SANTA CRUZ BIOTECHNOLOGY, INC.

Septin 4 siRNA (h): sc-36476

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The Power to Question

BACKGROUND

The septins are a family of GTPase enzymes, some of which are required for cytokinesis and others of which are associated with exocytosis. Members of the septin family can form heteropolymer complexes and also play a role in the organization of new growth in organisms. The transcriptional regulation of all septins is complex, resulting in alternatively spliced variants. At least three septins (Septin 1, 2 and 4) are associated with a Tau-based paired helical filament core and may contribute to the formation of neurofibrillary tangles (NFTs) as integral constituents of paired helical filaments. Septin 3 (G-Septin), a GTP-binding protein, is highly expressed in brain and is regulated by protein kinase G in neurons. The human SEPT4 gene (also known as H5, PNUTL2, CDCrREL-2, ARTS, CE5B3 and MART) encodes ARTS (for apoptosis-related protein in the TGFβ signaling pathway), which is expressed in many cells and acts to enhance cell death induced by TGFβ or, to a lesser extent, by other apoptotic agents. ARTS is localized to mitochondria and translocates to the nucleus when apoptosis occurs. Septin 5 is a major form of CDCREL-1 septin in the adult neocortex of mammals. Human Septin 6 protein contains an ATP-GTP binding motif and three nuclear targeting sequences in its C-terminus. Septin 6 is the third septin member (in addition to hCDCREL and MSF) that is fused to the MLL protein.

REFERENCES

1. Kinoshita, A., et al. 1998. Identification of septins in neurofibrillary tangles in Alzheimer's disease. Am. J. Pathol. 153: 1551-1560.
2. Xue, J., et al. 2000. Phosphorylation of a new brain-specific septin, G-Septin, by cGMP-dependent protein kinase. J. Biol. Chem. 275: 10047-10056.
3. Larisch, S., et al. 2000. A novel mitochondrial septin-like protein, ARTS, mediates apoptosis dependent on its P-loop motif. Nat. Cell Biol. 2: 915-921.
4. Toda, S., et al. 2000. Reciprocal expression of infant- and adult-preferring transcripts of CDCREL-1 septin gene in the rat neocortex. Biochem. Biophys. Res. Commun. 273: 723-728.
5. Jackisch, B.O., et al. 2000. Alternative exon usage of rat septins. Biochem. Biophys. Res. Commun. 275: 180-188.
6. Borkhardt, A., et al. 2001. An ins(X;11)(q24;q23) fuses the MLL and the Septin 6/KIAA0128 gene in an infant with AML-M2. Genes Chromosomes Cancer 32: 82-88.
7. Momany, M., et al. 2001. Characterization of the *Aspergillus nidulans* septin (asp) gene family. Genetics 157: 969-977.

CHROMOSOMAL LOCATION

Genetic locus: SEPT4 (human) mapping to 17q22.

PROTOCOLS

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

PRODUCT

Septin 4 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 Septin 4 shRNA Plasmid (h): sc-36476-SH and Septin 4 shRNA (h) Lentiviral Particles: sc-36476-V as alternate gene silencing products.

For independent verification of Septin 4 (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-36476A, sc-36476B and sc-36476C.

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

Septin 4 siRNA (h) is recommended for the inhibition of Septin 4 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 Septin 4 gene expression knockdown using RT-PCR Primer: Septin 4 (h)-PR: sc-36476-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.