



THE SAHLGRENKA ACADEMY
INSTITUTE OF NEUROSCIENCE AND PHYSIOLOGY

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Announcement - scholarship at undergraduate/advanced level

The Department of Physiology, Institute of Neuroscience and Physiology, hereby announces a vacant scholarship at undergraduate/advanced level in The impact of perinatal inflammation on later-life autism.

Training plan

Background: Childhood neuropsychiatric disorders, including autism spectrum disorder (ASD), are increasingly prevalent worldwide, posing significant public health concerns and representing some of the most pressing therapeutic challenges of the 21st century. The etiology of autism is complex and multifactorial, involving a dynamic interplay between genetic predispositions and environmental influences that together disrupt normal brain development and contribute to the manifestation of autistic phenotypes. Among environmental risk factors, perinatal inflammation has emerged as a critical contributor, with mounting evidence suggesting that maternal or early-life inflammatory events can profoundly affect neurodevelopment and increase the susceptibility to autism later in life. Despite this, determining the precise types of infections or inflammatory insults that most strongly predispose individuals to ASD remains a significant challenge, highlighting the need for further mechanistic studies.

Purpose: Accordingly, a deeper exploration into the relationship between various infectious agents and the onset of autism is essential for enhancing our ability to prevent and manage the condition effectively. Therefore, the aim of the current project is to investigate the role of perinatal inflammation with Poly I:C (mimicking viral infection) on the synaptic plasticity of hippocampus in relation to autism later in life.

Method: In this project, C57/Bl6 male mouse pups will receive Poly I:C (10mg/kg) to mimic viral infection/saline at postnatal day (P) 5. At P45±5, animal behaviour will be examined by performing three-chamber test (sociality behavior) and marble test (repetitive behavior). Directly after behavioral testing, brain tissues will be collected and synaptic plasticity of hippocampus as one of the main involved brain regions in autism will be examined by doing golgi staining and 3D analysis of spines using IMARIS software.

Time plan: Four months project.

Learning outcome: This project will provide insights into how perinatal inflammation influences autism-related behaviors and hippocampal synaptic plasticity, while also equipping the student with skills in animal behavior testing, neuroanatomical analysis, and data interpretation relevant to neurodevelopmental disorders. This training position comes with a stipend, which does not represent a salary, and the activities performed are not regarded as work.

Period

2025-11-10 to 2026-03-06

Financing

1 payment of 52000 SEK. A total of 52000 SEK for the whole period

If you require any further information, please contact Maryam Ardalan,
Maryam.ardalan@gu.se, supervisor.

Application

To apply please fill out the form “Scholarship application” and send it to Maryam Ardalan,
Maryam.ardalan@gu.se, Supervisor

Please attach a copy of:

CV

Letter of motivation

Closing date is 2025-11-03.