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

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**: 1 : 100 up to 1 : 1000 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 100 up to 1 : 500 **IHC**: 1 : 100 **IHC-P**: 1 : 100 up to 1 : 500
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**: This antibody yields weaker signals in Western blot experiments than 135 311, 135 011 and the polyclonal antibodies 135 302, 135 303, 135 304 and 135 306. VGLUT 1 aggregates after boiling, making it necessary to run SDS-PAGE with non-boiled 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 135 511

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**

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**

Persistence of quantal synaptic vesicle recycling in virtual absence of dynamins.
Afuwape OAT, Chanaday NL, Kasap M, Monteggia LM, Kavalali ET
The Journal of physiology (2024) : . . **ICC; tested species: mouse**

Deficits in neuronal architecture but not over-inhibition are main determinants of reduced neuronal network activity in a mouse model of overexpression of Dyrk1A.
Manubens-Gil L, Pons-Espinal M, Gener T, Ballesteros-Yañez I, de Lagrán MM, Dierssen M
Cerebral cortex (New York, N.Y. : 1991) (2024) 341: . . **IHC; tested species: mouse**

S-SCAM is essential for synapse formation.
Wittenmayer N, Petkova-Tuffy A, Borgmeyer M, Lee C, Becker J, Böning A, Kügler S, Rhee J, Viotti JS, Dresbach T
Frontiers in cellular neuroscience (2023) 17: 1182493. . **ICC; tested species: rat**

Deficits in neuronal architecture but not over-inhibition are main determinants of reduced neuronal network activity in a mouse model of overexpression of Dyrk1A.
Manubens-Gil L, Pons-Espinal M, Gener T, Ballesteros-Yañez I, Martínez de Lagrán M, Dierssen M
bioRxiv : the preprint server for biology (2023) : . . **IHC; tested species: mouse**

Regulation of synaptic connectivity in schizophrenia spectrum by mutual neuron-microglia interaction.
Breitmeyer R, Vogel S, Heider J, Hartmann SM, Wüst R, Keller AL, Binner A, Fitzgerald JC, Fallgatter AJ, Volkmer H
Communications biology (2023) 61: 472. . **ICC; tested species: human**

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 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.