SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptotagmin X siRNA (h): sc-96219

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

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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.
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CHROMOSOMAL LOCATION

Genetic locus: SYT10 (human) mapping to 12p11.1.

PRODUCT

Synaptotagmin X siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Synaptotagmin X shRNA Plasmid (h): sc-96219-SH and Synaptotagmin X shRNA (h) Lentiviral Particles: sc-96219-V as alternate gene silencing products.

For independent verification of Synaptotagmin X (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96219A, sc-96219B and sc-96219C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Synaptotagmin X siRNA (h) is recommended for the inhibition of Synaptotagmin X expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Synaptotagmin X gene expression knockdown using RT-PCR Primer: Synaptotagmin X (h)-PR: sc-96219-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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