

Glycine transporter2

Cat.No. 272 003; 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: yes ICC: yes IHC: 1 : 500 up to 1 : 1000 IHC-P: 1 : 500 up to 1 : 1000 Clarity: yes
Immunogen	Recombinant protein corresponding to residues near the amino-terminus of rat Glycine transporter2. (UniProt Id: P58295)
Reactivity	Reacts with: rat (P58295), mouse (Q761V0). Other species not tested yet.
Specificity	K.D. validated PubMed: 30881475
Matching control	272-0P
Remarks	WB: Glycine transporter 2 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 272 003

Hyper-formation of GABA and glycine co-releasing terminals in the mouse cerebellar nuclei after deprivation of GABAergic inputs from Purkinje cells.
Kobayashi S, Kim J, Yanagawa Y, Suzuki N, Saito H, Takayama C
Neuroscience (2019) : . . **IHC, EM; tested species: mouse**

Aging alters mechanisms underlying voluntary movements in spinal motor neurons of mice, primates, and humans.
Castro RW, Lopes MC, Settlage RE, Valdez G
JCI insight (2023) 89: . . **CLARITY; tested species: mouse**

Spinal Cord Glycine Transporter 2 Mediates Bilateral ST35 Acupoints Sensitization in Rats with Knee Osteoarthritis.
Bai F, Ma Y, Guo H, Li Y, Xu F, Zhang M, Dong H, Deng J, Xiong L
Evidence-based complementary and alternative medicine : eCAM (2019) 2019: 7493286. . **WB; KD verified; tested species: rat**

Sequential maturation of stimulus-specific adaptation in the mouse lemniscal auditory system.
Valerio P, Rechenmann J, Joshi S, De Franceschi G, Barkat TR
Science advances (2024) 101: eadi7624. . **IHC; tested species: mouse**

Kv3 channels contribute to the excitability of sub-populations of spinal cord neurons in lamina VII.
Mullen P, Pilati N, Large CH, Deuchars J, Deuchars S
eNeuro (2022) : . . **IHC; tested species: mouse**

Structural arrangement of auditory brainstem nuclei in the bats Phyllostomus discolor and Carollia perspicillata.
Pätz C, Console-Meyer L, Felmy F
The Journal of comparative neurology (2022) : . . **IHC**

In vivo reprogramming of NG2 glia enables adult neurogenesis and functional recovery following spinal cord injury.
Tai W, Wu W, Wang LL, Ni H, Chen C, Yang J, Zang T, Zou Y, Xu XM, Zhang CL
Cell stem cell (2021) 285: 923-937.e4. . **IHC; tested species: mouse**

CX3CR1 mutation alters synaptic and astrocytic protein expression, topographic gradients, and response latencies in the auditory brainstem.
Milinkeviciute G, Chokr SM, Castro EM, Cramer KS
The Journal of comparative neurology (2021) 52911: 3076-3097. . **IHC; tested species: mouse**

Arrangement of excitatory synaptic inputs on dendrites of the medial superior olive.
Callan AR, Heß M, Felmy F, Leibold C
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **IHC**

Slow NMDA-mediated excitation accelerates offset-response latencies generated via a post-inhibitory rebound mechanism.
Rajaram E, Kaltenbach C, Fischl MJ, Mrowka L, Alexandrova O, Grothe B, Hennig MH, Kopp-Scheinpflug C
eNeuro (2019) : . . **IHC; tested species: mouse**

Distinct Distribution Patterns of Potassium Channel Sub-Units in Somato-Dendritic Compartments of Neurons of the Medial Superior Olive.
Nabel AL, Callan AR, Gleiss SA, Kladisios N, Leibold C, Felmy F
Frontiers in cellular neuroscience (2019) 13: 38. . **IHC**

Access the online factsheet including applicable protocols at <https://sysy.com/product/272003> 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.