



Lumican siRNA (h): sc-43901

BACKGROUND

Lumican, a member of the small leucine-rich proteoglycans (SLRPs) family of proteins, is a keratan sulfate proteoglycan present in large quantities in the corneal stroma and in interstitial collagenous matrices of the heart, aorta, skeletal muscle, skin, and intervertebral discs. During collagen fibrillogenesis, lumican regulates the assembly of collagens into higher order fibrils, limiting the growth of fibrils in diameter. Lumican is present in the extracellular matrix of human articular cartilage at all ages, with a far greater abundance in the adult. The gene encoding human lumican maps to chromosome 12q21.33.

REFERENCES

1. Chakravarti, S., et al. 1995. Primary structure of human lumican (keratan sulfate proteoglycan) and localization of the gene (LUM) to chromosome 12q21.3-q22. *Genomics* 3: 481-488.
2. Chakravarti, S., et al. 1995. Localization of mouse lumican (keratan sulfate proteoglycan) to distal chromosome 10. *Mamm. Genome* 6: 367-368.
3. Grover, J., et al. 1995. The human lumican gene. Organization, chromosomal location, and expression in articular cartilage. *J. Biol. Chem.* 37: 21942-21949.
4. Jepsen, K., et al. 2002. A syndrome of joint laxity and impaired tendon integrity in lumican- and fibromodulin-deficient mice. *J. Biol. Chem.* 38: 35532-35540.
5. Kao, W.W., et al. 2002. Roles of lumican and keratocan on corneal transparency. *Glycoconj. J.* 19: 275-285.
6. Chakravarti, S. 2002. Functions of lumican and fibromodulin: lessons from knockout mice. *Glycoconj. J.* 19: 287-293.
7. Vij, N., et al. 2005. Lumican regulates corneal inflammatory responses by modulating Fas-Fas ligand signaling. *Invest. Ophthalmol. Vis. Sci.* 46: 88-95.

CHROMOSOMAL LOCATION

Genetic locus: LUM (human) mapping to 12q21.33.

PRODUCT

Lumican siRNA (h) is a target-specific 19-25 nt siRNA 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 Lumican shRNA Plasmid (h): sc-43901-SH and Lumican shRNA (h) Lentiviral Particles: sc-43901-V as alternate gene silencing products.

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

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

Lumican (B-9): sc-166871 is recommended as a control antibody for monitoring of Lumican 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 Lumican gene expression knockdown using RT-PCR Primer: Lumican (h)-PR: sc-43901-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Salcher, S., et al. 2019. Repaglinide silences the FOXO3/Lumican axis and represses the associated metastatic potential of neuronal cancer cells. *Cells* 9: 1.

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.