

VGLUT3 (SLC17A8)

Cat.No. 135 211; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 µl H ₂ O 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: not tested yet IHC: 1 : 500 IHC-P (FFPE): 1 : 100 up to 1 : 500
Clone	57A8
Subtype	IgG2a (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse VGLUT 3 (UniProt Id: Q8BFU8)
Reactivity	Reacts with: rat (Q7TSF2), mouse (Q8BFU8). Other species not tested yet.
Remarks	WB: To avoid protein aggregation, do not heat samples for SDS-PAGE. Due to the low abundance of this protein in the brain, immunoblotting is difficult.

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

Background

The vesicular glutamate transporter **3 VGLUT 3** is closely related to VGLUT 1 and VGLUT 2 by sequence similarity. However, VGLUT 3 defines a new distinct glutamatergic system in brain which is strictly separated from VGLUT 1 and VGLUT 2 synapses. Co-localization with the acetylcholine transporter VACHT and the monoamine transporter 2 VMAT 2 has been observed.

Selected References for 135 211

Proteomic analysis reveals the composition of glutamatergic organelles of auditory inner hair cell. Cepeda AP, Ninov M, Neef J, Parfentev I, Kusch K, Reisinger E, Jahn R, Moser T, Urlaub H. *Molecular & cellular proteomics* : MCP (2023) : 100704. . **WB, IP; tested species: mouse**

Synaptic Organization of VGLUT3 Expressing Low-Threshold Mechanosensitive C Fiber Terminals in the Rodent Spinal Cord. Larsson M, Broman J. *eNeuro* () 61: . . **IHC, EM; tested species: rat**

Colocalization of different neurotransmitter transporters on synaptic vesicles is sparse except for VGLUT1 and ZnT3. Upmanyu N, Jin J, Emde HV, Ganzella M, Bösch L, Malviya VN, Zhuleku E, Politi AZ, Ninov M, Silbern I, Leutenegger M, et al. *Neuron* (2022) : . . **UPTAKE; tested species: rat**

Regulation of perisomatic synapses from cholecystokinin basket interneurons through NrCAM and Ankyrin B. Oldre EN, Webb BD, Sperringer JE, Maness PF. *Current research in neurobiology* (2025) 8: 100150. . **IHC; tested species: mouse**

Regenerated hair cells in the neonatal cochlea are innervated and the majority co-express markers of both inner and outer hair cells.

Heuermann ML, Matos S, Hamilton D, Cox BC. *Frontiers in cellular neuroscience* (2022) 16: 841864. . **IHC; tested species: mouse**

Early-life sevoflurane exposure impairs fear memory by suppressing extracellular signal-regulated kinase signaling in the bed nucleus of stria terminalis GABAergic neurons.

Zhao XP, Zhong F, Luo RY, Zhang YL, Luo C, Li H, Dai RP. *Neuropharmacology* (2021) 191: 108584. . **IHC; tested species: mouse**

Selected General References

Expression of vesicular glutamate transporters in rat lumbar spinal cord, with a note on dorsal root ganglia. Landry M et al. *J. Comp. Neurol.* (2004) PubMed:14681932

Characterization of an amacrine cell type of the mammalian retina immunoreactive for vesicular glutamate transporter 3. Haverkamp S et al. *J. Comp. Neurol.* (2004) PubMed:14648683

Complementary distribution of type 1 cannabinoid receptors and vesicular glutamate transporter 3 in basal forebrain suggests input-specific retrograde signalling by cholinergic neurons. Harkany T et al. *Eur. J. Neurosci.* (2003) PubMed:14622230

Cellular localization of three vesicular glutamate transporter mRNAs and proteins in rat spinal cord and dorsal root ganglia. Oliveira AL et al. *Synapse* (2003) PubMed:12923814

The identification of vesicular glutamate transporter 3 suggests novel modes of signaling by glutamate. Fremeau RT et al. *Proc. Natl. Acad. Sci. U.S.A.* (2002) PubMed:12388773

Molecular cloning and functional identification of mouse vesicular glutamate transporter 3 and its expression in subsets of novel excitatory neurons. Schäfer MK et al. *J. Biol. Chem.* (2002) PubMed:12384506

A third vesicular glutamate transporter expressed by cholinergic and serotonergic neurons. Gras C et al. *J. Neurosci.* (2002) PubMed:12097496

Access the online factsheet including applicable protocols at <https://sysy.com/product/135211> 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.