SANTA CRUZ BIOTECHNOLOGY, INC.

Fibulin-4 siRNA (h): sc-75017

BACKGROUND

Fibulin proteins contribute to normal development of elastic fiber systems in various types of organs that require elasticity, such as vasculature, lung and skin. Fibulin-4, also known as EFEMP2 (EGF-containing fibulin-like extracellular matrix protein 2), MBP1 or UPH1 is a 443 amino acid secreted protein that contains six EGF-like calcium-binding domains and belongs to the fibulin family. Expressed ubiquitously with highest expression in heart, Fibulin-4 is essential for connective tissue development and elastic fiber formation, and may also play an important role in vascular patterning and collagen biosynthesis. Defects in the gene encoding Fibulin-4 are associated with autosomal recessive cutis laxa type I (CL type I), a connective tissue disorder that is inherited in both an autosomal dominant and an autosomal recessive manner and is characterized by inelastic tissue in all affected areas of the body.

REFERENCES

1. Giltay, R., et al. 1999. Sequence, recombinant expression and tissue localization of two novel extracellular matrix proteins, Fibulin-3 and Fibulin-4. Matrix Biol. 18: 469-480.
2. Katsanis, N., et al. 2000. Isolation of a paralog of the Doyne honeycomb retinal dystrophy gene from the multiple retinopathy critical region on 11q13. Hum. Genet. 106: 66-72.
3. Gallagher, W.M., et al. 2001. Human Fibulin-4: analysis of its biosynthetic processing and mRNA expression in normal and tumour tissues. FEBS Lett. 489: 59-66.
4. Toto, L., et al. 2002. Genetic heterogeneity in Malattia Leventinese. Clin. Genet. 62: 399-403.
5. Hucthagowder, V., et al. 2006. Fibulin-4: a novel gene for an autosomal recessive cutis laxa syndrome. Am. J. Hum. Genet. 78: 1075-1080.
6. Xiang, Y., et al. 2006. Fibulin-4 is a target of autoimmunity predominantly in patients with osteoarthritis. J. Immunol. 176: 3196-3204.
7. McLaughlin, P.J., et al. 2006. Targeted disruption of Fibulin-4 abolishes elastogenesis and causes perinatal lethality in mice. Mol. Cell. Biol. 26: 1700-1709.

CHROMOSOMAL LOCATION

Genetic locus: EFEMP2 (human) mapping to 11q13.1.

PRODUCT

Fibulin-4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Fibulin-4 shRNA Plasmid (h): sc-75017-SH and Fibulin-4 shRNA (h) Lentiviral Particles: sc-75017-V as alternate gene silencing products.

For independent verification of Fibulin-4 (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-75017A, sc-75017B and sc-75017C.

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

Fibulin-4 siRNA (h) is recommended for the inhibition of Fibulin-4 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

Fibulin-4 (2C8): sc-293492 is recommended as a control antibody for monitoring of Fibulin-4 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Fibulin-4 gene expression knockdown using RT-PCR Primer: Fibulin-4 (h)-PR: sc-75017-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Choudhury, R., et al. 2009. Differential regulation of elastic fiber formation by Fibulin-4 and -5. J. Biol. Chem. 284: 24553-24567.

RESEARCH USE

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