SANTA CRUZ BIOTECHNOLOGY, INC.

COL6A4 siRNA (m): sc-108135

BACKGROUND

Collagens (COLs) are fibrous, extracellular matrix proteins with high tensile strength that function as the major components of connective tissue, such as tendons and cartilage. All COL proteins contain a triple helix domain and frequently show lateral self-association in order to form complex connective tissues. There are several types of COL proteins, including fibril-forming interstitial COLs (types I, II, III and V), basement membrane COLs (type IV) and beaded filament COLs (type VI). COL6A4 (collagen, type VI, α 4), also known as Dvwa, is a 2,309 amino acid secreted protein of the extracellular matrix that functions as a cell-binding protein. While nearly absent in adult tissues, COL6A4 is expressed in newborn sternum, lung, brain, intestine, skin and kidney. COL6A4 contains eight VWFA domains and is encoded by a gene that maps to murine chromosome 9 F1.

REFERENCES

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2. Chu, M.L., et al. 1989. Sequence analysis of α 1(VI) and α 2(VI) chains of human type VI collagen reveals internal triplication of globular domains similar to the A domains of von Willebrand factor and two α 2(VI) chain variants that differ in the carboxy terminus. EMBO J. 8: 1939-1946.
3. Saitta, B., et al. 1991. The exon organization of the triple-helical coding regions of the human α 1(VI) and α 2(VI) collagen genes is highly similar. Genomics 11: 145-153.
4. Kuo, H.J., et al. 1997. Type VI collagen anchors endothelial basement membranes by interacting with type IV collagen. J. Biol. Chem. 272: 26522-26529.
5. Gara, S.K., et al. 2008. Three novel collagen VI chains with high homology to the α3 chain. J. Biol. Chem. 283: 10658-10670.
6. Fitzgerald, J., et al. 2008. Three novel collagen VI chains, α4(VI), α5(VI), and α6(VI). J. Biol. Chem. 283: 20170-20180.
7. Nakajima, M., et al. 2011. Cloning and characterization of the osteoarthritis-associated gene DVWA. J. Bone Miner. Metab. 29: 300-308.

CHROMOSOMAL LOCATION

Genetic locus: Col6a4 (mouse) mapping to 9 F1.

PRODUCT

COL6A4 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 COL6A4 shRNA Plasmid (m): sc-108135-SH and COL6A4 shRNA (m) Lentiviral Particles: sc-108135-V as alternate gene silencing products.

For independent verification of COL6A4 (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-108135A, sc-108135B and sc-108135C.

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

COL6A4 siRNA (m) is recommended for the inhibition of COL6A4 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 COL6A4 gene expression knockdown using RT-PCR Primer: COL6A4 (m)-PR: sc-108135-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.

PROTOCOLS

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