SYSY Antibodies

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VGLUT3

Cat.No. 135 204; 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) (see remarks) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 **IHC-P**: not tested yet
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse VGLUT3 (UniProt Id: Q8BFU8)
Reactivity	Reacts with: mouse (Q8BFU8), rat (Q7TSF2). Other species not tested yet.
Specificity	K.O. validated PubMed: 28559797
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.

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 135 204

Regulation of the Hippocampal Network by VGLUT3-Positive CCK- GABAergic Basket Cells.
Fasano C, Rocchetti J, Pietrajtis K, Zander JF, Manseau F, Sakae DY, Marcus-Sells M, Ramet L, Morel LJ, Carrel D, Dumas S, et al.
Frontiers in cellular neuroscience (2017) 11: 140. . **WB, IHC; KO verified; tested species: mouse**

Oxidative Stress Plays an Important Role in Glutamatergic Excitotoxicity-Induced Cochlear Synaptopathy: Implication for Therapeutic Molecules Screening.
Saidia AR, François F, Casas F, Mechaly I, Venteo S, Veechi JT, Ruel J, Puel JL, Wang J
Antioxidants (Basel, Switzerland) (2024) 132: . . **ICC; tested species: mouse**

Increased c-Fos immunoreactivity in anxiety-related brain regions following paroxetine discontinuation.
Collins HM, Gullino LS, Fuller C, Pinacho R, Bannerman DM, Sharp T
Neuropharmacology (2025) : 110541. . **IHC; tested species: mouse**

Retinal ganglion cell-derived semaphorin 6A segregates starburst amacrine cell dendritic scaffolds to organize the inner retina.
James RE, Hamilton NR, Huffman LN, Neckles VN, Pasterkamp RJ, Goff LA, Kolodkin AL
Development (Cambridge, England) (2024) : . . **IHC; tested species: mouse**

Adaptation to photoperiod via dynamic neurotransmitter segregation.
Maddaloni G, Chang YJ, Senft RA, Dymecki SM
Nature (2024) 6328023: 147-156. . **IHC; tested species: mouse**

Early-Onset Hearing Loss in Mouse Models of Alzheimer's Disease and Increased DNA Damage in the Cochlea.
Park JH, Sahbaz BD, Pekhale K, Chu X, Okur MN, Grati M, Isgrig K, Chien W, Chrysostomou E, Sullivan L, Croteau DL, et al.
Aging Biology (2024) 1: . . **IHC; tested species: mouse**

Parallel streams of raphe VGLUT3-positive inputs target the dorsal and ventral hippocampus in each hemisphere.
Fortin-Houde J, Henderson F, Dumas S, Ducharme G, Amilhon B
The Journal of comparative neurology (2023) 5317: 702-719. . **IHC; tested species: mouse**

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. . **IHC; tested species: mouse**

The complement inhibitor CD59 is required for GABAergic synaptic transmission in the dentate gyrus.
Wen L, Yang X, Wu Z, Fu S, Zhan Y, Chen Z, Bi D, Shen Y
Cell reports (2023) 424: 112349. . **IHC; tested species: mouse**

A disease-associated mutation in thyroid hormone receptor α1 causes hearing loss and sensory hair cell patterning defects in mice.
Affortit C, Blanc F, Nasr J, Ceccato JC, Markossian S, Guyot R, Puel JL, Flamant F, Wang J
Science signaling (2022) 15738: eabj4583. . **IHC; tested species: mouse**

Sucrose Consumption Alters Serotonin/Glutamate Co-localisation Within the Prefrontal Cortex and Hippocampus of Mice.
Beecher K, Wang J, Jacques A, Chaaya N, Chehrehasa F, Belmer A, Bartlett SE
Frontiers in molecular neuroscience (2021) 14: 678267. . **IHC; tested species: mouse**

A Single Cisterna Magna Injection of AAV Leads to Binaural Transduction in Mice.
Blanc F, Bemelmans AP, Affortit C, Joséphine C, Puel JL, Mondain M, Wang J
Frontiers in cell and developmental biology (2021) 9: 783504. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/135204 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.