SYSY Antibodies

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VGLUT1 (SLC17A7)

Cat.No. 135 511; 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**: external data (see remarks) **IP**: yes **ICC**: 1 : 100 up to 1 : 500 **IHC**: 1 : 100 **IHC-P (FFPE)**: 1 : 100 up to 1 : 500 (see remarks) **IHC-Fr**: external data (see remarks) **FACS**: external data (see remarks)
Clone	317G6
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of rat VGLUT 1 (UniProt Id: Q62634)
Epitop	AA 542 to 560 from rat VGLUT1 (UniProt Id: Q62634)
Reactivity	Reacts with: rat (Q62634), mouse (Q3TXX4). Other species not tested yet.
Specificity	K.O. validated
Matching control	135-3P
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. This antibody yields weaker signals in Western blot experiments than 135 311, 135 011 and our polyclonal and recombinant antibodies. It has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols. **IHC-P (FFPE)**: This antibody yields weaker signals than 135 311 and 135 011. **IHC-Fr**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols. **FACS**: This antibody has been successfully applied and published for this method by customers (see application-specific references). 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

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 135 511

Distribution of SNAP25, VAMP1 and VAMP2 in mature and developing deep cerebellar nuclei after estrogen administration.
Manca P, Mameli O, Caria MA, Torrejón-Escribano B, Blasi J
Neuroscience (2014) 266: 102-15. . **IHC, WB**

Inflammasome signaling in astrocytes modulates hippocampal plasticity.
Zengeler KE, Hollis A, Deutsch TCJ, Samuels JD, Ennerfelt H, Moore KA, Steacy EJ, Sabapathy V, Sharma R, Patel MK, Lukens JR, et al.
Immunity (2025) 586: 1519-1535.e11. . **WB, IHC; tested species: mouse**

Functional Neuroligin-2-MDGA1 interactions differentially regulate synaptic GABAARs and cytosolic gephyrin aggregation.
Zeppillo T, Ali H, Ravichandran S, Ritter TC, Wenger S, López-Murcia FJ, Gideons E, Signorelli J, Schmeisser MJ, Wiltfang J, Rhee J, et al.
Communications biology (2024) 71: 1157. . **IHC_FR; tested species: mouse**

Brain Iron Deficiency Changes the Stoichiometry of Adenosine Receptor Subtypes in Cortico-Striatal Terminals: Implications for Restless Legs Syndrome.
Rodrigues MS, Ferreira SG, Quiroz C, Earley CJ, García-Borreguero D, Cunha RA, Ciruela F, Köfalvi A, Ferré S
Molecules (Basel, Switzerland) (2022) 275: . . **FACS; tested species: rat**

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**

Telencephalic neurons monosynaptically link brainstem and forebrain premotor networks necessary for song.
Roberts TF, Klein ME, Kubke MF, Wild JM, Mooney R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2008) 2813: 3479-89. . **ICC**

Trans-dimerization of Amyloid Precursor Protein Family Members Induces Pre- and Postsynaptic Differentiation through Distinct Signaling Pathways.
Rajender R, Foth N, Eggert S, Schilling S, Fäßler M, Ott C, Mühlhaus T, Sommer F, Schroda M, Maritzen T, Banicevic M, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2026) 4629: . . **ICC; tested species: human**

Persistent input- and cell-type-specific synaptic alterations in the somatosensory thalamus of Dravet syndrome mice.
Safari M, Desai RP, Rai H, Roberts TJ, Khondaker R, Smith J, Swanger SA
Journal of neurophysiology (2026) 1362: 558-574. . **IHC; tested species: mouse**

Long-lasting remodeling of astrocytes in an Scna1+/- mouse model of Dravet syndrome.
Genin A, Janvier A, Moujellil-Legagneur T, Blaquière M, Chaussy A, Privé R, Duprat F, Mantegazza M, Audinat E, Marchi N, Cresto N, et al.
Epilepsia (2026) : . . **IHC; tested species: mouse**

Protocol for imaging and analyzing the synaptic coverage of astrocytes with super-resolution STED microscopy in mouse brain slices.
Waldron L, Garnero M, Mazaud D, Rouach N
STAR protocols (2026) 74: 104906. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/135511 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.