Diabetes - Molecular Regulation of Pancreatic Beta-Cell Mass

PROJECT DESCRIPTION

Pancreatic beta-cells are specialized cells, whose biological role is to secrete insulin in order to maintain blood glucose values in a narrow physiological range. When this process fails, blood glucose increases and diabetes manifests.

Type 2 diabetes is characterized by a progressive deterioration of beta-cell mass. However, the precise molecular mechanisms governing "beta-cell life and death" are not completely understood. Our research project seeks to identify and characterize novel genes that participate in beta-cell proliferation and apoptosis. The goal is to harness these newly discovered targets to stimulate the generation of new beta-cells, and to protect the beta-cells that still reside in the pancreas of patients with diabetes.

To do so, we employ beta-cell lines, isolated human islets, and transgenic mice. Our study combines several techniques, including: gene expression (qPCR), protein expression and phosphorylation (western blot), measures of cellular proliferation/survival, and morphological analyses of pancreatic tissues (immunofluorescence).

FACULTY-DEPARTMENT

Agricultural, Life & Environmental Sciences - Agricultural Food and Nutritional Sciences (Human Nutrition)

DESIRED FIELD OF (STUDENT) STUDY

Molecular or Cellular Biology, Biochemistry, Pharmacology or other relevant discipline

INTERNSHIP LOCATION

University of Alberta Main Campus - Edmonton

NUMBER OF INTERNSHIP POSITIONS

1

INTERNSHIP START DATE

Flexible

Contact: Brendan Cavanagh, Internship Coordinator (Inbound)
University of Alberta International
intern@ualberta.ca
**INTERNSHIP END DATE**

12 weeks after start date

**ARE THE DATES FLEXIBLE?**

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.