SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptotagmin X (D-14): sc-169464

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Synaptotagmin X, also known as SytX or synaptotagmin-10 (SYT10), is a 523 amino acid single-pass synaptic vesicle membrane protein that belongs to the synaptotagmin family and contains 2 C2 domains. Three calcium ions are bound to Synaptotagmin X per subunit using the C2 domains. While it may be involved in calcium-dependent exocytosis of secretory vesicles through calcium and phospholipid binding to the C2 domain, Synaptotagmin X may also serve as calcium sensors in the process of vesicular trafficking and exocytosis. Synaptotagmin X exists as either a homodimer or heterodimer and is only expressed in pancreas, lung and kidney. The gene that encodes Synaptotagmin X contains 64,407 bases and maps to human chromosome 12p11.1. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

REFERENCES

1. Mikoshiba, K., et al. 1999. Role of synaptotagmin, a Ca^{2+} and inositol polyphosphate binding protein, in neurotransmitter release and neurite outgrowth. Chem. Phys. Lipids 98: 59-67.
2. Fukuda, M., et al. 1999. Conserved N-terminal cysteine motif is essential for homo- and heterodimer formation of synaptotagmins III, V, VI, and X. J. Biol. Chem. 274: 31421-31427.
3. Delgado Carrasco, J., et al. 2001. Achondrogenesis type II-hypochondrogenesis: radiological features. Case report. An. Esp. Pediatr. 55: 553-557.
4. Yokoyama, T., et al. 2003. A case of Kniest dysplasia with retinal detachment and the mutation analysis. Am. J. Ophthalmol. 136: 1186-1188.
5. Zhao, E., et al. 2003. Cloning and characterization of human synaptotagmin 10 gene. DNA Seq. 14: 393-398.
6. Forzano, F., et al. 2007. A familial case of achondrogenesis type II caused by a dominant COL2A1 mutation and "patchy" expression in the mosaic father. Am. J. Med. Genet. A 143A: 2815-2820.
7. Wainwright, H., et al. 2008. Visceral manifestations of hypochondrogenesis. Virchows Arch. 453: 203-207.
8. Lo, F.S., et al. 2009. High resolution melting analysis for mutation detection for PTPN11 gene: applications of this method for diagnosis of Noonan syndrome. Clin. Chim. Acta 409: 75-77.
9. Benussi, D.G., et al. 2009. Trisomy 12p and monosomy 4p: phenotype-genotype correlation. Genet. Test. Mol. Biomarkers 13: 199-204.

CHROMOSOMAL LOCATION

Genetic locus: SYT10 (human) mapping to 12p11.1; Syt10 (mouse) mapping to 15 E3.

SOURCE

Synaptotagmin X (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of Synaptotagmin X 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-169464 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synaptotagmin X (D-14) is recommended for detection of Synaptotagmin X 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); non cross-reactive with other Synaptotagmin family members.

Synaptotagmin X (D-14) is also recommended for detection of Synaptotagmin X in additional species, including equine and canine.

Suitable for use as control antibody for Synaptotagmin X siRNA (h): sc-96219, Synaptotagmin X siRNA (m): sc-153976, Synaptotagmin X shRNA Plasmid (h): sc-96219-SH, Synaptotagmin X shRNA Plasmid (m): sc-153976-SH, Synaptotagmin X shRNA (h) Lentiviral Particles: sc-96219-V and Synaptotagmin X shRNA (m) Lentiviral Particles: sc-153976-V.

Molecular Weight of Synaptotagmin X: 59 kDa.

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.

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.

PROTOCOLS

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