SYSY Antibodies

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VGAT (SLC32A1) cytoplasmic domain

Cat.No. 131 308; Recombinant Guinea pig antibody, 50 µg recombinant IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg purified recombinant IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in TBS. 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) **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 400
Clone	Gp117G4
Subtype	IgG2 (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the amino terminus of rat VGAT (UniProt Id: O35458)
Reactivity	Reacts with: human (Q9H598), rat (O35458), mouse (O35633), Guinea pig, ape. Other species not tested yet. Predicted to cross-react with cat due to high sequence homology.
Specificity	K.O. validated
Matching control	131-0P
Remarks	This antibody is a chimeric antibody based on the well known monoclonal mouse antibody 117G4. The constant regions of the heavy and light chains have been replaced by Guinea pig specific sequences. Therefore, the antibody can be used with standard anti-Guinea pig secondary reagents. The antibody has been expressed in mammalian cells. **WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

The **v**esicular **GA**BA **t**ransporter **VGAT** is responsible for uptake and storage of GABA and glycine by synaptic vesicles in the central nervous system. For this reason it is frequently referred to as the **v**esicular **i**nhibitory **a**mino**a**cid **t**ransporter **VIAAT**. It is different from the plasma membrane transporters in that it is driven by a proton electrochemical gradient across the vesicle membrane. So far, only one isoform is known. VGAT is currently the best marker for inhibitory nerve terminals.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 131 308

The Alzheimer susceptibility gene BIN1 induces isoform-dependent neurotoxicity through early endosome defects.
Lambert E, Saha O, Soares Landeira B, Melo de Farias AR, Hermant X, Carrier A, Pelletier A, Gadaut J, Davoine L, Dupont C, Amouyel P, et al.
Acta neuropathologica communications (2022) 101: 4. . **ICC, IHC; tested species: rat**

A DARPin-based molecular toolset to probe gephyrin and inhibitory synapse biology.
Campbell BFN, Dittmann A, Dreier B, Plückthun A, Tyagarajan SK
eLife (2022) 11: . . **ICC, IHC; tested species: rat**

The complement C3-microglial axis in depression of Parkinson's disease: from mechanism to therapeutic intervention.
Yin Q, Ding M, Tang Y, Qi Y, Qin Y, Jin H, Li Y, Bao J, Ma S, Li Y, Ding H, et al.
EBioMedicine (2026) 129: 106325. . **IHC; tested species: mouse**

Splice Type-Specific Effects of Gαo Subunits on Cerebellar Anatomy and Synapse Formation.
Höltje M, Wolkowicz A, Ahnert-Hilger G
Journal of neurochemistry (2026) 1707: e70512. . **IHC; tested species: mouse**

Repetitive concussions promote microglia-mediated engulfment of presynaptic excitatory input associated with cognitive dysfunction.
Chahin M, Mutschler J, Dzhuleva SP, Dieterle C, Jimenez LR, Bhattarai SR, Van Steenbergen V, Bareyre FM
Communications biology (2025) 81: 335. . **IHC; tested species: mouse**

Astrocyte specification in the mouse septum is shaped by both developmental origin and local signals.
Xie Y, Reid CM, Turrero García M, Dale-Huang F, Granados AA, Lu Y, Li J, Hanson SM, Mancia Leon WR, Liu J, Adam M, et al.
Nature neuroscience (2025) 288: 1676-1687. . **IHC; tested species: mouse**

Anatomy of superior olivary complex and lateral lemniscus in Etruscan shrew.
Zacher AC, Felmy F
Scientific reports (2024) 141: 14734. . **IHC**

Facial neuromuscular junctions and brainstem nuclei are the target of tetanus neurotoxin in cephalic tetanus.
Fabris F, Varani S, Tonellato M, Matak I, Šoštarić P, Meglić P, Caleo M, Megighian A, Rossetto O, Montecucco C, Pirazzini M, et al.
JCI insight (2023) 811: . . **IHC; tested species: mouse,rat**

The synaptic scaffold protein MPP2 interacts with GABAA receptors at the periphery of the postsynaptic density of glutamatergic synapses.
Schmerl B, Gimber N, Kuropka B, Stumpf A, Rentsch J, Kunde SA, von Sivers J, Ewers H, Schmitz D, Freund C, Schmoranzer J, et al.
PLoS biology (2022) 203: e3001503. . **ICC; tested species: rat**

MAD2B promotes podocyte injury through regulating Numb-dependent Notch 1 pathway in diabetic nephropathy.
Li MR, Lei CT, Tang H, Yin XJ, Hao Z, Qiu Y, Xie YR, Zeng JY, Su H, Zhang C
International journal of biological sciences (2022) 185: 1896-1911. . **ICC; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/131308 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.