

The Center for Neurogenomics and Cognitive Research in Amsterdam (see www.cncr.nl) is seeking applications for a

PhD-student in neurophysiology (fixed term, 4 years)

Title:

Presynaptic regulation of synaptic transmission

Background and aim:

Synaptic transmission in the brain is modified by previous experience and external modulation by chemical signals. Modification of presynaptic secretion is an important and often underestimated way to modify transmission. Presynaptic mechanisms modify both the amount of synaptic vesicles available for secretion and their likeliness to be secreted ("release probability"). The aim of this project is to identify and characterize the molecular factors that account for these two mechanisms to regulate secretion in nerve terminals.

Description of work:

Previously identified candidate genes that may contribute to the plastic properties of nerve terminals have been inactivated in mice. Synaptic transmission in these mutant mice will be analyzed in micro-dot island cultures (autapses) and patch clamp. Differences will be validated by acute expression of the inactivated gene using viral transfection. These physiological analyses may be complemented with optical recordings to directly assess presynaptic functions (FM-dyes, synaptopHluorin).

All the electrophysiological and optical techniques, equipment, analysis software, viral vectors and mutant mice are available from the start of the project.

Suitable candidates:

We are looking for candidates with a master degree in (medical) Biology, Biophysics or Physics with hands-on experience in electrophysiology (patch clamp), an interest in neuroscience and a strong motivation to pursue a career in science.

Applications and more info:

Please send CV and cover letter before January 15, 2012 to Els Borghols at els.borghols@cncr.vu.nl with 'position CNCR-PhD53' in the subject line. More info can be obtained via www.cncr.nl or from Dr. Sander Groffen (co-promotor) at sander.groffen@cncr.vu.nl or prof. dr. Matthijs Verhage (promotor), at matthijs.verhage@cncr.vu.nl.