

Fibronectin siRNA (h): sc-29315

BACKGROUND

Fibronectin is an extracellular matrix glycoprotein present on most cell surfaces, in extracellular fluids and in plasma. A high molecular weight heterodimeric protein, it was originally discovered as a protein missing from the surfaces of virus-transformed cells, and it has been shown to be involved in various functions including cell adhesion, cell motility and wound healing. Alternative splicing and glycosylation give rise to several different forms of Fibronectin, some of which exhibit restricted tissue distribution or association with malignancies. It has been shown that Myofibroblast phenotype formation correlates with the occurrence of glycosylated Fibronectin and Fibronectin splice variants in Dupuytren's disease.

CHROMOSOMAL LOCATION

Genetic locus: FN1 (human) mapping to 2q35.

PRODUCT

Fibronectin 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 Fibronectin shRNA Plasmid (h): sc-29315-SH and Fibronectin shRNA (h) Lentiviral Particles: sc-29315-V as alternate gene silencing products.

For independent verification of Fibronectin (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-29315A, sc-29315B and sc-29315C.

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

Fibronectin siRNA (h) is recommended for the inhibition of Fibronectin 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

Fibronectin (EP5): sc-8422 is recommended as a control antibody for monitoring of Fibronectin 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 Fibronectin gene expression knockdown using RT-PCR Primer: Fibronectin (h)-PR: sc-29315-PR (20 μ l, 422 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Koo, B.H., et al. 2010. Thrombin-dependent MMP-2 activity is regulated by heparan sulfate. *J. Biol. Chem.* 285: 41270-41279.
2. Li, G., et al. 2014. Feedback activation of Stat3 mediates trastuzumab resistance via upregulation of MUC1 and MUC4 expression. *Oncotarget* 5: 8317-8329.
3. Yi, W., et al. 2016. High expression of Fibronectin is associated with poor prognosis, cell proliferation and malignancy via the NF κ B/p53-apoptosis signaling pathway in colorectal cancer. *Oncol. Rep.* 36: 3145-3153.
4. Liu, Y., et al. 2018. BTB/POZ domain-containing protein 7 is inversely associated with Fibronectin expression in salivary adenoid cystic carcinoma. *Oral Surg. Oral Med. Oral Pathol. Oral Radiol.* 125: 468-477.
5. Huaman, J., et al. 2019. Fibronectin regulation of integrin B1 and SLUG in circulating tumor cells. *Cells* 8: 618.
6. Ou, Y.C., et al. 2019. Fibronectin promotes cell growth and migration in human renal cell carcinoma cells. *Int. J. Mol. Sci.* 20: 2792.
7. Yu, S., et al. 2020. GBP2 enhances glioblastoma invasion through Stat3/Fibronectin pathway. *Oncogene* 39: 5042-5055.
8. Huaman, J., et al. 2020. Circulating tumor cell migration requires Fibronectin acting through integrin B1 or SLUG. *Cells* 9: 1594.
9. Takahashi, M., et al. 2021. Fibronectin plays a major role in hypoxia-induced lenvatinib resistance in hepatocellular carcinoma PLC/PRF/5 cells. *Pharmazie*. 76: 594-601.

RESEARCH USE

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