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SANTA CRUZ BIOTECHNOLOGY, INC.

Matrilin-4 siRNA (m): sc-149298

BACKGROUND

The matrilin family of secreted extracellular matrix proteins is comprised of Matrilin-1 through Matrilin-4. Matrilin-1 is a homotrimer that binds to collagen and is a component of the extracellular matrix of nonarticular cartilage. It is secreted primarily by chondrocytes in a characteristic spatial, temporal and developmental stage-specific pattern during skeletogenesis. Matrilin-2 is a secreted protein involved in matrix assembly. Matrilin-3 is a secreted protein expressed solely in cartilaginous tissues. It is important in the extracellular matrix of cartilage and in the formation of extracellular filamentous networks. Matrilin-4, expressed in embryonic kidney, lung and placenta, is a secreted protein important to the extracellular matrix of cartilage.

REFERENCES

1. Deak, F., et al. 1999. The matrilins: a novel family of oligomeric extracellular matrix proteins. Matrix Biol. 18: 55-64.
2. Segat, D., et al. 2000. Expression of matrilin-1, -2 and -3 in developing mouse limbs and heart. Matrix Biol. 19: 649-655.
3. Strusberg, I., et al. 2002. Association analysis of genotypic frequencies of Matrilin-1 gene in patients with osteoarthritis. Clin. Exp. Rheumatol. 20: 543-545.
4. Wiberg, C., et al. 2003. Complexes of Matrilin-1 and biglycan or decorin connect collagen VI microfibrils to both collagen II and aggrecan. J. Biol. Chem. 278: 37698-37704.
5. Ohno, S., et al. 2003. Immunohistochemical study of Matrilin-1 in arthritic articular cartilage of the mandibular condyle. J. Oral Pathol. Med. 32: 237-242.
6. Mann, H.H., et al. 2004. Interactions between the cartilage oligomeric matrix protein and matrilins. Implications for matrix assembly and the pathogenesis of chondrodysplasias. J. Biol. Chem. 279: 25294-25298.
7. Karcagi, I., et al. 2004. Functional analysis of the regulatory regions of the Matrilin-1 gene in transgenic mice reveals modular arrangement of tissue-specific control elements. Matrix Biol. 22: 605-618.

CHROMOSOMAL LOCATION

Genetic locus: Matn4 (mouse) mapping to 2 H3.

PRODUCT

Matrilin-4 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 Matrilin-4 shRNA Plasmid (m): sc-149298-SH and Matrilin-4 shRNA (m) Lentiviral Particles: sc-149298-V as alternate gene silencing products.

For independent verification of Matrilin-4 (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-149298A, sc-149298B and sc-149298C.

RESEARCH USE

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

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

Matrilin-4 siRNA (m) is recommended for the inhibition of Matrilin-4 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.

GENE EXPRESSION MONITORING

Matrilin-4 (B-1): sc-374652 is recommended as a control antibody for monitoring of Matrilin-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 Matrilin-4 gene expression knockdown using RT-PCR Primer: Matrilin-4 (m)-PR: sc-149298-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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