SANTA CRUZ BIOTECHNOLOGY, INC.

FNDC8 siRNA (m): sc-145216

BACKGROUND

Fibronectins are multi-domain glycoproteins that bind to a variety of substances including collagen, Actin, heparin, DNA, fibrin and fibronectin receptors. Fibronectins are involved in a diverse array of important functions such as blood coagulation, wound healing, cell adhesion, cell differentiation and migration. Fibronectin type-III domain containing proteins, such as cell surface receptors and cell adhesion molecules, mediate protein-protein interactions and are involved in multiple biological processes including tissue development and metastasis. FNDC8 (fibronectin type III domain containing 8) is a 324 amino acid protein containing one fibronectin type-III domain. Conserved in human, chimpanzee, canine, bovine, mouse and rat, FNDC8 is encoded by a gene located on human chromosome 17q12. Human chromosome 17 comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1.

REFERENCES

1. Kornblihtt, A.R., Umezawa, K., Vibe-Pedersen, K. and Baralle, F.E. 1985. Primary structure of human fibronectin: differential splicing may generate at least 10 polypeptides from a single gene. EMBO J. 4: 1755-1759.
2. Leahy, D.J., Hendrickson, W.A., Aukhil, I. and Erickson, H.P. 1992. Structure of a fibronectin type III domain from tenascin phased by MAD analysis of the selenomethionyl protein. Science 258: 987-991.
3. Potts, J.R. and Campbell, I.D. 1994. Fibronectin structure and assembly. Curr. Opin. Cell Biol. 6: 648-655.
4. Little, E., Bork, P. and Doolittle, R.F. 1994. Tracing the spread of fibronectin type III domains in bacterial glycohydrolases. J. Mol. Evol. 39: 631-643.
5. Carr, P.A., Erickson, H.P. and Palmer, A.G. 1997. Backbone dynamics of homologous fibronectin type III cell adhesion domains from fibronectin and tenascin. Structure 5: 949-959.
6. Teufel, A., Malik, N., Mukhopadhyay, M. and Westphal, H. 2002. Frcp1 and Frcp2, two novel fibronectin type III repeat containing genes. Gene 297: 79-83.
7. Strausberg, R.L., Feingold, E.A., Grouse, L.H., Derge, J.G., Klausner, R.D., Collins, F.S., Wagner, L., Shenmen, C.M., Schuler, G.D., Altschul, S.F., Zeeberg, B., Buetow, K.H., Schaefer, C.F., Bhat, N.K., Hopkins, R.F., et al. 2002. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences. Proc. Natl. Acad. Sci. USA 99: 16899-16903.
8. Carafoli, F., Saffell, J.L. and Hohenester, E. 2008. Structure of the tandem fibronectin type 3 domains of neural cell adhesion molecule. J. Mol. Biol. 377: 524-534.
9. Bloom, L. and Calabro, V. 2009. FN3: a new protein scaffold reaches the clinic. Drug Discov. Today 14: 949-955.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: Fndc8 (mouse) mapping to 11 C.

PRODUCT

FNDC8 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FNDC8 shRNA Plasmid (m): sc-145216-SH and FNDC8 shRNA (m) Lentiviral Particles: sc-145216-V as alternate gene silencing products.

For independent verification of FNDC8 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-145216A, sc-145216B and sc-145216C.

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

FNDC8 siRNA (m) is recommended for the inhibition of FNDC8 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FNDC8 gene expression knockdown using RT-PCR Primer: FNDC8 (m)-PR: sc-145216-PR (20 µl). 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.