



**Karolinska
Institutet**

SciLifeLab

MSc thesis: Proteomics of cell-cell communication

We are currently looking for an ambitious, highly motivated candidate with a solid background in molecular biology, biochemistry and proteomics, to join the research group of Associate Prof. Simon Elsässer.

A fundamental property of multicellular life is the cooperation and coordination of different cell types to produce complex organismal function. Cells communicate via diffusible small molecules, secreted proteins and a range of other less-characterized mechanisms including microvesicle and exosome exchange (together termed the 'secretome'). A systematic survey of cell-cell communication in a complex organism, such as the mouse, is challenging and hence thousands of secreted proteins are poorly defined in their function, organismal origin, target tissue and cellular receptor. As a consequence, many so-called 'orphan' secreted factors without known receptor and 'orphan' receptors without known ligand remain in the human genome/proteome.

The successful candidate will help develop chemical and systems biology technologies for mechanism-independent systematic discovery of protein-based cell-to-cell communication in the mouse. Cell-type specific secretomes and their reach within the living animal will be profiled to systematically elucidate mode of action, target tissues and cognate surface receptors of diffusible messengers.

The successful candidate is expected to participate in development and application of novel chemical biology and proteomics methodologies. Team-oriented motivation, theoretical knowledge and basic practical training in relevant techniques are required.

We are located within the modern Science for Life Laboratory (SciLifeLab) building on the Karolinska Institutet (KI) campus, Solna, Stockholm, Sweden.

Contact

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