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

VGLUT1 (SLC17A7)

Cat.No. 135 307; Polyclonal goat antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 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**: yes **ICC**: 1 : 1000 up to 1 : 10000 **IHC**: 1 : 300 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of rat VGLUT 1 (UniProt Id: Q62634)
Reactivity	Reacts with: rat (Q62634), mouse (Q3TXX4). Other species not tested yet.
Specificity	K.O. validated
Matching control	135-3P
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 **1 VGLUT1**, also referred to as **BNPI** and **SLC17A7**, was originally identified as a brain specific phosphate transporter. Like the related VGLUT2, VGLUT1 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.

Selected References for 135 307

The ZIP3 zinc transporter is localized to mossy fiber terminals and is required for kainate-induced degeneration of CA3 neurons.
Bogdanovic M, Asraf H, Gottesman N, Sekler I, Aizenman E, Hershfinkel M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2022) : . . **IHC-P; tested species: mouse**

Puncta of neuronal nitric oxide synthase (nNOS) mediate NMDA-receptor signalling in the auditory midbrain.
Olthof BM, Gartside SE, Rees A
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . . **IHC**

PSD-95 promotes the stabilization of young synaptic contacts.
Taft CE, Turrigiano GG
Philosophical transactions of the Royal Society of London. Series B, Biological sciences (2014) 3691633: 20130134. . **ICC; tested species: rat**

Adult-Onset Deletion of CDKL5 in Forebrain Glutamatergic Neurons Impairs Synaptic Integrity and Behavior in Mice.
Mottolese N, Iannibelli F, Candini G, Trebbi F, Loi M, Bove AM, Medici G, Xiong ZQ, Ciani E, Trazzi S
International journal of molecular sciences (2025) 2614: . . **IHC; tested species: mouse**

Increase in Ia Afferent Synaptic Excitation of SOD1 G93A Mouse Motoneurons by 2-Week Anodal Trans-Spinal Direct Current Stimulation Does Not Ameliorate the Cellular Burden of the Disease.
Jankowiak T, Cholewiński M, Kryściak K, Krok E, Grycz K, Bączyk M
The European journal of neuroscience (2025) 6212: e70375. . **IHC; tested species: mouse**

Spastin locally amplifies microtubule dynamics to pattern the axon for presynaptic cargo delivery.
Aiken J, Holzbaur ELF
Current biology : CB (2024) 348: 1687-1704.e8. . **ICC; tested species: human**

Synaptic Targets of Glycinergic Neurons in Laminae I-III of the Spinal Dorsal Horn.
Miranda CO, Hegedüs K, Kis G, Antal M
International journal of molecular sciences (2023) 248: . . **IHC; tested species: mouse**

Mesenchymal-Derived Extracellular Vesicles Enhance Microglia-mediated Synapse Remodeling after Cortical Injury in Rhesus Monkeys.
Zhou Y, Bhatt H, Mojica CA, Xin H, Pessina M, Rosene DL, Moore TL, Medalla M
Research square (2023) : . . **IHC; tested species: monkey**

Mesenchymal-derived extracellular vesicles enhance microglia-mediated synapse remodeling after cortical injury in aging Rhesus monkeys.
Zhou Y, Bhatt H, Mojica CA, Xin H, Pessina MA, Rosene DL, Moore TL, Medalla M
Journal of neuroinflammation (2023) 201: 201. . **IHC; tested species: monkey**

Aberrant activity of mitochondrial NCLX is linked to impaired synaptic transmission and is associated with mental retardation.
Stavsky A, Stoler O, Kostic M, Katoshevsky T, Assali EA, Savic I, Amitai Y, Prokisch H, Leiz S, Daumer-Haas C, Fleidervish I, et al.
Communications biology (2021) 41: 666. . **ICC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/135307 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.