



SAHLGRENKA AKADEMIN INSTITUTIONEN FÖR BIOMEDICIN

Utlysning

Project Title Optimization of experimental protocols for single-cell and cell-free RNA

Project duration and dates: 6 months, 01/07/24-31/12/24

Application deadline: 19th April 2024

Amount: 120,000 SEK

Project

A scholarship in cell-free RNA methods for liquid biopsy is hereby announced at the Institute of Biomedicine, Dept. of Medical Biochemistry and Cell Biology.

Background and Purpose

This project seeks to develop a new cell-free RNA liquid biopsy test. The research will collaborate with PhD students and postdocs to set up the experimental methods to sequence cell-free RNA from plasma samples obtained from donors with disease and healthy controls. This will require working with RNA extraction of challenging samples, performing qPCR, and preparing libraries for next-generation sequencing. In parallel the researcher will also contribute to projects related to single-cell RNA sequencing and spatial transcriptomics.

Method

The main task will involve improving several steps in our cell-free RNA pipeline and single-cell RNA sequencing pipelines. The research will collaborate with PhD students and postdocs to improve several steps of these protocols. This will involve organizing samples, preparing workflows, designing and testing variations in the protocols, and troubleshooting. The lab is also developing new methods for single-cell RNA sequencing and spatial transcriptomics, and the researcher is also expected to participate in some of these activities. The researcher will also perform lab management tasks such as keeping a lab inventory, assisting in reagent ordering/stocking, instrument maintenance, lab organization, and training new members of the team in basic molecular biology techniques.

Work plan/Timetable

The first months will be spent setting up the established methods. The material will then be sequenced and analyzed.

Learning objectives

- In-depth understanding of cell-free RNA and library preparation for single-cell transcriptomics.

Applicant:

The ideal candidates should have the following qualifications:

- MSc in a relevant area such as Biotechnology, Molecular Biology, Systems Biology, Biochemistry, Cell Biology or related disciplines.
- Highly motivated, proactive and diligent.
- Experience with molecular biology techniques for NGS (DNA/RNA extraction, PCR, qPCR, library prep, tapestation).
- Experience with cell-free RNA extraction and library prep is a plus.
- Experience with single-cell RNAseq or spatial transcriptomics is a plus.
- Meticulous in the lab and ability to keep lab notebooks of experiments and results.
- Ability to work independently and in a team.
- Ability to summarize results and present them in internal and external meetings.
- A major emphasis will be placed in personal compatibility.
- Fluency in English.

Application:

Applications should be emailed to Dr. Joan Camuñas Soler: joan.camunas@gu.se

The application should include: Motivation letter, CV including contact info.