SANTA CRUZ BIOTECHNOLOGY, INC.

# VAChT (C-20): sc-7716

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: SLC18A3 (human) mapping to 10q11.23; Slc18a3 (mouse) mapping to 14 B.

## SOURCE

VAChT (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of VAChT of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7716 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

VAChT (C-20) is recommended for detection of VAChT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 VAChT siRNA (h): sc-36803, VAChT siRNA (m): sc-36804, VAChT shRNA Plasmid (h): sc-36803-SH, VAChT shRNA Plasmid (m): sc-36804-SH, VAChT shRNA (h) Lentiviral Particles: sc-36803-V and VAChT shRNA (m) Lentiviral Particles: sc-36804-V.

Molecular Weight of VAChT: 55/70 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse cerebellum extract: sc-2403 or SK-N-MC cell lysate: sc-2237.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS


1. Tayebati, S.K., et al. 2002. Immunochemical and immunocytochemical characterization of cholinergic markers in human peripheral blood lymphocytes. J. Neuroimmunol. 132: 147-155.
2. Tayebati, S.K., et al. 2004. Effect of treatment with the cholinesterase inhibitor rivastigmine on vesicular acetylcholine transporter and choline acetyltransferase in rat brain. Clin. Exp. Hypertens. 26: 363-373.
3. Jönsson, M., et al. 2007. Presence of a marked nonneuronal cholinergic system in human colon: study of normal colon and colon in ulcerative colitis. Inflamm. Bowel Dis. 13: 1347-1356.
4. Bjur, D., et al. 2008. Presence of a non-neuronal cholinergic system and occurrence of up- and down-regulation in expression of M2 muscarinic acetylcholine receptors: new aspects of importance regarding Achilles tendon tendinosis (tendinopathy). Cell Tissue Res. 331: 385-400.
5. Hernandez, C.M., et al. 2010. Loss of $\alpha$7 nicotinic receptors enhances $\beta$-amyloid oligomer accumulation, exacerbating early-stage cognitive decline and septohippocampal pathology in a mouse model of Alzheimer's disease. J. Neurosci. 30: 2442-2453.
6. Fong, G., et al. 2013. Human tenocytes are stimulated to proliferate by acetylcholine through an EGFR signalling pathway. Cell Tissue Res. 351: 465-475.


## RESEARCH USE

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