SYSY Antibodies

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VMaT2 (SLC18A2) C-terminus

Cat.No. 138 302; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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**: not tested yet **ICC**: 1 : 1000 (see remarks) **IHC**: 1 : 500 **IHC-P (FFPE)**: not tested yet **EM**: external data (see remarks)
Immunogen	Synthetic peptide corresponding to AA 496 to 515 from rat VMaT2 (UniProt Id: Q01827)
Reactivity	Reacts with: rat (Q8BRU6). Other species not tested yet.
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. **ICC**: Mild FA-fixation with a subsequent ice-cold methanol fixation step is required. **EM**: 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
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 138 302

The first luminal domain of vesicular monoamine transporters mediates G-protein-dependent regulation of transmitter uptake.
Brunk I, Blex C, Rachakonda S, Höltje M, Winter S, Pahner I, Walther DJ, Ahnert-Hilger G
The Journal of biological chemistry (2006) 28144: 33373-85. . **WB, ICC**

Chronic low-level lead exposure affects the monoaminergic system in the mouse superior olivary complex.
Fortune T, Lurie DI
The Journal of comparative neurology (2009) 5135: 542-58. . **IHC, WB; tested species: mouse**

GABA is localized in dopaminergic synaptic vesicles in the rodent striatum.
Stensrud MJ, Puchades M, Gundersen V
Brain structure & function (2014) 2196: 1901-12. . **EM; tested species: rat**

Plasticity of synapses innervating spinal motor neurons after spinal cord injury in rhesus monkeys.
He Z, Liu Z, Xu W, Zhu B, Zhang R, Wang W, Zheng X
Journal of neuropathology and experimental neurology (2025) : . . **IHC; tested species: monkey**

On-Site Formation of Functional Dopaminergic Presynaptic Terminals on Neuroligin-2-Modified Gold-Coated Microspheres.
Cho W, Jung M, Yoon SH, Jeon J, Oh MA, Kim JY, Park M, Kang CM, Chung TD
ACS applied materials & interfaces (2024) 163: 3082-3092. . **ICC; tested species: rat**

Deficiency of Perry syndrome-associated p150Glued in midbrain dopaminergic neurons leads to progressive neurodegeneration and endoplasmic reticulum abnormalities.
Yu J, Yang X, Zheng J, Sgobio C, Sun L, Cai H
NPJ Parkinson's disease (2023) 91: 35. . **IHC; tested species: mouse**

Generation of self-organized autonomic ganglion organoids from fibroblasts.
Liu S, Xiang K, Yuan F, Xiang M
iScience (2023) 263: 106241. . **ICC; tested species: mouse**

Distinct insulin granule subpopulations implicated in the secretory pathology of diabetes types 1 and 2.
Kreutzberger AJB, Kiessling V, Doyle CA, Schenk N, Upchurch CM, Elmer-Dixon M, Ward AE, Preobraschenski J, Hussein SS, Tomaka W, Seelheim P, et al.
eLife (2020) 9: . . **WB; tested species: rat**

Effects of sleep disruption on stress, nigrostriatal markers, and behavior in a chronic/progressive MPTP male mouse model of parkinsonism.
Xu M, Bohlen JK, Moore C, Nipper MA, Finn DA, Jones CE, Lim MM, Meshul CK
Journal of neuroscience research (2019) 9712: 1706-1719. . **WB; tested species: mouse**

Conversion of Astrocytes and Fibroblasts into Functional Noradrenergic Neurons.
Li S, Shi Y, Yao X, Wang X, Shen L, Rao Z, Yuan J, Liu Y, Zhou Z, Zhang Z, Liu F, et al.
Cell reports (2019) 283: 682-697.e7. . **ICC; tested species: mouse**

Characterization of Dmrt3-derived Neurons Suggest a Role within Locomotor Circuits.
Perry S, Larhammar M, Vieillard J, Nagaraja C, Hilscher MM, Tafreshiha A, Rofo F, Caixeta FV, Kullander K
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/138302 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.