SYSY Antibodies

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VGLUT1 (SLC17A7)

Cat.No. 135 311; 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 : 500 up to 1 : 2000 (AP staining) (see remarks) **IP**: yes (see remarks) **ICC**: 1 : 100 **IHC**: 1 : 100 up to 1 : 500 **IHC-P (FFPE)**: 1 : 400 up to 1 : 1000 **EM**: external data (see remarks) **ELISA**: yes (see remarks)
Clone	317D5
Subtype	IgG2a (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), human (Q9P2U7). 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 stronger signals in Western blot experiments than cat. no. 135 511 but is less sensitive than 135 011 and our polyclonal and recombinant antibodies. **IP**: Coupling to protein A is recommended for IP, since covalent coupling to activated sepharose leads to considerable loss of activity. **EM**: This antibody has been successfully applied and published for this method by customers (see application-specific references). **ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as capture antibody for sandwich-ELISA. Please refer to the protocol for suitable detector antibodies.

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 135 311

EphA4 is localized in clathrin-coated and synaptic vesicles in adult mouse brain.
Bouvier D, Tremblay ME, Riad M, Corera AT, Gingras D, Horn KE, Fotouhi M, Girard M, Murai KK, Kennedy TE, McPherson PS, et al.
Journal of neurochemistry (2010) 1131: 153-65. . **EM, ICC, IP, WB**

Expression and function of SNAP-25 as a universal SNARE component in GABAergic neurons.
Tafoya LC, Mameli M, Miyashita T, Guzowski JF, Valenzuela CF, Wilson MC
The Journal of neuroscience : the official journal of the Society for Neuroscience (2006) 2630: 7826-38. . **WB, ICC, IHC**

Nonapoptotic caspase-3 guides C1q-dependent synaptic phagocytosis by microglia.
Andoh M, Shinoda N, Taira Y, Araki T, Kasahara Y, Takeuchi H, Miura M, Ikegaya Y, Koyama R
Nature communications (2025) 161: 918. . **ICC, IHC; tested species: mouse**

Structure and topography of the synaptic V-ATPase-synaptophysin complex.
Wang C, Jiang W, Leitz J, Yang K, Esquivies L, Wang X, Shen X, Held RG, Adams DJ, Basta T, Hampton L, et al.
Nature (2024) 6318022: 899-904. . **WB, IP; tested species: mouse**

Regulation of hippocampal mossy fiber-CA3 synapse function by a Bcl11b/C1ql2/Nrxn3(25b+) pathway.
Koumoundourou A, Rannap M, De Bruyckere E, Nestel S, Reissner C, Egorov AV, Liu P, Missler M, Heimrich B, Draguhn A, Britsch S, et al.
eLife (2024) 12: . . **ICC, IHC; tested species: mouse**

The TMEM132B-GABAA receptor complex controls alcohol actions in the brain.
Wang G, Peng S, Reyes Mendez M, Keramidas A, Castellano D, Wu K, Han W, Tian Q, Dong L, Li Y, Lu W, et al.
Cell (2024) 18723: 6649-6668.e35. . **WB, ICC; tested species: mouse**

Cannabidiol modulates excitatory-inhibitory ratio to counter hippocampal hyperactivity.
Rosenberg EC, Chamberland S, Bazelot M, Nebet ER, Wang X, McKenzie S, Jain S, Greenhill S, Wilson M, Marley N, Salah A, et al.
Neuron (2023) : . . **ICC, IHC; tested species: mouse,rat**

Synapsin-dependent reserve pool of synaptic vesicles supports replenishment of the readily releasable pool under intense synaptic transmission.
Vasileva M, Horstmann H, Geumann C, Gitler D, Kuner T
The European journal of neuroscience (2012) 368: 3005-20. . **ELISA**

Corticothalamic assembloids recapitulate human fetal brain morphologies and enhance neuronal complexity.
Antunes ASLM, Athié MCP, Caznok Silveira AC, Renner J, Dias EV, Santos JVRD, Hrvoj-Mihic B, Canateli C, Meidanis J, Muotri AR, Vieira AS, et al.
Neuroscience (2026) 615: 43-54. . **IHC; tested species: human**

Human milk oligosaccharides promote synaptogenesis and neurite outgrowth in human cortical organoids.
Bulcão V C L, Moreira NCS, Carvalho PC, Luz IS, de S da G Fischer J, Tsu BL, Sejane K, Savo C, Martins AMA, Bode L, Muotri AR, et al.
Biochemistry and biophysics reports (2026) 45: 102529. . **ICC; tested species: human**

Access the online factsheet including applicable protocols at https://sysy.com/product/135311 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.