SYSY Antibodies

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VGLUT3 (SLC17A8)

Cat.No. 135 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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 up to 1 : 5000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: external data (see remarks) **IHC**: 1 : 100 up to 1 : 1000 **IHC-P**: 1 : 200 **iDISCO**: external data (see remarks) **FACS**: yes
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of mouse VGLUT 3 (UniProt Id: Q8BFU8)
Reactivity	Reacts with: rat (Q7TSF2), mouse (Q8BFU8). No signal: human. Other species not tested yet.
Specificity	K.O. validated PubMed: 21297271
Matching control	135-2P
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. **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. **iDISCO**: 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

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 135 203

A hybridization-chain-reaction-based method for amplifying immunosignals.
Lin R, Feng Q, Li P, Zhou P, Wang R, Liu Z, Wang Z, Qi X, Tang N, Shao F, Luo M, et al.
Nature methods (2018) 154: 275-278. . **IHC; tested species: mouse**

Transient focal cerebral ischemia significantly alters not only EAATs but also VGLUTs expression in rats: relevance of changes in reactive astroglia.
Sánchez-Mendoza E, Burguete MC, Castelló-Ruiz M, González MP, Roncero C, Salom JB, Arce C, Cañadas S, Torregrosa G, Alborch E, Oset-Gasque MJ, et al.
Journal of neurochemistry (2010) 1135: 1343-55. . **IHC, WB; tested species: rat**

Vesicular glutamate transporters play a role in neuronal differentiation of cultured SVZ-derived neural precursor cells.
Sánchez-Mendoza EH, Bellver-Landete V, Arce C, Doeppner TR, Hermann DM, Oset-Gasque MJ
PloS one (2017) 125: e0177069. . **WB, ICC**

The human VGLUT3-pT8I mutation elicits uneven striatal DA signaling, food or drug maladaptive consumption in male mice.
Favier M, Martin Garcia E, Icick R, de Almeida C, Jehl J, Desplanque M, Zimmermann J, Henrion A, Mansouri-Guilani N, Mounier C, Ribeiro S, et al.
Nature communications (2024) 151: 5691. . **ICC, IHC; tested species: mouse**

Vesicular Glutamate Transporters (SLCA17 A6, 7, 8) Control Synaptic Phosphate Levels.
Cheret C, Ganzella M, Preobraschenski J, Jahn R, Ahnert-Hilger G
Cell reports (2021) 342: 108623. . **WB, ICC; tested species: human,mouse**

Lack of evidence for vesicular glutamate transporter expression in mouse astrocytes.
Li D, Hérault K, Silm K, Evrard A, Wojcik S, Oheim M, Herzog E, Ropert N
The Journal of neuroscience : the official journal of the Society for Neuroscience (2013) 3310: 4434-55. . **WB, IHC; KO verified; tested species: mouse**

Region- and age-specific changes in glutamate transport in the AβPP23 mouse model for Alzheimer's disease.
Schallier A, Smolders I, Van Dam D, Loyens E, De Deyn PP, Michotte A, Michotte Y, Massie A
Journal of Alzheimer's disease : JAD (2011) 242: 287-300. . **WB, IHC; KO verified; tested species: mouse**

Isotropic, aberration-corrected light sheet microscopy for rapid high-resolution imaging of cleared tissue.
Aakhte M, Müller GF, Roos L, Li J, Göpel T, Weiss KR, Diniz AM, Wenzel J, Schwaninger M, Moser T, Huisken J, et al.
Nature biotechnology (2025) : . . **IDISCO; tested species: mouse**

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; 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**

Synaptic vesicle-omics in mice captures signatures of aging and synucleinopathy.
Gao V, Chlebowicz J, Gaskin K, Briano JA, Komer LE, Pineda A, Jhalani S, Ahmad S, Uwaifo E, Black LS, Haller JE, et al.
Nature communications (2025) 161: 4079. . **WB; tested species: mouse**

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**

Access the online factsheet including applicable protocols at https://sysy.com/product/135203 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.