

Glycine transporter1

Cat.No. 272 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) (see remarks) IP: not tested yet ICC: not tested yet IHC: 1 : 1000 up to 1 : 2000 IHC-P: 1 : 500 up to 1 : 1000
Immunogen	Recombinant protein corresponding to AA 649 to 692 from mouse Glycine transporter1 (UniProt Id: P28571)
Reactivity	Reacts with: rat (P28572), mouse (P28571). Other species not tested yet.
Remarks	WB: Glycine transporter 1 aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled samples.

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

Background

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 References for 272 103

GlyT1 Encephalopathy: Characterization of presumably disease causing GlyT1 mutations.
Hauf K, Barsch L, Bauer D, Buchert R, Armbruster A, Frauenfeld L, Grasshoff U, Eulenburg V
Neurochemistry International (2020) : 104813. . **WB, ICC; tested species: human**

Opposing effects of an atypical glycinergic and substance P transmission on interpeduncular nucleus plasticity.
Melani R, Von Itter R, Jing D, Koppensteiner P, Ninan I
Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology (2019) : . . **IHC; tested species: mouse**

Vigabatrin-Induced Retinal Functional Alterations and Second-Order Neuron Plasticity in C57BL/6J Mice.
Chan K, Hoon M, Pattnaik BR, Ver Hoeve JN, Wahlgren B, Gloe S, Williams J, Wetherbee B, Kiland JA, Vogel KR, Jansen E, et al.
Investigative ophthalmology & visual science (2020) 612: 17. . **IHC; tested species: mouse**

Selected General References

Loss of Glycine Transporter 1 Causes a Subtype of Glycine Encephalopathy with Arthrogyposis 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) 995: 1172-1180. .

Molecular mechanisms of glycine transporter GlyT2 mutations in startle disease.
James VM, Gill JL, Topf M, Harvey RJ
Biological chemistry (2012) 3934: 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) 10122: 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) 404: 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) 27620: 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) 2763: 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) 155 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) 153 Pt 2: 2524-32. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/272103> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.