SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptoporin siRNA (h): sc-61626

BACKGROUND

Synaptic vesicle recycling involves numerous proteins that contribute to the formation and trafficking of the SNARE complexes throughout the cell. Synaptoporin, also designated synaptophysin 2, is an integral membrane protein of small synaptic vesicles that belongs to the synaptophysin/synaptobrevin family. Synaptoporin is highly homologus to Synaptophysin 1 and both Synaptoporin and synaptophysin 1 contain four transmembrane domains and a short cytoplasmic tail. The Synaptoporin protein also contains one MARVEL domain, a membrane-associating domain found in lipid-associating proteins, and displays calcium-binding activity which may be localized to its cytoplasmic tail. Syntaphilin, synaptophysin and Synaptoporin regulate the formation of the vesicles by competing with components of the SNARE complexes to respectively inhibit either the assembly or the secretion of the synaptic vesicles.

REFERENCES

1. Leube, R.E., et al. 1988. Synaptophysin: molecular organization and mRNA expression as determined from cloned cDNA. EMBO J. 6: 3261-3268.
2. Singec, I., et al. 2002. Synaptic vesicle protein Synaptoporin is differently expressed by subpopulations of mouse hippocampal neurons. J. Comp. Neurol. 452: 139-153.
3. Jinno, S., et al. 2003. Heterogeneous expression of the cholecystokinin-like immunoreactivity in the mouse hippocampus, with special reference to the dorsoventral difference. Neuroscience 122: 869-884.
4. Dai, J., et al. 2003. Cloning and sequence analysis of the human cDNA encoding the Synaptoporin δ, a highly conservative synaptic vesicle protein. Mol. Biol. Rep. 30: 185-191.

CHROMOSOMAL LOCATION

Genetic locus: SYNPR (human) mapping to 3p14.2.

PRODUCT

Synaptoporin 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 Synaptoporin shRNA Plasmid (h): sc-61626-SH and Synaptoporin shRNA (h) Lentiviral Particles: sc-61626-V as alternate gene silencing products.

For independent verification of Synaptoporin (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-61626A, sc-61626B and sc-61626C.

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

Synaptoporin siRNA (h) is recommended for the inhibition of Synaptoporin 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.

GENE EXPRESSION MONITORING

Synaptoporin (C-9): sc-376761 is recommended as a control antibody for monitoring of Synaptoporin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Synaptoporin gene expression knockdown using RT-PCR Primer: Synaptoporin (h)-PR: sc-61626-PR (20 µl, 548 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Vestergaard, C., et al. 2004. TARC augments TNF-α-induced CTACK production in keratinocytes. Exp. Dermatol. 13: 551-557.

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.