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VGLUT2 (SLC17A6)

Cat.No. 135 416; Polyclonal chicken antibody, 50 µg specific antibody (lyophilized)

Data Sheet

| Reconstitution/ Storage | 50 μg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide was added for stabilization. For reconstitution add 50 μ l 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) IP: not tested yet ICC: 1: 5000 IHC: 1: 500 IHC-P: 1: 500 |
| Immunogen | Synthetic peptide corresponding to residues near the carboxy terminus of rat VGLUT2 (UniProt Id: Q9JI12) |
| Reactivity | Reacts with: rat (Q62634), mouse (Q3TXX4). Other species not tested yet. |
| Matching control | 135-4P |
| Remarks | This antibody is highly recommended as a marker for glutamatergic nerve terminals. 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 vesicular glutamate transporter 2 VGLUT2, also referred to as DNPI and SLC17A6, has a more restricted expression than the related VGLUT1. Like VGLUT1, it is both necessary and sufficient for uptake and storage of glutamate and thus comprises the sole determinant for a glutamatergic phenotype. Both VGLUTs are different from the plasma membrane transporters in that they are driven by a proton electrochemical gradient across the vesicle membrane.

VGLUT1 and VGLUT2 show complementary expression patterns. Together, they are currently the best markers for glutamatergic nerve terminals and glutamatergic synapses.

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

Selected References for 135 416

Circuit dissection of the role of somatostatin in itch and pain.

Huang J, Polgár E, Solinski HJ, Mishra SK, Tseng PY, Iwagaki N, Boyle KA, Dickie AC, Kriegbaum MC, Wildner H, Zeilhofer HU, et al.

Nature neuroscience (2018):.. IHC; tested species: mouse

Selective regulation of corticostriatal synapses by astrocytic phagocytosis.

Kim JY, Kim H, Chung WS, Park H

Nature communications (2025) 161: 2504. . IHC; tested species: mouse

Behavioral decline in Shank3\(\Delta\)ex4-22 mice during early adulthood parallels cerebellar granule cell glutamatergic synaptic changes.

Kshetri R, Beavers JO, Hyde R, Ewa R, Schwertman A, Porcayo S, Richardson BD

Molecular autism (2024) 151: 52. . IHC; tested species: mouse

Synaptic circuits involving gastrin-releasing peptide receptor-expressing neurons in the dorsal horn of the mouse spinal cord. Quillet R, Gutierrez-Mecinas M, Polgár E, Dickie AC, Boyle KA, Watanabe M, Todd AJ

Frontiers in molecular neuroscience (2023) 16: 1294994. . IHC; tested species: mouse

Glutamate delta 1 receptor regulates autophagy mechanisms and affects excitatory synapse maturation in the somatosensory cortex.

Gawande DY, S Narasimhan KK, Bhatt JM, Pavuluri R, Kesherwani V, Suryavanshi PS, Shelkar GP, Dravid SM

Pharmacological research (2022) 178: 106144. . IHC; tested species: mouse

Calretinin-Expressing Synapses Show Improved Synaptic Efficacy with Reduced Asynchronous Release during High-Rate Activity. Zhang C, Wang M, Lin S, Xie R

The Journal of neuroscience: the official journal of the Society for Neuroscience (2022) 4213: 2729-2742. . **IHC; tested species:** mouse

Local targets of T-stellate cells in the ventral cochlear nucleus.

Lin L, Campbell J, Oertel D, Smith PH

The Journal of comparative neurology (2022) :.. IHC; tested species: mouse

Antibodies Against the Gastrin-releasing Peptide Precursor Pro-Gastrin-releasing Peptide Reveal Its Expression in the Mouse Spinal Dorsal Horn.

Gutierrez-Mecinas M. Kókai É. Polgár E. Ouillet R. Titterton HF. Weir GA. Watanabe M. Todd AJ

Neuroscience (2022) 510: 60-71.. IHC; tested species: mouse

EASI-FISH for thick tissue defines lateral hypothalamus spatio-molecular organization.

Wang Y, Eddison M, Fleishman G, Weigert M, Xu S, Wang T, Rokicki K, Goina C, Henry FE, Lemire AL, Schmidt U, et al. Cell (2021):..IHC; tested species: mouse

Access the online factsheet including applicable protocols at https://sysy.com/product/135416 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 freezedried) 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 freezethaw cycles.
- Please refer to our tips and hints for subsequent storage of reconstituted antibodies and control peptides and proteins.