

## Looking for Ms. or Ph.D. students and Lab technician

### Magister/postgraduate position in Molecular Imaging Laboratory

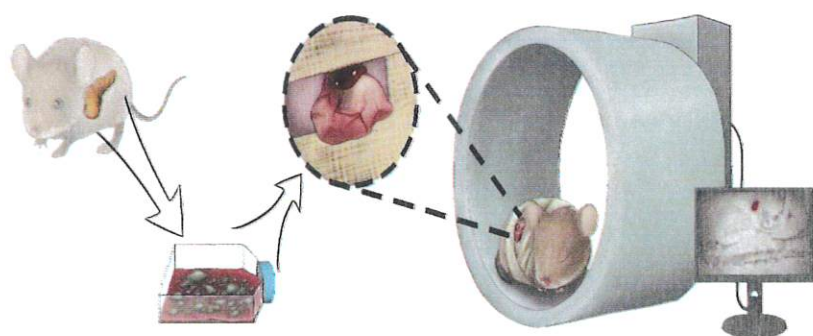
We are looking for a Ms./Ph.D. student(s) and lab technician into our team for a two new projects related to the visualization of transplanted cells.

1. This project aims to evaluate the survival and function of transplanted islets of Langerhans at new transplant sites that need to be considered for use in human medicine. These are transplants into the greater omentum and further subperitoneally in the area of the psoas muscle; these transplantation sites and the therapeutic efficacy of transplanted islets at these sites will be compared in animal models with pancreatic islet transplantation into the liver, which is standardly used in clinical practice and experimental medicine. Accurate non-invasive diagnostic methods are necessary to quantitatively evaluate the transplantation outcome, enabling the precise monitoring of transplanted tissue. An emerging fluorine magnetic resonance imaging method and very sensitive optical imaging will be used as optimal techniques in this respect. New multimodal contrast agents based on water-soluble biocompatible fluoropolymers will be developed and employed to specifically label the pancreatic islets and monitor their fate after transplantation. The efficacy and safety of new transplant sites and polymer tracers will be tested in preclinical models of diabetes.

2. This project deals with the development and testing of new water-soluble multimodal responsive contrast agents for 31P MR and optical imaging. This new pioneering probe can serve as a sensitive 31P MR sensor of pathological conditions in vivo because it undergoes oxidation-induced structural changes in the presence of reactive oxygen species (ROS). The effectiveness and safety of the new contrast agents will be tested on preclinical models of diabetes and tumors.

Pancreatic islets isolation

Pancreatic islets transplantation



Pancreatic islets labeling

Pancreatic islets  $^1\text{H}/^{19}\text{F}$  MR and fluorescence imaging

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