

Utlysning

Project title

Single-cell maps of human developmental hematopoiesis

Project duration and dates

3-months project, to be carried out from February 21st to May 20th 2025.

Application deadline: February 10th 2025.

Amount: Stipend of 16 000 SEK/month

Project Summary

Human pluripotent stem cells (hPSCs) have near-indefinite expansion potential, and the ability to differentiate into every cell type in the body. They thus represent a promising source of clinically relevant cell types for novel life-saving treatments for cancer and degenerative diseases. Moreover, as *in vitro* differentiation of hPSCs mimics defined processes of embryonic development, it can also be used to dissect molecular mechanisms underlying developmental perturbations.

The development of the blood system is especially challenging to model *in vitro*, as embryonic blood develops through successive waves in multiple anatomical locations, in close association with the endothelial cells forming the developing circulatory system. Our research group has established an hPSC-based *in vitro* model of human blood lineage development (ie developmental hematopoiesis), to investigate prenatal transformation events leading to childhood leukemia.

Our group has generated a unique single-cell transcriptional dataset of hPSC differentiation towards the hematopoietic lineage spanning several developmental time-points. The goal of this project is analyze this dataset to identify the developmental populations relevant for human developmental hematopoiesis and leukemogenesis.

Applicant

We are looking for a highly motivated and dedicated candidate, who wishes to gain in-depth expertise in the analysis of single-cell profiling of stem cell and developmental biology datasets, hematology and molecular mechanisms of differentiation. This project is intended for a candidate who has completed their Masters degree, and who is interested in pursuing an academic career by enrolling in a PhD in the future.

Preference will be given to candidates who already have prior experience in R coding and in using high performance computing facilities. Well-ranked candidates showing high interest in acquiring this hands-on training will also be considered.

Application

Send by e-mail to carolina.guibentif@gu.se the following documentation, as attached pdf files: *Curriculum Vitae*, motivation letter, contact details for at least two references (phone number and e-mail address). Deadline: 2024-06-04.