

## Molecular Analysis of AMPA Receptor Signaling in NG2 Glial Cells

**Speaker:**

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**Project description:**

NG2 glial cells comprise a discrete population of CNS macroglia that receives synaptic input from neurons. The physiological significance of this neuro-glial transmission remains elusive. Here, we hypothesize that fast excitatory synaptic signaling in NG2 cells, mediated by glutamate receptors of the AMPA subtype (AMPA receptors), serves as a critical determinant of the proliferation of NG2 cells and their putatively heterogeneous lineage progression into oligodendrocytes or other cell types. Employing an unbiased proteomic approach, we propose to analyze and functionally characterize the molecular design of AMPAR signaling in native NG2 cells with respect to their developmental stage and their localization in brain. In the next step, identified NG2 cell-specific AMPAR complex compositions, which define the trafficking and gating properties of the receptors, will be disturbed in situ to delineate their functional role in neuro-glial communication. Results are expected to be key to understand the relevance of glutamatergic signaling in NG2 cell biology.

Quelle:

<https://gepris.dfg.de/gepris/projekt/254940540>