

Post doc at Lund University Diabetes Centre and Karolinska Institute

Subject: Type 2 Diabetes and Islet Biology

Work environment:

The project is a collaboration between a lab with excellence in diabetes research (headed by Nils Wierup) www.wierup-lab.org and a lab at the fore front of single cell sequencing technology (headed by Jens Hjerling-Leffler) www.hjerling-leffler-lab.org. The Wierup lab is part of the Lund University Diabetes Centre <http://www.ludc.med.lu.se/> one of the strongest centers for diabetes research in the world situated at Clinical Research Centre at the Scania University Hospital in Malmö in southern Sweden. The Hjerling-Leffler lab is located at the Department of Medical Biochemistry and Biophysics at Karolinska Institute in Stockholm.

Project title:

Single cell RNAseq to understand what fails in the pancreatic islets during Type 2 Diabetes

As a part of our larger effort to understand gene-regulation in normal and T2D islets we are mapping gene expression in transcriptionally defined cell types in human islets using single cell RNAseq pipeline (Zeisel et al., 2015, Science and Marquez et al., 2016, Science). Cell-type specific gene expression will allow us to proceed with extraordinary precision and will lead to a major leap forward for understanding of islet biology and what fails in T2D. We have established a pipeline for single cell RNAseq of human islet cells and successfully sequenced >2000 cells from human donors. This resulted in a model comprising >10 distinct cell types, including cells expressing the major islet hormones. This model will be confirmed using multiple single molecule in situ hybridization and immunohistochemistry. In addition to sequencing more cells to resolve rare populations and subpopulations, we address how our model is affected by T2D in terms of cell composition and gene-regulatory networks.

Qualifications:

We are seeking a highly motivated person with a Ph.D. in a relevant area and at least one first authorship publication. Excellence in molecular biology, state of the art histology and bioinformatics. A strong background in the diabetes field is a merit but not necessary. Excellence in the English language (written and spoken) is a prerequisite.

The application should include:

CV, publication list with top 5 publications indicated, personal letter, reference letter from at least one internationally recognized senior scientist, diplomas of university degree and high school grades.