

VGLUT2 (SLC17A6)

Cat.No. 135 404; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H ₂ O, 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: yes ICC: 1 : 200 up to 1 : 500 IHC: 1 : 200 up to 1 : 500 IHC-P: 1 : 500 iDISCO: external data (see remarks) EM: external data (see remarks)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of rat VGLUT2 (UniProt Id: Q9J112)
Reactivity	Reacts with: rat (Q9J112), mouse (Q8BLE7). Other species not tested yet.
Specificity	K.O. validated PubMed: 25357191
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. iDISCO: This antibody has been successfully applied and published for this method by customers (see application-specific references). EM: 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 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 135 404

Hevin-calcyon interaction promotes synaptic reorganization after brain injury.
Kim JH, Jung HG, Kim A, Shim HS, Hyeon SJ, Lee YS, Han J, Jung JH, Lee J, Ryu H, Park JY, et al. Cell death and differentiation (2021) 289: 2571-2588. . **WB, ICC, IHC; tested species: mouse**

Structural and functional connections between the median and the ventrolateral preoptic nucleus.
Walter A, van der Spek L, Hardy E, Bemelmans AP, Rouach N, Rancillac A Brain structure & function (2019) 2249: 3045-3057. . **IHC, iDISCO; tested species: mouse**

Vesicular Glutamate Transporters (SLC17A6, 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**

An essential role of acetylcholine-glutamate synergy at habenular synapses in nicotine dependence.
Frahm S, Antolin-Fontes B, Görllich A, Zander JF, Ahnert-Hilger G, Ibáñez-Tallón I eLife (2015) 4: e11396. . **WB, IHC**

Splice-specific roles of glycine receptor alpha3 in the hippocampus.
Eichler SA, Förster B, Smolinsky B, Jüttner R, Lehmann TN, Fähring M, Schwarz G, Legendre P, Meier JC The European journal of neuroscience (2009) 306: 1077-91. . **ICC, IHC; tested species: mouse**

Cadherins mediate cocaine-induced synaptic plasticity and behavioral conditioning.
Mills F, Globa AK, Liu S, Cowan CM, Mobasser M, Phillips AG, Borgland SL, Bamji SX Nature neuroscience (2017) 204: 540-549. . **EM; tested species: mouse**

Ngn2 and Isl1-mediated astrocyte-to-neuron conversion in vivo promotes functional recovery after spinal cord injury.
Zhou M, Zhang H, Sui M, Cao Y, Tao X, Zhou M, Leng C, Huang M, Yin K, Wei X, Zheng Y, et al. Cell reports. Medicine (2025) : 102462. . **IHC; tested species: mouse**

Lymphoid gene expression supports neuroprotective microglia function.
Ayata P, Crowley JM, Challman MF, Sahasrabudhe V, Gratuze M, Werneburg S, Ribeiro D, Hays EC, Durán-Laforet V, Faust TE, Hwang P, et al. Nature (2025) : . . **IHC; tested species: mouse**

Role of mTORC1 signaling in postnatal microglia activation preceding neurodegeneration in a mouse model for Niemann-Pick disease Type C.
Murray CE, Betancourt-Trompa DS, Martinez MS, Carson JM, Walsh LJ, Remillard WC, Fordyce KB, Reddy R, Soto I PLoS one (2025) 209: e0330437. . **IHC; tested species: mouse**

A neurodegenerative cellular stress response linked to dark microglia and toxic lipid secretion.
Flury A, Aljayousi L, Park HJ, Khakpour M, Mechler J, Aziz S, McGrath JD, Deme P, Sandberg C, González Ibáñez F, Braniff O, et al. Neuron (2025) 1134: 554-571.e14. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at <https://sysy.com/product/135404> 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 at 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.