SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

GABA transporter3 (GAT3)

Cat.No. 274 304; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, 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	**WB**: 1 : 1000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500 **ExM**: external data (see remarks)
Immunogen	Synthetic peptide corresponding to AA 612 to 627 from mouse GABA transporter3 (UniProt Id: P31650)
Reactivity	Reacts with: rat (P31647), mouse (P31650). Other species not tested yet.
Specificity	K.O. validated PubMed: 41025215
Matching control	274-3P
Remarks	**ExM**: 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

γ-aminobutyric acid (GABA) is a major inhibitory neurotransmitter. After the release of GABA from synaptic vesicles into the synaptic cleft during neurotransmission, **GABA transporters** (GATs) remove extracellular GABA by reuptake into the presynaptic terminal.
Three GABA transporters are described so far of which only GAT 1 and GAT 3 are expressed in the brain.

Selected References for 274 304

Astrocytic modulation of population encoding in mouse visual cortex via GABA transporter 3 revealed by multiplexed CRISPR/Cas9 gene editing.
Park J, Sipe GO, Tang X, Ojha P, Fernandes G, Leow YN, Zhang C, Osako Y, Natesan A, Drummond GT, Jaenisch R, et al.
eLife (2025) 14: . . **WB, IHC; KO verified; tested species: mouse**

Structural Heterogeneity of the GABAergic Tripartite Synapse.
Brunskine C, Passlick S, Henneberger C
Cells (2022) 1119: . . **EXM; tested species: mouse**

Neurons Induce Tiled Astrocytes with Branches That Avoid Each Other.
Hayashi MK, Sato K, Sekino Y
International journal of molecular sciences (2022) 238: . . **ICC; tested species: rat**

Astrocyte morphological remodeling regulates consciousness state transitions induced by inhaled general anesthesia.
Zhou B, Li Q, Su M, Liao P, Luo Y, Luo R, Yu Y, Luo M, Lei F, Li X, Jiao J, et al.
Molecular psychiatry (2025) 309: 4006-4022. . **IHC; tested species: mouse**

Extracellular Vesicles from Mesenchymal Stem Cells Reverse Neuroinflammation and Restore Motor Coordination in Hyperammonemic Rats.
Izquierdo-Altarejos P, Martínez-García M, Atienza-Pérez I, Hernández A, Moreno-Manzano V, Llansola M, Felipo V
Journal of neuroimmune pharmacology : the official journal of the Society on NeuroImmune Pharmacology (2024) 191: 52. . **WB; tested species: rat**

Light microscopic and heterogeneity analysis of astrocytes in the common marmoset brain.
Muñoz Y, Cuevas-Pacheco F, Quesseveur G, Murai KK
Journal of neuroscience research (2021) : . . **IHC; tested species: marmoset**

Doublecortin-like expressing astrocytes of the suprachiasmatic nucleus are implicated in the biosynthesis of vasopressin and influences circadian rhythms.
Coomans C, Saaltink DJ, Deboer T, Tersteeg M, Lanooij S, Schneider AF, Mulder A, van Minnen J, Jost C, Koster AJ, Vreugdenhil E, et al.
Glia (2021) 6911: 2752-2766. . **IHC; tested species: mouse**

Extracellular Vesicles from Hyperammonemic Rats Induce Neuroinflammation and Motor Incoordination in Control Rats.
Izquierdo-Altarejos P, Cabrera-Pastor A, Gonzalez-King H, Montoliu C, Felipo V
Cells (2020) 93: . . **WB; tested species: rat**

Astrocytes detect and upregulate transmission at inhibitory synapses of somatostatin interneurons onto pyramidal cells.
Matos M, Bosson A, Riebe I, Reynell C, Vallée J, Laplante I, Panatier A, Robitaille R, Lacaille JC
Nature communications (2018) 91: 4254. . **IHC; tested species: mouse**

Olig2-Lineage Astrocytes: A Distinct Subtype of Astrocytes That Differs from GFAP Astrocytes.
Tatsumi K, Isonishi A, Yamasaki M, Kawabe Y, Morita-Takemura S, Nakahara K, Terada Y, Shinjo T, Okuda H, Tanaka T, Wanaka A, et al.
Frontiers in neuroanatomy (2018) 12: 8. . **IHC; tested species: mouse**

Selected General References

Substrate-mediated regulation of gamma-aminobutyric acid transporter 1 in rat brain.
Hu J et al. Neuropharmacology (2008) PubMed:17991494

Access the online factsheet including applicable protocols at https://sysy.com/product/274304 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.