

4-year PhD position Neuroscience

Neuroscience Campus Amsterdam, VU/VUmc

We are looking for a candidate for a PhD project that will be carried out as part of a collaboration between three departments within the Neuroscience Campus Amsterdam.

The group of Prof. Dr. Marjo S. van der Knaap at the department of Child neurology / Pediatrics of the VU University medical center carries out research on brain white matter disorders in children. The research covers all aspects of these diseases, from laboratory bench to bed side. Megalencephalic leukoencephalopathy with subcortical cysts (MLC) is one of the focuses of this research. MLC leads to macrocephaly within the 1st year of life and subsequently to a slowly progressive loss of motor skills and a mild mental decline. At the cellular level countless fluid-filled vacuoles occur within myelin sheaths surrounding axons. We have identified mutations in a gene called *MLC1*, as the cause of the disease. The gene codes for a membrane protein of unknown function. We have recently identified a second gene for MLC. The nature of the interaction between the two proteins is unknown. We have generated a knock-out mouse model for *MLC1*.

The group of Prof. Dr. Huib Mansvelder at the department of Experimental Neurophysiology of the VU participates in the research on MLC, because the *MLC1* protein is most likely involved in ion channel function. Present research is focused on characterization of the putative channel function by patch-clamp techniques.

Dr. Mark Verheijen at the department of Molecular and Cellular Neurobiology is the third partner in this research and applies myelinating co-culture techniques to study effects of *MLC1* and mutants on myelin formation and maintenance.

The PhD student will be involved in the characterization of changes in ion transport and water homeostasis in the white matter of the *MLC1* mouse model. The studies will include mouse brain slices and mouse cells grown in culture. The PhD student will also be involved in studying the effects of reduced *MLC1* expression on myelin synthesis and vacuole formation in the myelin sheaths in the developing brain and in co-cultures of neural cells. We are looking for a candidate with an interest in neuroscience. Experience with any of the techniques mentioned, especially electrophysiology, is an advantage.

For more information on research in the participating groups see www.vumc.nl/whitematter and www.cncr.nl.

Application deadline: April 1, 2009.

For more information on this PhD project you can contact Dr. Gert C. Scheper, Tel. +31 (0)20-5988292, e-mail: gc.scheper@vumc.nl.