SYSY Antibodies

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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_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**: not tested yet **ICC**: external data (see remarks) **IHC**: 1 : 1000 up to 1 : 2000 **IHC-P (FFPE)**: 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**: To avoid protein aggregation, do not heat samples for SDS-PAGE. **ICC**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols.

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 272 103

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 Arthrogryposis and Mildly Elevated Cerebrospinal Fluid Glycine.
Kurolap A et al. Am. J. Hum. Genet. (2016) PubMed:27773429

Molecular mechanisms of glycine transporter GlyT2 mutations in startle disease.
James VM et al. Biol. Chem. (2012) PubMed:22114948

Gene knockout of glycine transporter 1: characterization of the behavioral phenotype.
Tsai G et al. Proc. Natl. Acad. Sci. U.S.A. (2004) PubMed:15159536

Inactivation of the glycine transporter 1 gene discloses vital role of glial glycine uptake in glycinergic inhibition.
Gomeza J et al. Neuron (2003) PubMed:14622582

Calcium- and syntaxin 1-mediated trafficking of the neuronal glycine transporter GLYT2.
Geerlings A et al. J. Biol. Chem. (2001) PubMed:11278707

The role of N-glycosylation in transport to the plasma membrane and sorting of the neuronal glycine transporter GLYT2.
Martínez-Maza R et al. J. Biol. Chem. (2001) PubMed:11036075

Glycine transporters are differentially expressed among CNS cells.
Zafra F et al. J. Neurosci. (1995) PubMed:7751957

Gene structure and glial expression of the glycine transporter GlyT1 in embryonic and adult rodents.
Adams RH et al. J. Neurosci. (1995) PubMed:7891186

Localization of glycine neurotransmitter transporter (GLYT2) reveals correlation with the distribution of glycine receptor.
Jursky F et al. J. Neurochem. (1995) PubMed:7861131

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 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.