

## Position for Early Stage Researcher (36 months)

**Title:** Glial cells in Alzheimer Disease

### **Aim of Project:**

Understanding the early cellular events in the development of Alzheimer's disease (AD) is fundamental for the development of new therapies. While the end-stage neuronal pathology (plaques, tangles and neuronal death) has been studied extensively the early stages of the disease development are poorly understood. Hitherto the glial changes, which occur in AD were mostly regarded as secondary to neuronal or synaptic loss. Advances in glial physiology, however, have demonstrated that glia and especially astrocytes have an active role in the formation and stability of synaptic connections, maintain extracellular brain homeostasis (controlling neurotransmitters and ion concentrations, provide neurones with energy (through the glucose-lactate shuttle)); establish functional link with brain microcirculation and create the microdomain organisation of grey matter represented in a form of neuronal-glia-vascular units. Any failure in astroglial function therefore results in impairments of brain connectivity, synaptic strength and overall performance of neural circuits.

This project therefore will specifically focus on the morphological and functional changes in astroglial and microglia in the brain of AD transgenic animal model (see also J. J. Rodríguez, M. Olabarria, A. Chvatal & **A. Verkhratsky** (2009): *Cell Death & Differentiation*, v. 16, p. 378 - 385).

### **Candidate profile:**

The Early Stage Researcher for this project needs to have a strong background in neuroanatomy and neurohistology; practical knowledge of microanatomy of the brain, of histological techniques, of immunocytochemistry and immunohistochemistry and Western blotting.

### **How to apply & contact data:**

Please send a letter of intent and your CV (including two references) by email to Dr. Sigrid Diether (sigrid.diether@uak-swm.de). She will forward all applications to Prof. Alexej Verkhratsky.

You will find more details on our project website: <http://www.eduglia.eu/partner.html>.