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THE SAHLGRENSKA ACADEMY
INSTITUE OF NEUROSCIENCE AND PHYSIOLOGY

Department of pharmacology
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Announcement - scholarship at undergraduate/advanced level

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

Training Plan (max. one A4 page)

Subject: Oxytocin and the social brain: Behavioral and neuroanatomical experiments in zebrafish
Background: Autism Spectrum Disorders (ASDs) are characterized by difficulties with social interactions, communication and repetitive behaviors. Although the condition severely affects 1% of the population worldwide, no pharmacological treatment is available yet. Promise has emerged from studies showing that intranasal treatment with the nonapeptide oxytocin promotes attention to social cues, and alleviates symptoms in autistic patients. The research group has in recent years established behavioral models and neuroanatomical methods allowing studies of social behavior, neuroanatomy and molecular mechanisms in zebrafish. Zebrafish is a highly social species using vision rather than olfaction in social interactions. The research group recently showed that the neuropeptide oxytocin is crucial for social behaviour in zebrafish – similar to what is seen in mammals.
Purpose: To use genetic tools to investigate how oxytocin influences the development of social behavior in young zebrafish. In addition, immunohistochemical methods will be used to identify which brain regions are involved in oxytocin's behavioral actions in larval zebrafish.
Method: To investigate how oxytocin modulates social behavior during the development, social preference behavior will be measured in zebrafish mutants lacking either or both of the oxytocin receptors, as well as in their control siblings at larval, juvenile and adult stages. Moreover, immunohistochemistry (IHC) with antibodies toward phosphorylated S6 (pS6), an endogenous sensor of neuronal activation, will be used to identify neurons of the zebrafish brain that are differentially activated in zebrafish mutants and controls.
Time plan: Month 1: training with supervisor; Month 2-3: Running experiments; Month 4: Summary of data and learning outcome
Learning outcome: The student will learn the basics in neuropsychopharmacological research and will be familiarized with preclinical neuroanatomical and behavioral methods. The student will through seminars and presentation of obtained results learn more about autism and social behavior. The student will be trained in laboratory work and working as a researcher. The scholarship covers living expenses and is not coverage for work conducted at the University of Gothenburg.

Period
2024-08-01 to 2024-11-30.

Financing
One payment, in total 60 000 SEK for the whole period

If you require any further information, please contact Lars Westberg, lars.westberg@pharm.gu.se, supervisor.

Application
To apply please fill out the form “Scholarship application” and send it to Lars Westberg, lars.westberg@pharm.gu.se.

Please attach a copy of:

CV
Letter of motivation
Registration certificate

Closing date is 2024-07-11