SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA6C siRNA (h): sc-76472

BACKGROUND

Semaphorins are a family of cell surface and secreted proteins involved in neural development that are conserved from insects to humans. Members of this family are approximately 750 amino acids in length (including signal sequences) and are defined by a conserved extracellular "semaphorin" domain of approximately 500 amino acids containing 14-16 cysteines, blocks of conserved sequences and no obvious repeats. The transmembrane semaphorins are characterized by an additional 80 amino acid transmembrane domain and an 80-110 amino acid cytoplasmic domain. SEMA6C, also known as SEMA Y, is a transmembrane protein expressed in fetal brain and adult skeletal muscle. Three isoforms of this semaphorin exist due to alternative splicing: SEMA6C 1, SEMA6C 2 and SEMA6C 3. The extracellular domain of SEMA6C induces growth cone collapse of dorsal root ganglion and plays a role in generation or stability of entorhino-hippocampal synapses.

REFERENCES

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2. Qu, X., et al. 2002. Identification, characterization, and functional study of the two novel human members of the semaphorin gene family. J. Biol. Chem. 277: 35574-35585.
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4. Bahi, A. and Dreyer, J.L. 2005. Cocaine-induced expression changes of axon guidance molecules in the adult rat brain. Mol. Cell. Neurosci. 28: 275-291.
5. Blais, A., et al. 2005. An initial blueprint for myogenic differentiation. Genes Dev. 19: 553-569.
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7. Frank, E. 2006. Axon guidance in the spinal cord: choosin' by exclusion. Neuron 52: 745-746.
8. Yoshida, Y., et al. 2006. PlexinA1 signaling directs the segregation of proprioceptive sensory axons in the developing spinal cord. Neuron 52: 775-788.

CHROMOSOMAL LOCATION

Genetic locus: SEMA6C (human) mapping to 1q21.3.

PRODUCT

SEMA6C 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 SEMA6C shRNA Plasmid (h): sc-76472-SH and SEMA6C shRNA (h) Lentiviral Particles: sc-76472-V as alternate gene silencing products.

For independent verification of SEMA6C (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-76472A, sc-76472B and sc-76472C.

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

SEMA6C siRNA (h) is recommended for the inhibition of SEMA6C 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

SEMA6C (Ex-14): sc-74277 is recommended as a control antibody for monitoring of SEMA6C 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SEMA6C gene expression knockdown using RT-PCR Primer: SEMA6C (h)-PR: sc-76472-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.