SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptotagmin XVI siRNA (m): sc-153982

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. Synaptotagmin XVI, also known as SYT16, Chr14Syt, STREP14, or Synaptotagmin XIV-related protein (SYT14L), is a 645 amino acid homodimeric protein belonging to the Synaptotagmin family. Synaptotagmin XVI contains two C2 domains, which binds liposomes consisting of phosphatidylcholine and phosphatidylserine, but lacks the N-terminal transmembrane domain present in other Synaptotagmins. Expressed in brain, heart, and testis, Synaptotagmin XVI may be involved in Ca^{2+} independent trafficking and exocytosis of secretory vesicles in non-neuronal tissues. Existing as three alternatively spliced isoforms, the gene encoding Synaptotagmin XVI maps to human chromosome 14q23.2.

REFERENCES

1. Craxton, M. 2001. Genomic analysis of synaptotagmin genes. Genomics 77: 43-49.
2. Fukuda, M. 2003. Molecular cloning, expression, and characterization of a novel class of synaptotagmin (Syt XIV) conserved from *Drosophila* to humans. J. Biochem. 133: 641-649.
3. Heilig, R., Eckenberg, R., Petit, J.L., Fonknechten, N., Da Silva, C., Cattolico, L., Levy, M., Barbe, V., de Berardinis, V., Ureta-Vidal, A., Pelletier, E., Vico, V., Anthouard, V., Rowen, L., Madan, A., Qin, S., et al. 2003. The DNA sequence and analysis of human chromosome 14. Nature 421: 601-607.
4. Craxton, M. 2004. Synaptotagmin gene content of the sequenced genomes. BMC Genomics 5: 43.
5. Montes, M., Fuson, K.L., Sutton, R.B. and Robert, J.J. 2006. Purification, crystallization and X-ray diffraction analysis of human synaptotagmin 1 C2A-C2B. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 62: 926-929.
6. Wan, C., Kiessling, V., Cafiso, D.S. and Tamm, L.K. 2011. Partitioning of synaptotagmin I C2 domains between liquid-ordered and liquid-disordered inner leaflet lipid phases. Biochemistry 50: 2478-2485.
7. Matsuoka, H., Harada, K., Nakamura, J., Fukuda, M. and Inoue, M. 2011. Differential distribution of synaptotagmin-1, -4, -7, and -9 in rat adrenal chromaffin cells. Cell Tissue Res. 344: 41-50.
8. Gregory, F.D. and Quiñones, P.M. 2011. Deciphering the roles of C2-domain-containing proteins (synaptotagmins and otoferlin) in the inner ear. J. Neurosci. 31: 4765-4767.

CHROMOSOMAL LOCATION

Genetic locus: Syt16 (mouse) mapping to 12 C3.

PROTOCOLS

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

PRODUCT

Synaptotagmin XVI siRNA (m) 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 XVI shRNA Plasmid (m): sc-153982-SH and Synaptotagmin XVI shRNA (m) Lentiviral Particles: sc-153982-V as alternate gene silencing products.

For independent verification of Synaptotagmin XVI (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153982A, sc-153982B and sc-153982C.

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 XVI siRNA (m) is recommended for the inhibition of Synaptotagmin XVI expression in mouse 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 XVI gene expression knockdown using RT-PCR Primer: Synaptotagmin XVI (m)-PR: sc-153982-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.