SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptotagmin VII (N-18): sc-15418

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Synaptotagmins are a large gene family of synaptic vesicle type III integral membrane proteins that function as regulators of both exocytosis and endocytosis and are involved in neurotransmitter secretion from small secretory vesicles. Calcium binds to Synaptotagmin I which triggers neurotransmitter release at the synapse. Synaptotagmin II is phosphorylated by WNK1 in a process that regulates calcium-dependent interactions. Synaptotagmin III is involved in calcium-dependent exocytosis of secretory vesicles in endocrine cells and neurons. Synaptotagmin IV is expressed in neuronal tissues, and has the highest mRNA levels in the hippocampus. The proximity of the Synaptotagmin IV gene to markers of several psychiatric disorders suggest an involvement of synaptotagmin IV in human disease. Synaptotagmin V is a dense-core vesicle-specific protein that regulates a specific type of calcium-regulated secretion. Synaptotagmin VI interacts with adaptor protein-2 in a calcium-independent manner. Synaptotagmin VII is widely expressed in non-neuronal tissues.

REFERENCES

1. Hilbush, B.S., et al. 1994. A third synaptotagmin gene, Syt3, in the mouse. Proc. Natl. Acad. Sci. USA 91: 8195-8199.
2. Li, C., et al. 1995. Ca^{2+}-dependent and -independent activities of neural and non-neural synaptotagmins. Nature 375: 594-599.
3. Ferguson, G.D., et al. 2000. The human Synaptotagmin IV gene defines an evolutionary break point between syntenic mouse and human chromosome regions but retains ligand inducibility and tissue specificity. J. Biol. Chem. 275: 36920-36926.
4. Ferguson, G.D., et al. 2001. Synaptotagmin IV: biochemistry, genetics, behavior, and possible links to human psychiatric disease. Mol. Neurobiol. 23: 173-185.
5. Ibata, K., et al. 2002. Non-polarized distribution of Synaptotagmin IV in neurons: evidence that Synaptotagmin IV is not a synaptic vesicle protein. Neurosci. Res. 43: 401-406.
6. LocusLink Report (LocusID: 6860). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: SYT7 (human) mapping to 11q12.2; Syt7 (mouse) mapping to 19 A.

SOURCE

Synaptotagmin VII (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Synaptotagmin VII 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-15418 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synaptotagmin VII (N-18) is recommended for detection of Synaptotagmin VII 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).

Synaptotagmin VII (N-18) is also recommended for detection of Synaptotagmin VII in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Synaptotagmin VII siRNA (h): sc-41320, Synaptotagmin VII siRNA (m): sc-41321, Synaptotagmin VII shRNA Plasmid (h): sc-41320-SH, Synaptotagmin VII shRNA Plasmid (m): sc-41321-SH, Synaptotagmin VII shRNA (h) Lentiviral Particles: sc-41320-V and Synaptotagmin VII shRNA (m) Lentiviral Particles: sc-41321-V.

Molecular Weight of Synaptotagmin VII: 65 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410.

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. Chen, G.Y., et al. 2005. Abnormalities caused by carbohydrate alterations in Iβ6-N-acetylglucosaminyltransferase-deficient mice. Mol. Cell. Biol. 25: 7828-7838.
2. Zhao, H., et al. 2008. Synaptotagmin VII regulates bone remodeling by modulating osteoclast and osteoblast secretion. Dev. Cell 14: 914-925.

STORAGE

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

RESEARCH USE

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