

Postdoc/OIO, molecular neurobiology: identifying and targeting neurons underlying eating disorders

The position

scRNAseq has revealed the enormous variety of brain cell types. A major challenge is to unravel the function of specific cell types and their role in brain disease. In this project we take a bioinformatics approach to identify cells underlying brain disease (with a focus on eating disorders), target them with viral vectors and unravel their function using chemogenetics. As the successful candidate for this position, you will be working on your own project, supported by technicians and surrounded by a team of PhD students and postdocs who are working with similar and related technologies. The objectives of this project are to identify and target neurons that are enriched in genetic signals associated with eating disorders. To this end you will utilize a combination of experimental techniques, ranging from identifying the cells using bioinformatics and scRNAseq, to targeting these neurons for chemogenetic control.

You will collaborate with other bioinformaticians to use GWAS data from eating disorders and related traits and use existing scRNAseq data (that are also generated in our lab) to select candidate cells to target with viral vectors (AAV) that we generate ourselves. We will utilize knowledge of the transcriptional machinery of the cells that need to be targeted to build an artificial promoter that selectively targets the candidate cells. This then allows us to record (using fiber photometry) and manipulate (using chemogenetics) these cells while rodents are exposed to models of eating disorders.

Your profile

As a candidate suitable for this position, you are a molecular biologist with experience in bioinformatics (preferably scRNAseq pipelines, GWAS, regulome analysis) and your communicative skills are strong. You must be able to demonstrate an affinity for the study of neural circuits and be interested in working with mice. Valued qualities include an interest in translational research and the ambition to further develop yourself as a molecular neuroscientist. You have experience with programming (Python, R) and bioinformatic analysis and molecular biology and have an allowance to work with rodents. You will be required to work in a team in a collaborative manner and help guide other members in the team.

The department

The Department of Translational Neuroscience is the preclinical department of the Brain Division at the University Medical Center Utrecht. The Department's research mission is to discover and delineate mechanisms and processes fundamental to the development of neural systems and to the control of behavior, and to translate these to pathogenesis and disease models. The Department has the unique advantage of being embedded in the clinical environment of UMCU and having a multidisciplinary character. Its toolkit includes lightsheet microscopy, optogenetics, electrophysiology, and scRNAseq, its own animal facility, viral vector generation and more. The research group run by Roger Adan studies the neural circuits involved in eating disorders with a focus on reward processing.

We offer

For this 100% post, the maximum salary will be € xxxx,-. This will be a temporary appointment for 2-4 years. We will support you in developing your career and encourage you to obtain your own grants.

Interested? Send your application letter and CV to r.a.h.adan@umcutrecht.nl