

Discovery Profile



MitoCanada partners with MITO2i to fund mitochondrial research that could introduce new therapies for Alzheimer's disease

Jessika Royea, PhD | *Postdoctoral Researcher, University of Ottawa*
Principle Investigator Mireille Khacho, PhD | *Assistant Professor and Canada Research Chair, Department of Biochemistry, Microbiology & Immunology, Ottawa Institute for Systems Biology, Faculty of Medicine*

Alzheimer's disease is one of hundreds of illnesses that Canadians suffer from. The disease stems from mitochondrial dysfunction, however, the underlying molecular mechanism and how it contributes to the development of disease remains poorly understood.

Alzheimer's disease in patients and mouse models exhibits an imbalance between mitochondrial fission and fusion. This change in dynamics within the mitochondria has significant consequences on how electrical signals move from one nerve cell to another as well as how the nerve cells themselves function.

Re-establishing an equilibrium within mitochondrial dynamics and structure may

be a potential therapeutic target for recovering mitochondrial function and neuronal homeostasis which is the process by which organisms react to specific conditions while trying to maintain their stability and survival.

Dr. Royea is investigating the significance of Sigma-1-receptors medicines and their impact on mitochondrial function. She hopes her future research will identify whether the FDA approved, pain relieving drug, Pentazocine, can be repurposed for the treatment of Alzheimer's disease as well as other mitochondrial-specific diseases.

Your donations allow us to support life-saving research and offer hope.



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