SANTA CRUZ BIOTECHNOLOGY, INC.

CHT1 (F-16): sc-27518

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Under physiological conditions, Na^+-Cl^- dependent hemicholinium-3 (HC-3)-sensitive, high-affinity choline uptake limits the rate of acetylcholine synthesis in cholinergic neurons. Hemicholinium-3 sensitive high-affinity choline transporter (CHT1) carries out this uptake. Regions of the nervous system that are rich with cholinergic cell bodies such as the spinal cord, brainstem, mid-brain and striatum express CHT at high levels, whereas tissues lacking cholinergic cells, such as the cerebellum and kidney, show no CHT1 expression. CHT1 localizes to a subpopulation of small vesicles, which also contain vesicular acetylcholine transporter and acetylcholine, within the cholinergic presynaptic terminals. In response to neuronal activity, these particular vesicles translocate to the plasma membrane to re-uptake choline, a process that, due to the other contents of the vesicle, may be coupled with the rate of ACh release.

REFERENCES

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2. Apparsundaram, S., Ferguson, S.M. and Blakely, R.D. 2001. Molecular cloning and characterization of a murine hemicholinium-3-sensitive choline transporter. Biochem. Soc. Trans. 29: 711-716.
3. Ferguson, S.M., Savchenko, V., Apparsundaram, S., Zwick, M., Wright, J., Heilman, C.J., Yi, H., Levey, A.I. and Blakely, R.D. 2003. Vesicular localization and activity-dependent trafficking of presynaptic choline transporters. J. Neurosci. 23: 9697-9709.
4. Ribeiro, F.M., Alves-Silva, J., Volknandt, W., Martins-Silva, C., Mahmud, H., Wilhelm, A., Gomez, M.V., Rylett, R.J., Ferguson, S.S., Prado, V.F. and Prado, M.A. 2003. The hemicholinium-3 sensitive high affinity choline transporter is internalized by clathrin-mediated endocytosis and is present in endosomes and synaptic vesicles. J. Neurochem. 87: 136-146.

CHROMOSOMAL LOCATION

Genetic locus: SLC5A7 (human) mapping to 2q12.3; Slc5a7 (mouse) mapping to 17 D.

SOURCE

CHT1 (F-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CHT1 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-27518 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

CHT1 (F-16) is recommended for detection of CHT1 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).

CHT1 (F-16) is also recommended for detection of CHT1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CHT1 siRNA (h): sc-44594, CHT1 siRNA (m): sc-44595, CHT1 shRNA Plasmid (h): sc-44594-SH, CHT1 shRNA Plasmid (m): sc-44595-SH, CHT1 shRNA (h) Lentiviral Particles: sc-44594-V and CHT1 shRNA (m) Lentiviral Particles: sc-44595-V.

Molecular Weight of CHT1: 65 kDa.

Positive Controls: Mouse brain extract: sc-2253 or rat brain extract: sc-2392.

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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.