SYSY Antibodies

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VMaT2 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) **IP**: not tested yet **ICC**: 1 : 1000 **IHC**: 1 : 500 **IHC-P**: not tested yet
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.

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**

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**

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**

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**

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**

Methyl-4-phenylpyridinium (MPP+) differentially affects monoamine release and re-uptake in murine embryonic stem cell-derived dopaminergic and serotonergic neurons.
Martí Y, Matthaeus F, Lau T, Schloss P
Molecular and cellular neurosciences (2017) 83: 37-45. . **ICC; 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 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.