SANTA CRUZ BIOTECHNOLOGY, INC.

VMAT 1 (G-12): sc-166391

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.

CHROMOSOMAL LOCATION

Genetic locus: SLC18A1 (human) mapping to 8p21.3; Slc18a1 (mouse) mapping to 8 B3.3.

SOURCE

VMAT 1 (G-12) is a mouse monoclonal antibody raised against amino acids 44-143 mapping near the N-terminus of VMAT 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

VMAT 1 (G-12) is available conjugated to agarose (sc-166391 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166391 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166391 PE), fluorescein (sc-166391 FITC), Alexa Fluor® 488 (sc-166391 AF488), Alexa Fluor® 546 (sc-166391 AF546), Alexa Fluor® 594 (sc-166391 AF594) or Alexa Fluor® 647 (sc-166391 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166391 AF680) or Alexa Fluor® 790 (sc-166391 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

VMAT 1 (G-12) is recommended for detection of VMAT 1 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 1 siRNA (h): sc-42324, VMAT 1 siRNA (m): sc-42325, VMAT 1 shRNA Plasmid (h): sc-42324-SH, VMAT 1 shRNA Plasmid (m): sc-42325-SH, VMAT 1 shRNA (h) Lentiviral Particles: sc-42324-V and VMAT 1 shRNA (m) Lentiviral Particles: sc-42325-V.

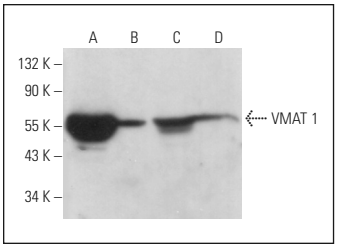
Molecular Weight of VMAT 1: 55 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Caki-1 cell lysate: sc-2224 or RAW 264.7 whole cell lysate: sc-2211.

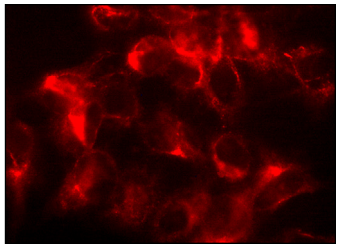
RECOMMENDED SUPPORT REAGENTS

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 1 (G-12): sc-166391. Western blot analysis of VMAT 1 expression in Caki-1 (**A**), Jurkat (**B**), RAW 264.7 (**C**) and PC-12 (**D**) whole cell lysates.



VMAT 1 (G-12): sc-166391. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Jiménez-Trejo, F., et al. 2020. Indolaminergic system in adult rat testes: evidence for a local serotonin system. Front. Neuroanat. 14: 570058.
2. Sriha, J., et al. 2022. BET and CDK inhibition reveal differences in the proliferation control of sympathetic ganglion neuroblasts and adrenal chromaffin cells. Cancers 14: 2755.

STORAGE

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