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

VGLUT1/2

Cat.No. 135 503; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were 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 : 100 **IHC**: 1 : 100 up to 1 : 500 **IHC-P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 324 to 339 from rat VGLUT1 (UniProt Id: Q62634)
Reactivity	Reacts with: human (Q9P2U7, Q9P2U8), rat (Q62634, Q9JI12), mouse (Q3TXX4, Q8BLE7), mammals, chicken, zebrafish, frog. Other species not tested yet.
Specificity	Epitope identical in VGLUT 1 and VGLUT 2, one mismatch in VGLUT 3.
Remarks	This antibody is less powerful compared to those directed against the C-termini of VGLUTs but can be used for non-mammals like chicken and zebrafish.VGLUTs aggregate after boiling, making it necessary to run SDS-PAGE with non-boiled samples. **WB**: This antibody produces only a very weak and hardly detectable signal in westernblots on zebrafish brain derived samples.

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** , VGLUT 1 also referred to as **BNPI** and **SLC17A7**, was originally identified as a brain specific phosphate transporter. Like the related VGLUT 2, VGLUT 1 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.
VGLUT 1 and VGLUT 2 show complementary expression patterns. Together, they are currently the best markers for glutamatergic nerve terminals and glutamatergic synapses.

Selected References for 135 503

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 3446187: 1023-8. . **WB, ICC; tested species: rat**

Neurotransmitter Switching Regulated by miRNAs Controls Changes in Social Preference.
Dulcis D, Lippi G, Stark CJ, Do LH, Berg DK, Spitzer NC
Neuron (2017) 956: 1319-1333.e5. . **IHC; tested species: frog**

Hyperactive delta isoform of PI3 kinase enables long-distance regeneration of adult rat corticospinal tract.
Karova K, Polcanova Z, Knight L, Suchankova S, Nieuwenhuis B, Holota R, Herynek V, Machova Urdzikova L, Turecek R, Kwok JC, van den Herik J, et al.
Molecular therapy : the journal of the American Society of Gene Therapy (2025) : . . **IHC; tested species: rat**

Repetitive concussions promote microglia-mediated engulfment of presynaptic excitatory input associated with cognitive dysfunction.
Chahin M, Mutschler J, Dzhuleva SP, Dieterle C, Jimenez LR, Bhattarai SR, Van Steenbergen V, Bareyre FM
Communications biology (2025) 81: 335. . **IHC; tested species: mouse**

Meprin β Modulates Brevican Proteolysis Impairing Neural Plasticity and Memory Formation.
Keller M, Gallagher C, Kreiselmaier S, Bickenbach K, Schmitt U, Marengo L, Taghikhah D, Abukhalaf M, Tholey A, Becker-Pauly C, Mittmann T, et al.
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2025) 3910: e70616. . **IHC; tested species: mouse**

Synaptogenic gene therapy with FGF22 improves circuit plasticity and functional recovery following spinal cord injury.
Aljović A, Jacobi A, Marcantoni M, Kagerer F, Loy K, Kendirli A, Bräutigam J, Fabbio L, Van Steenbergen V, Pleśniar K, Kerschensteiner M, et al.
EMBO molecular medicine (2023) : e16111. . **IHC; tested species: mouse**

Coordinated neurostimulation promotes circuit rewiring and unlocks recovery after spinal cord injury.
Van Steenbergen V, Burattini L, Trumpp M, Fourneau J, Aljović A, Chahin M, Oh H, D'Ambra M, Bareyre FM
The Journal of experimental medicine (2023) 2203: . . **IHC; tested species: mouse**

16pdel lipid changes in iPSC-derived neurons and function of FAM57B in lipid metabolism and synaptogenesis.
Tomasello DL, Kim JL, Khodour Y, McCammon JM, Mitalipova M, Jaenisch R, Futerman AH, Sive H
iScience (2022) 251: 103551. . **ICC; tested species: human**

Visual Cortex Engagement in Retinitis Pigmentosa.
Pietra G, Bonifacino T, Talamonti D, Bonanno G, Sale A, Galli L, Baroncelli L
International journal of molecular sciences (2021) 2217: . . **WB; tested species: mouse**

CX3CR1 mutation alters synaptic and astrocytic protein expression, topographic gradients, and response latencies in the auditory brainstem.
Milinkeviciute G, Chokr SM, Castro EM, Cramer KS
The Journal of comparative neurology (2021) 52911: 3076-3097. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/135503 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.