SANTA CRUZ BIOTECHNOLOGY, INC.

VEGF siRNA (h): sc-29520

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 factors (FGFs), platelet derived growth factor (PDGF) and vascular endothelial growth factor (VEGF). VEGF is a dimeric glycoprotein with structural homology to PDGF. Several variants of VEGF have been described that arise by alternative mRNA splicing. It has been speculated that VEGF may function as a tumor angiogenesis factor *in vivo* because the expression pattern of VEGF is consistent with a role in embryonic angiogenesis. VEGF mRNA is formed in some primary tumors, VEGF is produced by tumor cell lines *in vitro* and VEGF mitogenic activity appears to be restricted to endothelial cells. A member of the PDGF receptor family, Flt, has been identified as a high-affinity receptor for VEGF.

CHROMOSOMAL LOCATION

Genetic locus: VEGFA (human) mapping to 6p21.1.

PRODUCT

VEGF siRNA (h) is a target-specific 19-25 nt siRNA 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 VEGF shRNA Plasmid (h): sc-29520-SH and VEGF shRNA (h) Lentiviral Particles: sc-29520-V as alternate gene silencing 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

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

GENE EXPRESSION MONITORING

VEGF (C-1): sc-7269 is recommended as a control antibody for monitoring of VEGF 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 gene expression knockdown using RT-PCR Primer: VEGF (h)-PR: sc-29520-PR (20 µl, 398 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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3. Chintalapudi, M.R., et al. 2008. Cyr61/CCN1 and CTGF/CCN2 mediate the proangiogenic activity of VHL-mutant renal carcinoma cells. Carcinogenesis 29: 696-703.
4. Jia, H., et al. 2010. Neuropilin-1 antagonism in human carcinoma cells inhibits migration and enhances chemosensitivity. Br. J. Cancer 102: 541-552.
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6. Kim, E.K., et al. 2013. Modulation of bevacizumab-induced toxicity for cultured human corneal fibroblasts. Invest. Ophthalmol. Vis. Sci. 54: 3922-3931.
7. Wang, G., et al. 2014. Mutation of isocitrate dehydrogenase 1 induces glioma cell proliferation via nuclear factor-κB activation in a hypoxia-inducible factor 1-α dependent manner. Mol. Med. Rep. 9: 1799-1805.
8. Jin, X., et al. 2015. Caveolin-1 mediates tissue plasminogen activator-induced MMP-9 up-regulation in cultured brain microvascular endothelial cells. J. Neurochem. 132: 724-730.
9. Liu, J., et al. 2016. Nitric oxide interacts with caveolin-1 to facilitate autophagy-lysosome-mediated Claudin-5 degradation in oxygen-glucose deprivation-treated endothelial cells. Mol. Neurobiol. 53: 5935-5947.
10. Zhao, H., et al. 2018. VEGF mitigates histone-induced pyroptosis in the remote liver injury associated with renal allograft ischemia-reperfusion injury in rats. Am. J. Transplant. 18: 1890-1903.
11. Grun, D., et al. 2019. NRP-1 interacts with GIPC1 and SYX to activate p38 MAPK signaling and cancer stem cell survival. Mol. Carcinog. 58: 488-499.

RESEARCH USE

For research use only, not for use in diagnostic procedures.