Master Degree Project

Implementation of novel microfluidic devices in advanced cell studies

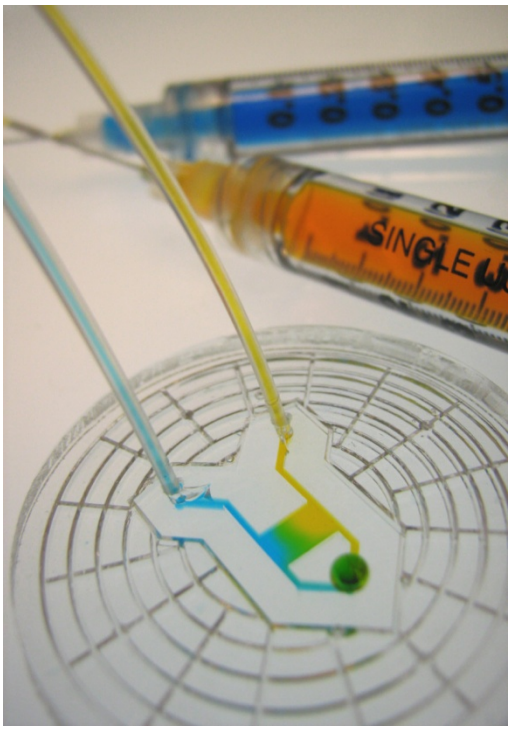
Dr. Johan Kreuger, Dept. of Medical Biochemistry and Microbiology, Uppsala University, Husargatan 3, SE-751 23 Uppsala, Sweden

Dr. Sara Thorslund, Gradientech AB, Uppsala Science Park, Dag Hammarskjölds väg 52B, SE-752 37 UPPSALA, Sweden

E-mail: Johan.Kreuger@imbim.uu.se, Sara.Thorslund@gradientech.se

Project start: August/September 2011
Application deadline: August 15, 2011

Project description



Microfluidic technology has the potential to revolutionize experimentation with living cells *in vitro*, as it enables precise manipulations of cells together with high content analysis of cell responses. Microfluidic cell-based assays may in the future be widely used for clinical diagnostic applications, state-of-the-art drug development and basic medical research.

The current project is focused on the implementation of novel microfluidic devices that allow formation of predictable concentration gradients in advanced cell culture systems.

In all living organisms gradients of signaling molecules control biological processes such as cell survival, signaling, activation, migration and differentiation. The ability of cells to respond to gradients is essential to all aspects of developmental biology.

The project involves the application of several in-house developed microfluidic devices to study cell chemotaxis and cell-cell interactions. The exact project objective will be adjusted to the background and skills of the successful applicant. The project may serve as a foundation for further PhD studies or employment at Gradientech AB.

Dept. of Medical Biochemistry and Microbiology, Uppsala University

Research carried out within the Dept. of Medical Biochemistry and Microbiology at the Uppsala Biomedical Center concerns the mechanisms, primarily at the molecular and cellular levels, that together enable life.

Gradientech AB

Gradientech AB is a Swedish biotech company developing unique microscale platforms for the cell biology research market. Gradientech AB was founded in 2009 and is a spinoff from Uppsala University. Gradientech is growing and has during the spring of 2011 moved into new facilities at Uppsala Science Park, close to BMC and the Angstrom Laboratory.

Applicants

We seek 1-2 highly motivated and ambitious students with good communicative and social skills. A strong personal drive is essential. Applicants should preferably have a solid background in one or more of the following areas: biotechnology, cell and molecular biology, engineering with medical focus, or biomedicine. Previous laboratory experience is an advantage.

All applications will be evaluated, and interviews performed with the top candidates. CV comprising relevant educational and professional history including grades is mandatory in your application, together with a short personal cover letter. References and letters of recommendation may increase chances to be accepted.

Please note, applications by e-mail only.