometry, cell culture (cell lines and primary cells from the central nervous system), neuropharmacology, and various techniques of molecular biology and biochemical analyses.

Requirements and conditions:
The candidate should be:
- Highly motivated and dynamic
- Fluent in French and English (spoken and written)
- Excellent adaptability. Efficient and respectful of deadlines. Capable of teamwork.
-For master students: completed bachelor's degree in a relevant discipline with an grade point average superior to B +
-For PhD students: completed master's degree with laboratory experience in a related field
-The student must be admitted to one of the following programs:
Master's with thesis in neurobiology/PhD in neurobiology
-Funding secured

Profile sought:
-Health
-Biochemistry and Microbiology
-Biology
-Medical Research

Documents required:
-Curriculum Vitae
-Transcripts
-Cover letter
-Letters of references (at least 2)

Deadline to apply :
Review of application will begin immediately and continue until the position is filled.
Appointed as soon as possible

Contact information:
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