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Investigating the function of astrocytes during neurotrophin-induced synaptogenesis and synaptic plasticity

Speaker:

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Project description:

The emerging concept of the "Tripartite synapse" points to the importance of glia cells for neuronal function and development. Although it is well established that astrocytes are important for the formation and maintenance of synaptic contacts, sense neuronal activity and actively participate in homeostatic scaling, it is unclear if the astroglial proteome is as dynamic as the neuronal. In recent years neurotrophins have emerged as important modulators of synaptogenesis and synaptic plasticity influencing both neurons and astrocytes. Therefore, I herein aim to explore the neuron-astroglia relationship in the context of neurotrophin-induced synaptic plasticity by performing cell-type specific proteomic profiling in astroglial-neuronal co-cultures based on the recently developed technique BONCAT. In addition, the proposed glial proteome dynamics shall be examined by visualization of the contact sites between neurons and astrocytes in the co-culture system. This work will deepen our understanding of the molecular and systemic aspects of the neuron-glia partnership.

Quelle:

<https://gepris.dfg.de/gepris/projekt/82265935?language=en>