SANTA CRUZ BIOTECHNOLOGY, INC.

# COL12A1 siRNA (m): sc-72959

## BACKGROUND

Collagen Type XII is a 3,063 amino acid protein encoded by the human gene COL12A1. Collagen Type XII belongs to the fibril-associated collagens with interrupted helices (FACIT) family. Collagen Type XII is known to interact with type I collagen-containing fibrils. The COL1 domain is thought to be associated with the surface of the fibrils, while the COL2 and NC3 domains may be localized in the perifibrillar matrix. Collagen Type XII has three identified isoforms (named 1, 2 and 4). Isoform 1 is the long form of the protein, while 2 and 4 are missing sequences found in isoform 1. Collagen Type XII is found in Collagen Type I-containing tissues: both isoform 1 and isoform 2 appear in amnion, chorion, skeletal muscle, small intestine and cell culture of dermal fibroblasts, keratinocytes and endothelial cells. Only isoform 2 is found in lung, placenta, kidney and a squamous cell carcinoma cell line. Isoform 1 is also present in the corneal epithelial Bowman's membrane (BM) and the interfibrillar matrix of the corneal stroma, but it is not detected in the limbal BM.

## REFERENCES


1. Gerecke, D.R., et al. 1997. Complete primary structure of two splice variants of collagen XII, and assignment of $\alpha$1(XII) collagen (COL12A1), $\alpha$1(IX) collagen (COL9A1), and $\alpha$1(XIX) collagen (COL19A1) to human chromosome 6q12-q13. Genomics 41: 236-242.
2. Sumiyoshi, H., et al. 1997. Ubiquitous expression of the $\alpha$1(XIX) collagen gene (Col19a) during mouse embryogenesis becomes restricted to a few tissues in the adult organism. J. Biol. Chem. 272: 17104-17111.
3. Khaleduzzaman, M., et al. 1998. Structure of the human type XIX collagen (COL19A1) gene, which suggests it has arisen from an ancestor gene of the FACIT family. Genomics 45: 304-312.
4. Myers, J.C., et al. 2000. Up-regulation of type XIX collagen in rhabdomyosarcoma cells accompanies myogenic differentiation. Exp. Cell Res. 253: 587-598.
5. Sumiyoshi, H., et al. 2001. Embryonic expression of type XIX collagen is transient and confined to muscle cells. Dev. Dyn. 220: 155-162.
6. Amenta, P.S., et al. 2003. Loss of types XV and XIX collagen precedes basement membrane invasion in ductal carcinoma of the female breast. J. Pathol. 199: 298-308.


## CHROMOSOMAL LOCATION

Genetic locus: Col12a1 (mouse) mapping to 9 E1.

## PRODUCT

COL12A1 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 COL12A1 shRNA Plasmid (m): sc-72959-SH and COL12A1 shRNA (m) Lentiviral Particles: sc-72959-V as alternate gene silencing products.

For independent verification of COL12A1 (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-72959A, sc-72959B and sc-72959C.

## 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

COL12A1 siRNA (m) is recommended for the inhibition of Collagen Type XII 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 COL12A1 gene expression knockdown using RT-PCR Primer: COL12A1 (m)-PR: sc-72959-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.