Date: 2021-05-05
Reg. No.: GU 2021/1311

UNIVERSITY OF GOTHENBURG

THE SAHLGRENSKA ACADEMY
INSTITUE OF NEUROSCIENCE AND PHYSIOLOGY

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Announcement - scholarship at undergraduate/advanced level

The Department of Psychiatry and Neurochemsitry, Institute of Neuroscience and Physiology, hereby announces a vacant scholarship at undergraduate/advanced level in neurobiology with special emphasis on addiction research and electrophysiological slice recordings.

Training plan

Background: Drugs of abuse, including alcohol and nicotine, are major contributors to the global burden of disease. Still, the mechanisms underlying drug addiction are not fully known. There are also limited pharmacological treatments available to treat drug addiction. To this end, we need to conduct more basic studies to outline neurobiological underpinnings of addiction, and establish neuronal mechanisms that can be targeted pharmacologically to reduce the risk of drug relapse.

Purpose: The aim with this preclinical project is to define acute and long-lasting effects by drugs of abuse (nicotine, alcohol, amphetamine) on neurotransmission in rodents.

Method: In this project we will employ electrophysiological whole cell recordings in acutely isolated brain slices to assess the impact of acute and repeated drug exposure and abstinence on neuronal function and communication. Electrophysiological whole cell recordings are technically demanding and requires a lot of training, but when managed, this method allows for detailed assessments of neuronal function. Focus will be on monitoring spontaneous activity (voltage clamp mode), and establish excitability (current clamp mode).

In the project we will use drug naïve rats, rats that has self-administered addictive compounds in operant chambers, and animals that has been injected with relevant doses of drugs of abuse. Animal treatment and handling will be performed by senior scientists, but the student will participate to actively learn how to conduct and interpret behavioral studies. The student will also be encouraged to learn other methodologies available in the lab, including microdialysis, PCR and immunohistochemistry.

Time plan

During the first two months the student will be trained in the methods described above. During the last three months the student will learn how to conduct whole cell recordings and be tutored in analyzing and assembling that data.

Learning outcome

The students will learn advanced methodology for monitoring neuronal function and how to analyze, interpret and present that data
The student will also get practical experience in a wide array of cell biological and behavioral

techniques, which will be valuable for a future career in the field of neuroscience

Period
2021-06-01 to 2021-10-31

Financing
1 payment of 75.000 SEK. A total of 75.000 SEK for the whole period

If you require any further information, please contact Louise Adermark, louise.adermark@neuro.gu.se, supervisor.

Application
To apply please fill out the form "Scholarship application" and send it to Louise Adermark, louise.adermark@neuro.gu.se, supervisor.

If, during the stipend period, you are a registered student at the University of Gothenburg, other Swedish university or an international university with which the University of Gothenburg has a collaboration agreement – Please attach a copy of your registration certificate with your application.

Closing date is 2021-05-26.