SYSY Antibodies

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VMaT2 (SLC18A2)

Cat.No. 138 313; 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**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 1 to 20 from mouse VMaT2 (UniProt Id: Q8BRU6)
Reactivity	Reacts with: rat (Q8BRU6), mouse (Q8BRU6). Other species not tested yet.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Vesicular **m**ono**a**mine **t**ransporters **VMaT**s mediate the translocation of monoamines (serotonin, histamine, dopamine) from the cytoplasm into secretory vesicles by using a proton electrochemical gradient.
VMaTs are integral membrane proteins with 12 putative trans-membrane domains predicted by sequence analysis. Both, the N- and C-terminus of the proteins are located on the cytoplasmic side. Two VMaT isoforms, VMaT 1 and **VMaT 2**, have been described. It has been proposed that VMaT 1 transports monoamines into large dense core vesicles (LDCVs), whereas VMaT 2 is needed for the loading of small synaptic vesicles (SSVs).
In rat VMaT 1 is expressed in the adrenal gland, while VMaT 2 is expressed in brain.

Selected References for 138 313

Colocalization of different neurotransmitter transporters on synaptic vesicles is sparse except for VGLUT1 and ZnT3.
Upmanyu N, Jin J, Emde HV, Ganzella M, Bösche L, Malviya VN, Zhuleku E, Politi AZ, Ninov M, Silbern I, Leutenegger M, et al.
Neuron (2022) : . . **UPTAKE; tested species: rat**

Immunohistochemical analysis of the mouse celiac ganglion: An integrative relay station of the peripheral nervous system.
Kaestner CL, Smith EH, Peirce SG, Hoover DB
The Journal of comparative neurology (2019) : . . **IHC; tested species: mouse**

Sympathetic-epithelial crosstalk governs tissue-resident memory T cell immunosurveillance in the skin.
Zhang P, Miao J, Yu H, Yu H, Liu C, Zhao L, Yang P, Zhou T, Zhang B
Cell (2026) 1895: 1323-1340.e25. . **IHC; tested species: mouse**

Early α-synuclein/synapsin III co-accumulation, nigrostriatal dopaminergic synaptopathy and denervation in the MPTPp mouse model of Parkinson's Disease.
Serra M, Faustini G, Brembati V, Casu MA, Pizzi M, Morelli M, Pinna A, Bellucci A
Experimental neurology (2025) 383: 115040. . **IHC; tested species: mouse**

Fluoxetine reverses early-life stress-induced depressive-like behaviors and region-specific alterations of monoamine transporters in female mice.
Zheng JY, Li XX, Liu X, Zhang CC, Sun YX, Ma YN, Wang HL, Su YA, Si TM, Li JT
Pharmacology, biochemistry, and behavior (2024) 237: 173722. . **IHC; tested species: mouse**

Vortioxetine attenuates the effects of early-life stress on depression-like behaviors and monoamine transporters in female mice.
Liu X, Sun YX, Zhang CC, Zhang XQ, Zhang Y, Wang T, Ma YN, Wang H, Su YA, Li JT, Si TM, et al.
Neuropharmacology (2021) : 108468. . **IHC; tested species: mouse**

Innervation and Neuronal Control of the Mammalian Sinoatrial Node a Comprehensive Atlas.
Hanna P, Dacey MJ, Brennan J, Moss A, Robbins S, Achanta S, Biscola NP, Swid MA, Rajendran PS, Mori S, Hadaya JE, et al.
Circulation research (2021) 1289: 1279-1296. . **IHC; tested species: pig**

Cell Types Promoting Goosebumps Form a Niche to Regulate Hair Follicle Stem Cells.
Shwartz Y, Gonzalez-Celeiro M, Chen CL, Pasolli HA, Sheu SH, Fan SM, Shamsi F, Assaad S, Lin ET, Zhang B, Tsai PC, et al.
Cell (2020) : . . **IHC; tested species: mouse**

Selected General References

Differential expression of vesicular monoamine transporter (VMAT) 1 and 2 in gastrointestinal endocrine tumours.
Jakobsen AM et al. J. Pathol. (2001) PubMed:11745679

VMAT-Mediated changes in quantal size and vesicular volume.
Colliver TL et al. J. Neurosci. (2000) PubMed:10884311

Access the online factsheet including applicable protocols at https://sysy.com/product/138313 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.