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SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA3C siRNA (m): sc-44381

BACKGROUND

SEMA3C (also designated semaphorin 3C, semaphorin E, SEMAE, SemE, sema domain, immunoglobulin domain (Ig) and short basic domain, secreted) is a ubiquitous protein that mediates axonal guidance, repulsive gradients, induction of growth cone collapse and cell survival/death. Secreted SEMA3C favors survival and neuritogenesis of cultured cerebellar granule neurons (CGNs). SEMA3C from macrophages and fibroblasts that selectively directs against sympathetic nerve fibers may be one element responsible for reduced sympathetic innervation in rheumatoid arthritis tissue. SEMA3C mutant mice die within hours after birth from congenital cardiovascular defects consisting of interruption of the aortic arch and improper septation of the cardiac outflow tract. SEMA3C is expressed in the cardiac outflow tract as neural crest cells and promotes crest cell migration into the proximal cardiac outflow tract. Semaphorins constitute a family of molecules sharing a common extracellular domain (semaphorin domain). The family includes several types of secreted and membrane-associated molecules that are grouped into eight subclasses (subclasses 1-7 and viral semaphorins).

REFERENCES

1. Kolodkin, A.L., et al. 1993. The Semaphorin genes encode a family of transmembrane and secreted growth cone guidance molecules. Cell 75: 1389-1399.
2. Puschel, A.W., et al. 1995. Murine Semaphorin D/Collapsin is a member of a diverse gene family and creates domains inhibitory for axonal extension. Neuron 14: 941-948.
3. Dodd, J., et al. 1995. Axon guidance: a compelling case for repelling growth cones. Cell 81: 471-474.
4. Matthes, D.J., et al. 1995. Semaphorin II can function as a selective inhibitor of specific synaptic arborizations. Cell 81: 631-639.
5. Messersmith, E.K., et al. 1995. Semaphorin III can function as a selective chemorepellent to pattern sensory projections in the spinal cord. Neuron 14: 949-959.
6. Wright, D.E., et al. 1995. The guidance molecule Semaphorin III is expressed in regions of spinal cord and periphery avoided by growing sensory axons. J. Comp. Neurol. 361: 321-333.

CHROMOSOMAL LOCATION

Genetic locus: Sema3c (mouse) mapping to 5 A3.

PRODUCT

SEMA3C 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 SEMA3C shRNA Plasmid (m): sc-44381-SH and SEMA3C shRNA (m) Lentiviral Particles: sc-44381-V as alternate gene silencing products.

For independent verification of SEMA3C (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-44381A, sc-44381B and sc-44381C.

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

SEMA3C siRNA (m) is recommended for the inhibition of SEMA3C 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 SEMA3C gene expression knockdown using RT-PCR Primer: SEMA3C (m)-PR: sc-44381-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.