SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

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 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**: not tested yet **ICC**: 1 : 5000 **IHC**: 1 : 500 **IHC-P (FFPE)**: 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 **v**esicular **glu**tamate **t**ransporter **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**

Macrophage-glia interactions regulate immune damage to enteric neurons during West Nile virus infection.
Janova H, Zhao FR, Akgul A, Schatz M, Alligood DM, Alvarado DM, Thackray LB, Stappenbeck TS, Diamond MS
Proceedings of the National Academy of Sciences of the United States of America (2026) 12311: e2537058123. . **IHC; tested species: mouse**

Microglial CX3CR1 signaling mediates synaptic pruning in degenerative cervical myelopathy.
Zhou CM, Asgarihafshejani A, Hong J, Brockie ST, Movahed M, Sadat S, Kouhzaei S, Fehlings MG
Neurobiology of disease (2026) 228: 107567. . **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**

The effects of amyloidosis and aging on glutamatergic and GABAergic synapses, and interneurons in the barrel cortex and non-neocortical brain regions.
Qu T
Frontiers in neuroanatomy (2025) 19: 1526962. . **IHC; tested species: mouse**

Identification of a neural basis for energy expenditure in the mouse arcuate hypothalamus.
Wang T, Han S, Wang Y, Li Y, Li Y, Xing Z, Zhang S, Xia Y, Zhu F, Chen ZH, Li YZ, et al.
Neuron (2025) 11322: 3813-3833.e9. . **IHC; tested species: mouse**

Behavioral decline in Shank3Δex4-22 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**

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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.