

## Glycine transporter2

Cat.No. 272 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O, then aliquot and store at -20°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	<b>WB:</b> 1 : 1000 (AP staining) (see remarks) <b>IP:</b> yes <b>ICC:</b> 1 : 500 up to 1 : 1000 <b>IHC:</b> 1 : 500 <b>IHC-P:</b> 1 : 500 <b>EM:</b> 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: <a href="https://pubmed.ncbi.nlm.nih.gov/30881475/">30881475</a>
Matching control	272-0P
Remarks	<b>WB:</b> 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&nbsp;1** and **GLYT&nbsp;2**, regulate the extracellular concentration of this neuroactive amino acid in the synaptic cleft. GLYT&nbsp;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&nbsp;2 shows an axonal localization and is mainly expressed in spinal cord, brain-stem and cerebellum.

### Selected References for 272 004

- Synaptic Targets of Glycinergic Neurons in Laminae I-III of the Spinal Dorsal Horn.  
Miranda CO, Hegedüs K, Kis G, Antal M  
International journal of molecular sciences (2023) 248: . . **IHC, EM; tested species: mouse**
- Development and Optimization of a Multilayer Rat Purkinje Neuron Culture.  
Uggerud IM, Kråkenes T, Hirai H, Vedeler CA, Schubert M  
Cerebellum (London, England) (2023) : . . **ICC; tested species: rat**
- 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. . **IHC-P; KD verified; tested species: rat**
- Multimodal sensory control of motor performance by glycinergic interneurons of the mouse spinal cord deep dorsal horn.  
Gradwell MA, Ozeri-Engelhard N, Eisdorfer JT, Laflamme OD, Gonzalez M, Upadhyay A, Medlock L, Shrier T, Patel KR, Aoki A, Gandhi M, et al.  
Neuron (2024) 1128: 1302-1327.e13. . **IHC; tested species: mouse**
- Characterization of three cholinergic inputs to the cochlear nucleus.  
Beebe NL, Herrera YN, Nofzt WA, Roberts MT, Schofield BR  
Journal of chemical neuroanatomy (2023) 131: 102284. . **IHC; tested species: mouse**
- Preclinical long-term safety of intraspinal transplantation of human dorsal spinal GABA neural progenitor cells.  
Zheng X, Liu Z, He Z, Xu J, Wang Y, Gong C, Zhang R, Zhang SC, Chen H, Wang W  
iScience (2023) 2611: 108306. . **IHC; tested species: rat**
- Group I metabotropic glutamate receptor-triggered temporally patterned action potential-dependent spontaneous synaptic transmission in mouse MNTB neurons.  
Wang H, Peng K, Curry RJ, Li D, Wang Y, Wang X, Lu Y  
Hearing research (2023) 435: 108822. . **IHC; tested species: mouse**
- Neurotransmitter phenotype and axonal projection patterns of VIP-expressing neurons in the inferior colliculus.  
Beebe NL, Silveira MA, Goyer D, Nofzt WA, Roberts MT, Schofield BR  
Journal of chemical neuroanatomy (2022) 126: 102189. . **IHC; tested species: mouse**
- Morphological and neurochemical characterization of glycinergic neurons in laminae I-IV of the mouse spinal dorsal horn.  
Miranda CO, Hegedüs K, Wildner H, Zeilhofer HU, Antal M  
The Journal of comparative neurology (2021) : . . **IHC; tested species: mouse**
- Cholinergic boutons are closely associated with excitatory cells and four subtypes of inhibitory cells in the inferior colliculus.  
Beebe NL, Schofield BR  
Journal of chemical neuroanatomy (2021) 116: 101998. . **IHC; tested species: mouse**
- 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**

Access the online factsheet including applicable protocols at <https://sysy.com/product/272004> 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.