SANTA CRUZ BIOTECHNOLOGY, INC.

VMAT 2 (D-4): sc-390285

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neurotransmission depends on the regulated exocytotic release of chemical transmitter molecules. This requires the packaging of these substances into the specialized secretory vesicles of neurons and neuroendocrine cells, a process mediated by specific vesicular transporters. The family of genes encoding the vesicular transporters of monoamines (VMAT 1 and VMAT 2) and acetylcholine (VACht) have been cloned and functionally characterized. The sequence of these integral membrane proteins predicts twelve transmembrane domains and weak homology to a class of bacterial antibiotic resistance proteins. The vesicular transport of neurotransmitter molecules has been shown to be an active ATP- and proton dependent transport mechanism.

REFERENCES

1. Roghani, A., et al. 1994. Molecular cloning of a putative vesicular transporter for acetylcholine. Proc. Natl. Acad. Sci. USA 91: 10620-10624.
2. Henry, J.P., et al. 1994. Biochemistry and molecular biology of the vesicular monoamine transporter from chromaffin granules. J. Exp. Biol. 196: 251-262.
3. Haigh, J.R., et al. 1994. Acetylcholine active transport by rat brain synaptic vesicles. Neuroreport 5: 773-776.
4. Yelin, R., et al. 1995. The pharmacological profile of the vesicular monoamine transporter resembles that of multidrug transporters. FEBS Lett. 377: 201-207.
5. Varoqui, H., et al. 1996. Active transport of acetylcholine by the human vesicular acetylcholine transporter. J. Biol. Chem. 271: 27229-27232.
6. Varoqui, H., et al. 1997. Vesicular neurotransmitter transporters. Potential sites for the regulation of synaptic function. Mol. Neurobiol. 15: 165-191.
7. Reimer, R.J., et al. 1998. Vesicular neurotransmitter transport and the presynaptic regulation of quantal size. Curr. Opin. Neurobiol. 8: 405-412.

CHROMOSOMAL LOCATION

Genetic locus: SLC18A2 (human) mapping to 10q25.3; Slc18a2 (mouse) mapping to 19 D3.

SOURCE

VMAT 2 (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 485-514 at the C-terminus of VMAT 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390285 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

VMAT 2 (D-4) is recommended for detection of VMAT 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for VMAT 2 siRNA (h): sc-36824, VMAT 2 siRNA (m): sc-36825, VMAT 2 shRNA Plasmid (h): sc-36824-SH, VMAT 2 shRNA Plasmid (m): sc-36825-SH, VMAT 2 shRNA (h) Lentiviral Particles: sc-36824-V and VMAT 2 shRNA (m) Lentiviral Particles: sc-36825-V.

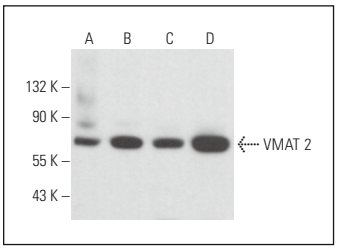
Molecular Weight of VMAT 2: 63 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

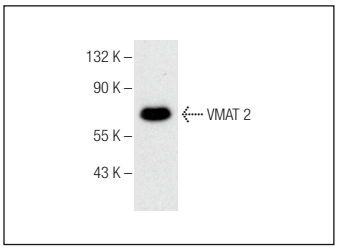
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



VMAT 2 (D-4): sc-390285. Western blot analysis of VMAT 2 expression in Caco-2 (**A**), SK-N-MC (**B**), Jurkat (**C**) and K-562 (**D**) whole cell lysates.



VMAT 2 (D-4): sc-390285. Western blot analysis of VMAT 2 expression in IMR-32 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Chen, L., et al. 2013. RNA interference targeting α-synuclein attenuates methamphetamine-induced neurotoxicity in SH-SY5Y cells. Brain Res. 1521: 59-67.
2. Zhang, Z., et al. 2018. RTP801 is a critical factor in the neurodegeneration process of A53T α-synuclein in a mouse model of Parkinson's disease under chronic restraint stress. Br. J. Pharmacol. 175: 590-605.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.