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SEMA3G siRNA (m): sc-153332

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. The transmembrane semaphorins are characterized by an additional 80 amino acid transmembrane domain and an 80-110 amino acid cytoplasmic domain. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA3G (semaphorin-3G), a member of the semaphorin family, is a 782 amino acid secreted protein containing one Sema domain and an Ig-like C2-type (immunoglobulin-like) domain. SEMA3G has possible chemorepulsive activities for sympathetic axons and is encoded by a gene that maps to human chromosome 3p21.1.

REFERENCES

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3. Taniguchi, M., et al. 2005. Identification and characterization of a novel member of murine semaphorin family. *Genes Cells* 10: 785-792.
4. Karayan-Tapon, L., et al. 2008. Semaphorin, neuropilin and VEGF expression in glial tumours: SEMA3G, a prognostic marker? *Br. J. Cancer* 99: 1153-1160.
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7. Kutschera, S., et al. 2011. Differential endothelial transcriptomics identifies semaphorin 3G as a vascular class 3 semaphorin. *Arterioscler. Thromb. Vasc. Biol.* 31: 151-159.

CHROMOSOMAL LOCATION

Genetic locus: Sema3g (mouse) mapping to 14 B.

PRODUCT

SEMA3G 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SEMA3G shRNA Plasmid (m): sc-153332-SH and SEMA3G shRNA (m) Lentiviral Particles: sc-153332-V as alternate gene silencing products.

For independent verification of SEMA3G (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-153332A, sc-153332B and sc-153332C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SEMA3G siRNA (m) is recommended for the inhibition of SEMA3G 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 μ M in 66 μ l. 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 SEMA3G gene expression knockdown using RT-PCR Primer: SEMA3G (m)-PR: sc-153332-PR (20 μ l). 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.