SANTA CRUZ BIOTECHNOLOGY, INC.

COL12A1 (E-15): sc-68449

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 3 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

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2. Sumiyoshi, H., et al. 1997. Ubiquitous expression of the α1(XIX) collagen gene (Col19a1) 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.
7. Sumiyoshi, H., et al. 2004. Esophageal muscle physiology and morphogenesis require assembly of a collagen XIX-rich basement membrane zone. J. Cell Biol. 166: 591-600.
8. Sjöblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. Science 314: 268-274.

CHROMOSOMAL LOCATION

Genetic locus: COL12A1 (human) mapping to 6q13; Col12a1 (mouse) mapping to 9 E1.

SOURCE

COL12A1 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of COL12A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

COL12A1 (E-15) is recommended for detection of COL12A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

COL12A1 (E-15) is also recommended for detection of Collagen Type XII in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for COL12A1 siRNA (h): sc-72958, COL12A1 siRNA (m): sc-72959, COL12A1 shRNA Plasmid (h): sc-72958-SH, COL12A1 shRNA Plasmid (m): sc-72959-SH, COL12A1 shRNA (h) Lentiviral Particles: sc-72958-V and COL12A1 shRNA (m) Lentiviral Particles: sc-72959-V.

Molecular Weight of COL12A1: 333 kDa.

Positive Controls: CCD-1064Sk cell lysate: sc-2263.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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