

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 ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 100 up to 1 : 1000 (AP staining) (see remarks) IP: not tested yet ICC: 1 : 1000 (see remarks) IHC: not recommended IHC-P/FFPE: 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.
Specificity	Specific for rat VMaT 2.
Remarks	WB: VMaT 2 aggregates after boiling making it necessary to run SDS-PAGE only with non-boiled samples. ICC: Requires brief fixation with 4 % PFA for 2 min and subsequent ice cold methanol fixation for 10 min.

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

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 SYSY Antibodies

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) 281(44): 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) 513(5): 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) 219(6): 1901-12. **EM; tested species: rat**

Characterization of Dmrt3-derived Neurons Suggest a Role within Locomotor Circuits. Perry S, Larhammar M, Vieillard J, Nagaraja C, Hilscher MM, Tafreshi 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**

Harnessing the trophic and modulatory potential of statins in a dopaminergic cell line. Schmitt M, Dehay B, Bezard E, Garcia-Ladona FJ
Synapse (New York, N.Y.) (2016) 70(3): 71-86. **ICC**

Development of early-born γ-Aminobutyric acid hub neurons in mouse hippocampus from embryogenesis to adulthood. Villette V, Guigue P, Picardo MA, Sousa VH, Leprince E, Lachamp P, Malvache A, Tressard R, Cossart R, Baude A
The Journal of comparative neurology (2016) 524(12): 2440-61. **IHC; tested species: mouse**

Gender-dependent and genotype-sensitive monoaminergic changes induced by polychlorinated biphenyl 153 in the rat brain. Dervola KS, Johansen EB, Walaas SI, Fonnum F
Neurotoxicology (2015) 50: 38-45. **WB**

Distribution of VGLUT3 in highly collateralized axons from the rat dorsal raphe nucleus as revealed by single-neuron reconstructions.

Gagnon D, Parent M
PloS one (2014) 9(2): e87709. **IHC; tested species: rat**

Sympathetic fiber sprouting in inflamed joints and adjacent skin contributes to pain-related behavior in arthritis. Longo G, Osikowicz M, Ribeiro-da-Silva A
The Journal of neuroscience : the official journal of the Society for Neuroscience (2013) 33(24): 10066-74. **IHC**

Cytoprotective effects of growth factors: BDNF more potent than GDNF in an organotypic culture model of Parkinson's disease. Stahl K, Mylonakou MN, Skare Ø, Amiry-Moghaddam M, Torp R
Brain research (2011) 1378: 105-18. **IHC**

Amphetamine regulates NR2B expression in Go2a knockout mice and thereby sustains behavioral sensitization. Brunk I, Sanchis-Segura C, Blex C, Perreau-Lenz S, Bilbao A, Spanagel R, Ahnert-Hilger G
Journal of neurochemistry (2010) 115(1): 234-46. **WB; tested species: mouse**

Deletion of Go2alpha abolishes cocaine-induced behavioral sensitization by disturbing the striatal dopamine system. Brunk I, Blex C, Sanchis-Segura C, Sternberg J, Perreau-Lenz S, Bilbao A, Hörtnagl H, Baron J, Juranek J, Laube G, Birnbaumer L, et al.
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2008) 22(10): 3736-46. **WB**

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) 195(4): 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) 20(14): 5276-82.

The neuronal monoamine transporter VMAT2 is regulated by the trimeric GTPase Go(2). Höltje M, von Jagow B, Pahner 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) 20(6): 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) 26(2): 194-8.