

## VMaT2

Cat.No. 138 313; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

|                            |  |
|----------------------------|--|
| Reconstitution/<br>Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 50 µl H <sub>2</sub> O 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               | <b>WB:</b> not tested yet<br><b>IP:</b> not tested yet<br><b>ICC:</b> not tested yet<br><b>IHC:</b> 1 : 200 up to 1 : 500<br><b>IHC_P:</b> 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).<br>Other species not tested yet.  |

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

### Background

**Vesicular monoamine transporters VMaTs** 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, Bösch 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**

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, Andersson P, Saglik G, Andersson E, Kölby L, Erickson JD, Forssell-Aronsson E, Wängberg B, Ahlman H, Nilsson O *The Journal of pathology* (2001) 1954: 463-72. .

VMAT-Mediated changes in quantal size and vesicular volume.

Colliver TL, Pyott SJ, Achalabun M, Ewing AG

*The Journal of neuroscience : the official journal of the Society for Neuroscience* (2000) 2014: 5276-82. .

The neuronal monoamine transporter VMAT2 is regulated by the trimeric GTPase Go(2).

Höltje M, von Jagow B, Pahnner I, Lautenschlager M, Hörtnagl H, Nürnberg B, Jahn R, Ahnert-Hilger G *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2000) 2006: 2131-41. .

Vesicular monoamine transporter-2: immunogold localization in striatal axons and terminals.

Nirenberg MJ, Chan J, Liu Y, Edwards RH, Pickel VM

*Synapse (New York, N.Y.)* (1997) 262: 194-8. .

The vesicular monoamine transporter 2 is present in small synaptic vesicles and preferentially localizes to large dense core vesicles in rat solitary tract nuclei.

Nirenberg MJ, Liu Y, Peter D, Edwards RH, Pickel VM

*Proceedings of the National Academy of Sciences of the United States of America* (1995) 9219: 8773-7. .

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 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 at 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.