SYSY Antibodies

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VGLUT2 (SLC17A6)

Cat.No. 135 411; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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**: yes **ICC**: not recommended **IHC**: not recommended **IHC-P (FFPE)**: not tested yet **ELISA**: (see remarks)
Clone	321A8
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of rat VGLUT2 (UniProt Id: Q9JI12)
Epitop	AA 564 to 582 from rat VGLUT2 (UniProt Id: Q9JI12)
Reactivity	Reacts with: rat (Q9JI12). No signal: chicken. Other species not tested yet.
Remarks	**WB**: Cat. no. 135 421 is more sensitive and the first choice for westernblot experiments. **ELISA**: The ELISA-protocol for membrane proteins is required.

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 135 411

Carnosic acid improves outcome after repetitive mild traumatic brain injury.
Maynard ME, Underwood EL, Redell JB, Zhao J, Kobori N, Hood KN, Moore AN, Dash PK
Journal of neurotrauma (2019) : . . **IHC; tested species: mouse**

Human Striatal Dopaminergic and Regional Serotonergic Synaptic Degeneration with Lewy Body Disease and Inheritance of APOE ε4.
Postupna N, Latimer CS, Larson EB, Sherfield E, Paladin J, Shively CA, Jorgensen MJ, Andrews RN, Kaplan JR, Crane PK, Montine KS, et al.
The American journal of pathology (2017) 1874: 884-895. . **FACS; tested species: human**

Synaptic and vesicular coexistence of VGLUT and VGAT in selected excitatory and inhibitory synapses.
Zander JF, Münster-Wandowski A, Brunk I, Pahner I, Gómez-Lira G, Heinemann U, Gutiérrez R, Laube G, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3022: 7634-45. . **IP**

Differential sorting of the vesicular glutamate transporter 1 into a defined vesicular pool is regulated by light signaling involving the clock gene Period2.
Yelamanchili SV, Pendyala G, Brunk I, Darna M, Albrecht U, Ahnert-Hilger G
The Journal of biological chemistry (2006) 28123: 15671-9. . **WB; tested species: mouse**

Substrate recognition and allosteric regulation of synaptic vesicle glutamate transporter VGLUT2.
Li F, Eriksen J, Oses-Prieto JA, Gomez YK, Xu H, Hareendranath S, Das P, Finer-Moore J, Nguyen P, Bowen A, Nelson A, et al.
Nature structural & molecular biology (2025) 328: 1479-1487. . **WB**

Synaptic regulation by OPRM1 variants in reward neurocircuitry.
Popova D, Desai N, Blendy JA, Pang ZP
The Journal of neuroscience : the official journal of the Society for Neuroscience (2019) : . . **IHC; tested species: mouse**

A sandwich enzyme-linked immunosorbent assay for the quantification of insoluble membrane and scaffold proteins.
Geumann C, Grønborg M, Hellwig M, Martens H, Jahn R
Analytical biochemistry (2010) 4022: 161-9. . **IP**

Selected General References

Identification of differentiation-associated brain-specific phosphate transporter as a second vesicular glutamate transporter (VGLUT2).
Takamori S et al. J. Neurosci. (2001) PubMed:11698620

The expression of vesicular glutamate transporters defines two classes of excitatory synapse.
Fremeau RT et al. Neuron (2001) PubMed:11502256

Access the online factsheet including applicable protocols at https://sysy.com/product/135411 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.