

FNDC5 siRNA (h): sc-78601

BACKGROUND

Fibronectins are multi-domain glycoproteins that bind to a variety of substances including collagen, Actin, heparin, DNA, fibrin and Fibronectin receptors. They are involved in a diverse array of important functions such as blood coagulation, wound healing, cell adhesion, cell differentiation and migration. FNDC5 (Fibronectin type III domain containing 5), also known as FRCP2, is a 196 amino acid single-pass type I membrane protein that is imported in peroxisomes through the Peroxin 5 receptor pathway. Existing as four alternatively spliced isoforms, FNDC5 is encoded by a gene located on human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

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2. Dean, D.C., et al. 1987. Cloning and analysis of the promotor region of the human Fibronectin gene. *Proc. Natl. Acad. Sci. USA* 84: 1876-1880.
3. Leahy, D.J., et al. 1992. Structure of a Fibronectin type III domain from tenascin phased by MAD analysis of the selenomethionyl protein. *Science* 258: 987-991.
4. Little, E., et al. 1994. Tracing the spread of Fibronectin type III domains in bacterial glycohydrolases. *J. Mol. Evol.* 39: 631-643.
5. Blackwood, D.H., et al. 2001. Schizophrenia and affective disorders— cosegregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. *Am. J. Hum. Genet.* 69: 428-433.
6. Teufel, A., et al. 2002. Frp1 and Frp2, two novel Fibronectin type III repeat containing genes. *Gene* 297: 79-83.
7. Marzin, Y., et al. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.

CHROMOSOMAL LOCATION

Genetic locus: FNDC5 (human) mapping to 1p35.1.

PRODUCT

FNDC5 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 FNDC5 shRNA Plasmid (h): sc-78601-SH and FNDC5 shRNA (h) Lentiviral Particles: sc-78601-V as alternate gene silencing products.

For independent verification of FNDC5 (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-78601A, sc-78601B and sc-78601C.

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

FNDC5 siRNA (h) is recommended for the inhibition of FNDC5 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

FNDC5 (173G2P): sc-517622 is recommended as a control antibody for monitoring of FNDC5 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 FNDC5 gene expression knockdown using RT-PCR Primer: FNDC5 (h)-PR: sc-78601-PR (20 μ l, 462 bp). 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.