SANTA CRUZ BIOTECHNOLOGY, INC.

COL4A1 siRNA (h): sc-43064

BACKGROUND

The extensive family of COL gene products (collagens) is composed of several chain types, including fibril-forming interstitial Collagens (Types I, II, III and V) and basement membrane collagens (Type IV), each type containing multiple isoforms. Collagens are fibrous, extracellular matrix proteins with high tensile strength and are the major components of connective tissue, such as tendons and cartilage. All collagens contain a triple helix domain and frequently show lateral self-association in order to form complex connective tissues. Several collagens also play a role in cell adhesion, important for maintaining normal tissue architecture and function.

REFERENCES

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5. Boskey, A.L., et al. 1999. Collagen and bone strength. J. Bone Miner. Res. 14: 330-335.
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7. Kalluri, R. 2002. Discovery of Type IV Collagen non-collagenous domains as novel integrin ligands and endogenous inhibitors of angiogenesis. Cold Spring Harb. Symp. Quant. Biol. 67: 255-266.
8. Pescucci, C., et al. 2003. Type IV Collagen related diseases. J. Nephrol. 16: 314-316.
9. Kim, S.J., et al. 2004. Effects of Type IV Collagen and laminin on the cryopreservation of human embryonic stem cells. Stem Cells 22: 950-961.

CHROMOSOMAL LOCATION

Genetic locus: COL4A1 (human) mapping to 13q34.

PRODUCT

COL4A1 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 COL4A1 shRNA Plasmid (h): sc-43064-SH and COL4A1 shRNA (h) Lentiviral Particles: sc-43064-V as alternate gene silencing products.

For independent verification of COL4A1 (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-43064A, sc-43064B and sc-43064C.

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

COL4A1 siRNA (h) is recommended for the inhibition of COL4A1 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

COL4A1 (5E10): sc-517572 is recommended as a control antibody for monitoring of COL4A1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COL4A1 gene expression knockdown using RT-PCR Primer: COL4A1 (h)-PR: sc-43064-PR (20 µl, 571 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Öhlund, D., et al. 2013. Type IV collagen stimulates pancreatic cancer cell proliferation, migration, and inhibits apoptosis through an autocrine loop. BMC Cancer 13: 154.

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.