SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA4F siRNA (m): sc-62997

BACKGROUND

Semaphorins are a family of cell surface and secreted proteins that are conserved from insects to humans. Members of this family of proteins 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. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA4F (semaphorin-4F), also known as SEMAM, SEMAW or PRO2353, is a 770 amino acid member of the semaphorin family. Localized to the membrane, SEMA4F is a single-pass type I protein that is involved in growth cone collapse of retinal ganglion-cell axons. SEMA4F is highly expressed in postnatal brain and lung and contains one immunogloblin-like (Ig-like) domain, one PSI domain and one semaphorin domain. Two isoforms exist due to alternative splicing events.

REFERENCES

1. Encinas, J.A., et al. 1999. Cloning, expression, and genetic mapping of Sema W, a member of the semaphorin family. Proc. Natl. Acad. Sci. USA 96: 2491-2496.
2. Schultze, W., et al. 2001. Semaphorin4F interacts with the synapse-associated protein SAP90/PSD-95. J. Neurochem. 78: 482-489.
3. Francks, C., et al. 2002. Fine mapping of the chromosome 2p12-16 dyslexia susceptibility locus: quantitative association analysis and positional candidate genes SEMA4F and OTX1. Psychiatr. Genet. 12: 35-41.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603706. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Lindholm, T., et al. 2004. Semaphorin and neuropilin expression in motoneurons after intraspinal motoneuron axotomy. Neuroreport 15: 649-654.

CHROMOSOMAL LOCATION

Genetic locus: Sema4f (mouse) mapping to 6 C3.

PRODUCT

SEMA4F 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 SEMA4F shRNA Plasmid (m): sc-62997-SH and SEMA4F shRNA (m) Lentiviral Particles: sc-62997-V as alternate gene silencing products.

For independent verification of SEMA4F (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-62997A, sc-62997B and sc-62997C.

PROTOCOLS

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

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

SEMA4F siRNA (m) is recommended for the inhibition of SEMA4F 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 60 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 SEMA4F gene expression knockdown using RT-PCR Primer: SEMA4F (m)-PR: sc-62997-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.