SYSY Antibodies

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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_2O 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**: 1 : 500 **IHC**: 1 : 500 up to 1 : 1000 **IHC-P (FFPE)**: 1 : 500 up to 1 : 1000 **Clarity**: external data (see remarks)
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**: To avoid protein aggregation, do not heat samples for SDS-PAGE. **Clarity**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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 **gly**cine **t**ransporters, **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**

Impaired Presynaptic Function Contributes Significantly to the Pathology of Glycine Receptor Autoantibodies.
Wiessler AL, Zheng F, Werner C, Habib M, Tuzun E, Alzheimer C, Sommer C, Villmann C
Neurology(R) neuroimmunology & neuroinflammation (2025) 122: e200364. . **WB; tested species: mouse**

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**

Spinal microcircuits go through multiphasic homeostatic compensations in a mouse model of motoneuron degeneration.
Nascimento F, Özyurt MG, Halablab K, Bhumbra GS, Caron G, Bączyk M, Zytnicki D, Manuel M, Roselli F, Brownstone R, Beato M, et al.
Cell reports (2024) 4312: 115046. . **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**

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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.