



SAHLGRENKA AKADEMIN INSTITUTIONEN FÖR BIOMEDICIN

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Institutionen för biomedicin

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Avdelningen för Medicinsk Kemi och Cellbiologi

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Scholarship announcement – postdoc

Herewith we announce a postdoctoral stipend in Biochemistry at the Institute of Biomedicine, Department of Medical Biochemistry and Cell Biology, Gothenburg University, Sweden.

Titel: Investigating the role of novel proteins implicated in the mitochondrial protein quality control

Background: Mitochondria convert chemical energy into ATP by utilizing a system of molecular machines, the respiratory chain complexes. The complexes driving oxidative phosphorylation are a mosaic of proteins encoded by the nuclear and the mitochondrial DNA. Therefore, assembly of the respiratory chain and the ATPase requires not only expression and import of many nuclear encoded proteins but also translation of mitochondrially encoded proteins. The mitochondrial genetic system is responsible for replication and transcription of the mitochondrial genome, and for the synthesis of a few polypeptides within the organelle by mitochondrial ribosomes (mitoribosomes). Dysfunction of these processes underlies many human disorders and aging. It is therefore surprising that so little is known about how mitochondrial protein synthesis and how the proteins are assembled into complexes.

Purpose: We have in the past established methods allowing to identify proximity interactors of proteins implicated in mitochondrial gene expression (Mol Cell. 2023;83(19), Mol Cell. 2020;79(6), Mol Biol Cell. 2018;29(20)). Given that protein proximity often implicates functional interdependence, we could unravel new molecular mechanisms important for mitochondrial protein

biogenesis and degradation. In this project, we will use this knowledge to determine which proteins are found in vicinity to the mitochondrial ribosome of human cells and identify their molecular function.

Methods: We will employ a wide array of methodology including molecular biology, biochemistry, and structural biology.

Requirements: We are interested in recruiting a postdoc with previous experience in studying mitochondria, using genetic manipulation of human cell lines as well as biochemical methods. It is a requirement to have substantial experience in the broader field of molecular biology and have appropriate methodological know how.

The stipend is scheduled for 2025-05-01 – 2027-04-30

For more information, see www.martinottlab.com or contact Martin Ott: martin.ott@gu.se