Technology development for high throughput comparative genomic analysis of copy number variations.

Project description

Comparative genomics has become a core approach in the post genomic era. In this project we will develop a scalable approach for high throughput comparative genomics by adapting the selector technology[1] to a microarray format. The selector technology enables selective amplification of genomic loci in multiplex. The project will exploit this new approach to investigate copy number variations in model systems for human disease.
During the course of the project the student will learn several techniques, including microarray manufacturing and analysis, quantitative PCR, bioanalyzer, on chip amplification procedures along with conventional methods such as spectrometry, gelelectrophoresis and so forth.

The research group of molecular medicine, http://www.genpat.uu.se/molme/

The project is carried out in the research group of molecular medicine at Uppsala University, department of genetics and pathology, Rudbeck laboratory.
The research group is headed by Professor Ulf Landegren and associate professor Mats Nilsson and has a long track record of cutting edge technology development in the biotechnology and molecular medicine sector, with several successfully commercialized inventions. Further on, the lab is well funded well published and connected and to several other outstanding labs and companies in collaborative projects both nationally and internationally.

Applicant

Interesting applicants include students with background in molecular biology, biotechnology, medicine, biomedicine or pharmacy, however other backgrounds may be acceptable. Previous laboratory experience is an advantage, interest and motivation is required. After initial introduction the project is designed to allow the student to gradually design and push the research project independently, however always in the context of the group, and good communicative and social skills are required. Applications will be evaluated and subsequently interviews will be performed.

Recent relevant publications:

1) Dahl F et al **Multiplex amplification enabled by selective circularization of large sets of genomic DNA fragments.** Nucleic Acids Res. 2005 Apr 28;33(8):e71

Contact information & applications

Magnus Isaksson
Molecular MedicineDepartment of Genetics and Pathology
Rudbeck laboratory
Daghammarsköldsväg 20
SE-75185 Uppsala Sweden
Ph: +46 (0)18 471 4907
Mail: Magnus.Isaksson@genpat.uu.se