



VEGF-B siRNA (h): sc-39840

BACKGROUND

The onset of angiogenesis is believed to be an early event in tumorigenesis and may facilitate tumor progression and metastasis. Several growth factors with angiogenic activity have been described and include fibroblast growth factor (FGF), platelet derived growth factor (PDGF) and vascular endothelial growth factors (VEGFs). The VEGF protein family is comprised of VEGF, VEGF-B, VEGF-C and VEGF-D, all of which may exhibit angiogenic function *in vivo*. VEGF-B, which exists as two alternatively spliced isoforms known as VEGF-B167 and VEGF-B186, is abundantly expressed in heart and skeletal muscle and is frequently co-expressed with VEGF. VEGF-C binds to and specifically activates Flt-4 and Flk-1. The genes that encode human VEGF-B and VEGF-C have been localized to chromosomes 11q13.1 and 4q34, respectively.

REFERENCES

1. Folkman, J., et al. 1989. Induction of angiogenesis during the transition from hyperplasia to neoplasia. *Nature* 339: 58-61.
2. Ferrara, N., et al. 1991. The vascular endothelial growth factor family of polypeptides. *J. Cell. Biochem.* 47: 211-218.
3. Plate, K.H., et al. 1992. Vascular endothelial growth factor is a potential tumour angiogenesis factor in human gliomas *in vivo*. *Nature* 359: 845-848.
4. Breier, G., et al. 1992. Expression of vascular endothelial growth factor during embryonic angiogenesis and endothelial cell differentiation. *Development* 114: 521-532.
5. Berse, B., et al. 1992. Vascular permeability factor (vascular endothelial growth factor) gene is expressed differentially in normal tissues, macrophages, and tumors. *Mol. Biol. Cell* 3: 211-220.
6. Olofsson, B., et al. 1996. Vascular endothelial growth factor B, a novel growth factor for endothelial cells. *Proc. Natl. Acad. Sci. USA* 93: 2576-2581.
7. Joukov, V., et al. 1996. A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt-4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases. *EMBO J.* 15: 290-298.

CHROMOSOMAL LOCATION

Genetic locus: VEGFB (human) mapping to 11q13.1.

PRODUCT

VEGF-B 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VEGF-B shRNA Plasmid (h): sc-39840-SH and VEGF-B shRNA (h) Lentiviral Particles: sc-39840-V as alternate gene silencing products.

For independent verification of VEGF-B (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-39840A, sc-39840B and sc-39840C.

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

VEGF-B siRNA (h) is recommended for the inhibition of VEGF-B 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 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.

GENE EXPRESSION MONITORING

VEGF-B (RM0008-6E72): sc-101582 is recommended as a control antibody for monitoring of VEGF-B 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 VEGF-B gene expression knockdown using RT-PCR Primer: VEGF-B (h)-PR: sc-39840-PR (20 μ l, 463 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ali, J., et al. 2023. Neuroprotective effects of N-methyl-(2S, 4R)-trans-4-hydroxy-L-proline (NMP) against amyloid- β -induced Alzheimer's disease mouse model. *Nutrients* 15: 4986.
2. Wang, L., et al. 2025. The molecular mechanism of gemcitabine in inhibiting the HIF-1 α /VEGFB/FGF2/FGFR1 signaling pathway for ovarian cancer treatment. *Discov. Oncol.* 16: 3.

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.