SYSY Antibodies

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VGLUT3

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_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**: not tested yet **IHC**: 1 : 500 **IHC-P**: 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**: 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 **v**esicular **glu**tamate **t**ransporter **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 seperated 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, Bösche L, Malviya VN, Zhuleku E, Politi AZ, Ninov M, Silbern I, Leutenegger M, et al.
Neuron (2022) : . . **UPTAKE; tested species: rat**

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 serotoninergic 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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.