

VEGF-D siRNA (h): sc-39844

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. These include fibroblast growth factor (FGF), platelet derived growth factor (PDGF) and vascular endothelial growth factor (VEGF). Several forms of VEGF have been identified, including VEGF, VEGF-B, VEGF-C and VEGF-D (also designated FIGF). Characteristic of VEGF proteins, the central region of VEGF-D contains eight cysteine residues. These residues are essential for homodimerization. VEGF-D may play a role in tumor progression, as it is induced by c-Fos, which is required for conversion of early stage tumors to malignant tumors. It has been observed that overexpression of VEGF-D induces morphological changes in fibroblasts.

REFERENCES

1. Folkman, J., et al. 1987. Angiogenic factors. *Science* 235: 442-447.
2. Folkman, J., et al. 1989. Induction of angiogenesis during the transition from hyperplasia to neoplasia. *Nature* 339: 58-61.
3. Bouck, N. 1990. Tumor angiogenesis: the role of oncogenes and tumor suppressor genes. *Cancer Cells* 2: 179-185.
4. Ferrara, N., et al. 1991. The vascular endothelial growth factor family of polypeptides. *J. Cell Biochem.* 47: 211-218.
5. Orlandini, M., et al. 1996. Identification of a c-Fos-induced gene that is related to the platelet-derived growth factor/vascular endothelial growth factor family. *Proc. Natl. Acad. Sci. USA* 93: 11675-11680.
6. Yamada, Y., et al. 1997. Molecular cloning of a novel vascular endothelial growth factor, VEGF-D. *Genomics* 42: 483-488.

CHROMOSOMAL LOCATION

Genetic locus: FIGF (human) mapping to Xp22.2.

PRODUCT

VEGF-D 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-D shRNA Plasmid (h): sc-39844-SH and VEGF-D shRNA (h) Lentiviral Particles: sc-39844-V as alternate gene silencing products.

For independent verification of VEGF-D (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-39844A, sc-39844B and sc-39844C.

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-D siRNA (h) is recommended for the inhibition of VEGF-D 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-D (C-12): sc-373866 is recommended as a control antibody for monitoring of VEGF-D 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor VEGF-D gene expression knockdown using RT-PCR Primer: VEGF-D (h)-PR: sc-39844-PR (20 μ l, 498 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, Y.H., et al. 2008. Up-regulation of vascular endothelial growth factor-D expression in clear cell renal cell carcinoma by CD74: a critical role in cancer cell tumorigenesis. *J. Immunol.* 181: 6584-6594.

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.