

Glycine transporter 2

Cat.No. 272-0P; control protein, 100 µg protein (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg protein, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in TBS. Then aliquot and store at -20°C until use.
Immunogen	Recombinant protein corresponding to AA 1 to 229 from rat Glycine transporter2 (UniProt Id: P58295)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	272 003, 272 004, 272 011, 272 006
Remarks	This control peptide consists of the recombinant protein (aa 1 - 229 of rat GLYT2) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of protein needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Glycine is the major inhibitory neurotransmitter in the spinal cord and brainstem. Two differentially expressed glycine transporters, **GLYT 1** and **GLYT 2**, regulate the extracellular concentration of this neuroactive amino acid in the synaptic cleft. GLYT 1 is expressed in both neurons as well as in glia with high expression levels in the main olfactory bulb, cerebellum, brainstem and spinal cord and low expression in other brain regions. It has been hypothesized to regulate glycine levels in NMDA receptor-mediated neurotransmission. GLYT 2 shows an axonal localization and is mainly expressed in spinal cord, brain-stem and cerebellum.

Selected General References

- Loss of Glycine Transporter 1 Causes a Subtype of Glycine Encephalopathy with Arthrogryposis and Mildly Elevated Cerebrospinal Fluid Glycine.
Kurolap A, Armbruster A, Hershkovitz T, Hauf K, Mory A, Paperna T, Hannappel E, Tal G, Nijem Y, Sella E, Mahajnah M, et al. American journal of human genetics (2016) 99(5): 1172-1180.
- Molecular mechanisms of glycine transporter GlyT2 mutations in startle disease.
James VM, Gill JL, Topf M, Harvey RJ
Biological chemistry (2012) 393(4): 283-9.
- Gene knockout of glycine transporter 1: characterization of the behavioral phenotype.
Tsai G, Ralph-Williams RJ, Martina M, Bergeron R, Berger-Sweeney J, Dunham KS, Jiang Z, Caine SB, Coyle JT
Proceedings of the National Academy of Sciences of the United States of America (2004) 101(22): 8485-90.
- Inactivation of the glycine transporter 1 gene discloses vital role of glial glycine uptake in glycinergic inhibition.
Gomez J, Hülsmann S, Ohno K, Eulenburg V, Szöke K, Richter D, Betz H
Neuron (2003) 40(4): 785-96.
- Calcium- and syntaxin 1-mediated trafficking of the neuronal glycine transporter GLYT2.
Geerlings A, Núñez E, López-Corcuera B, Aragón C
The Journal of biological chemistry (2001) 276(20): 17584-90.
- The role of N-glycosylation in transport to the plasma membrane and sorting of the neuronal glycine transporter GLYT2.
Martínez-Maza R, Poyatos I, López-Corcuera B, Núñez E, Giménez C, Zafra F, Aragón C
The Journal of biological chemistry (2001) 276(3): 2168-73.
- Glycine transporters are differentially expressed among CNS cells.
Zafra F, Aragón C, Olivares L, Danbolt NC, Giménez C, Storm-Mathisen J
The Journal of neuroscience : the official journal of the Society for Neuroscience (1995) 15(5 Pt 2): 3952-69.
- Gene structure and glial expression of the glycine transporter GlyT1 in embryonic and adult rodents.
Adams RH, Sato K, Shimada S, Tohyama M, Püschel AW, Betz H
The Journal of neuroscience : the official journal of the Society for Neuroscience (1995) 15(3 Pt 2): 2524-32.
- Localization of glycine neurotransmitter transporter (GLYT2) reveals correlation with the distribution of glycine receptor.
Jursky F, Nelson N
Journal of neurochemistry (1995) 64(3): 1026-33.