



THE SAHLGRENKA ACADEMY
INSTITUTE OF NEUROSCIENCE AND PHYSIOLOGY

Department of Clinical Neuroscience
Administrator: Kirsten Toftered
Telephone No: 031-342 24 38
E-mail address: kirsten.toftered@neuro.gu.se

Announcement - scholarship at undergraduate/advanced level

The Department of Clinical Neuroscience, Institute of Neuroscience and Physiology, hereby announces a vacant scholarship at undergraduate/advanced level in **Neuroscience**.

Training Plan

Subject: Neuroscience

Background: Exosomes, released by various cell types, play a critical role in intercellular communication and modulating cellular behavior. Specifically, communication between the brain and blood is essential, especially during aging and pathological brain conditions, where the transfer of factors, cells, and exosomes between the brain and blood is increased.

Purpose: The focus of this 3-month project is to investigate the influence of human-blood plasma-derived exosomes on the development of human neural stem cells and the functional properties of human neurons using high-content imaging and microelectrode array (MEA) technology.

Method: Established human induced pluripotent neural stem cell lines will be cultured in vitro and exposed to exosomes isolated from human blood samples obtained from healthy individuals. The differentiation potential of these cells into neurons and astrocytes will be evaluated using immunocytochemistry and high-content imaging. In addition, MEA recordings will be used to assess the functional properties of developing neurons derived from NSCs exposed or not exposed to human-blood-derived exosomes.

Time plan: The project is planned for 3 months and involves immunocytochemistry and high-content imaging analysis of blood-derived exosomes iPS cell cultures. In addition, MEA recordings will be conducted on developing neuronal networks.

Learning outcome: Overall, this project aims to provide methodological tools for analyzing neuronal differentiation from human IPS cells. It applies these methods to study how blood-derived exosomes, obtained from human plasma, may influence neuronal development and neuronal functioning in vitro. The overarching aim is to decipher the role of blood exosomes in human brain function in healthy subjects and patients affected by pathological conditions.

Period

2024-02-15 to 2024-05-14

Financing

1 payment of 36 000 SEK. A total of 36 000 SEK for the whole period.

If you require any further information, please contact Hans-Georg Kuhn,
georg.kuhn@neuro.gu.se , supervisor.

Application

To apply please fill out the form “Scholarship application” and send it to Hans-Georg Kuhn,
georg.kuhn@neuro.gu.se , supervisor.

Please attach a copy of:

CV

Letter of motivation

Registration certificate

Closing date: 2024-02-13