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PhD student in medical cell biology specialized in pancreatic islet cell signalling

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The Department of Medical Cell Biology belongs to the Disciplinary Domain of Medicine and Pharmacy and is an important part of the recently launched interdisciplinary Uppsala Diabetes Centre (UDC). The Department has a long tradition of successful research into both type 1 and type 2 diabetes. Research in medical cell biology includes e.g. cellular and molecular mechanisms controlling the release of blood glucose-regulating hormones with the overarching goal to understand the mechanisms behind the defective hormone secretion patterns in diabetes. Insulin and glucagon from beta and alpha cells in the pancreatic islets of Langerhans are hormones with a direct impact on whole-body glucose homeostasis whereas somatostatin from delta cells exerts indirect effects through paracrine control of the other cell types in the islets. There are gaps in the understanding how hormone secretion is regulated by inter- and intracellular signalling and how altered paracrine crosstalk in the islets contributes to aberrant hormone secretion during development of diabetes.

Duties

The PhD student project aims to use mouse diabetes models and isolated islets *ex vivo* to characterize intra- and intercellular signalling processes and secretion with advanced live-cell imaging approaches as well as more conventional hormone secretion assays. Fluorescent sensors for second messengers and signalling proteins will be expressed globally or with subcellular or cell-type-specific targeting and the importance of various receptors and signalling proteins determined by

pharmacological, genetic or optogenetic perturbations. To facilitate islet perturbations, a platform for using dispersed islet cells to generate pseudo-islets with different cell compositions and with genetically modified cells will be implemented. The project will include in vivo phenotyping of animals and islet isolations, as well as ex vivo physiology and cell biology experiments supervised by docent Olof Idevall and professor Anders Tengholm, Dept Medical Cell Biology.

The successful candidate will devote most of the time towards the research project and own graduate studies. Other service activities within the department, such as teaching and administrative work, can be included within the framework of the employment (maximum 20%). The position will be extended with the time devoted to teaching to allow four years of full-time graduate studies.

Requirements

To meet the entry requirements for doctoral studies, you must

- - hold a Master's (second-cycle) degree in biomedicine, or
- - have completed at least 240 credits in higher education, with at least 60 credits at Master's level including an independent project worth at least 15 credits, or
- - have acquired substantially equivalent knowledge in some other way.

Previous experience from work with laboratory animals and advanced live-cell fluorescence microscopy imaging is a requirement.

The applicant is expected to be able to teach in Swedish and English. Fluency in spoken and written English is a must.

Great emphasis will be placed on personal suitability and collaborative skills.

Additional qualifications

Experience from tissue isolation, especially islets of Langerhans, is a strong merit, as is competence in image analysis.

Rules governing PhD students are set out in the Higher Education Ordinance chapter 5, §§ 1-7 and in [Uppsala University's rules and guidelines](#).

About the employment

The employment is a temporary position according to the Higher Education Ordinance chapter 5 § 7. Scope of employment 100 %. Starting date as agreed.
Placement: Uppsala

For further information about the position, please contact: *Anders Tengholm, 018-471 4481, anders.tengholm@mcb.uu.se*

Please submit your application by the 28th of November 2023, UFV-PA 2023/4185.

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Please do not send offers of recruitment or advertising services.

Submit your application through Uppsala University's recruitment system.

Placement: Department of Medical Cell Biology

Type of employment: Full time , Temporary position

Pay: Fixed salary

Number of positions: 1

Working hours: 100%

Town: Uppsala

County: Uppsala län

Country: Sweden

Union representative: ST/TCO tco@fackorg.uu.se

Seko Universitetsklubben seko@uadm.uu.se

Saco-rådet sacco@uadm.uu.se

Number of reference: UFV-PA 2023/4185

Last application date: 2023-11-28

Apply for position