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Regulation of Glycine Neurotransmission by the Glial Glycine Transporter 1.

Speaker:

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Project description:

Neurotransmitter transporters are crucial for the rapid termination of synaptic transmission and constitute important targets of different widely prescribed drugs. The glial glycine transporter 1 (GlyT1) is thought to have important roles in the regulation of both inhibitory glycinergic and excitatory N-methyl-D-aspartate (NMDA) receptor-mediated neurotransmission. In addition, it constitutes an important target in medication development for schizophrenia. Knockout of the GlyT1 gene causes early postnatal lethality in mice due to over-inhibition of respiratory rhythmogenesis. Here, we propose to study the functions of GlyT1 in the adult CNS by using mouse lines which either contain only a single active GlyT1 allele or express increased levels of the transporter in glial cells, due to Cre/lox driven activation of a silent GlyT1 transgene. Biochemical, immunocytochemical, electrophysiological and behavioural analyses of such mice will be used to disclose the specific roles of GlyT1 at inhibitory and excitatory synapses. In addition, the work proposed may help to generate animal models of schizophrenia.

Quelle:

<https://gepris.dfg.de/gepris/projekt/5430338>