

COL12A1 (A-11): sc-166020

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 perifrillar 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 $\alpha 1(\text{XII})$ Collagen (COL12A1), $\alpha 1(\text{IX})$ Collagen (COL9A1), and $\alpha 1(\text{XIX})$ Collagen (COL19A1) to human chromosome 6q12-q13. *Genomics* 41: 236-242.
2. Sumiyoshi, H., et al. 1997. Ubiquitous expression of the $\alpha 1(\text{XIX})$ Collagen gene (COL19A1) during mouse embryogenesis becomes restricted to a few tissues in the adult organism. *J. Biol. Chem.* 272: 17104-17111.

CHROMOSOMAL LOCATION

Genetic locus: COL12A1 (human) mapping to 6q13.

SOURCE

COL12A1 (A-11) is a mouse monoclonal antibody raised against amino acids 1861-2140 mapping within an internal region of Collagen Type XII of human origin.

PRODUCT

Each vial contains 200 μg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

COL12A1 (A-11) is available conjugated to agarose (sc-166020 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-166020 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166020 PE), fluorescein (sc-166020 FITC), Alexa Fluor[®] 488 (sc-166020 AF488), Alexa Fluor[®] 546 (sc-166020 AF546), Alexa Fluor[®] 594 (sc-166020 AF594) or Alexa Fluor[®] 647 (sc-166020 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-166020 AF680) or Alexa Fluor[®] 790 (sc-166020 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

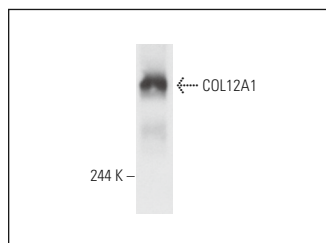
COL12A1 (A-11) is recommended for detection of Collagen Type XII of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of COL12A1: 333 kDa.

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

DATA



COL12A1 (A-11): sc-166020. Western blot analysis of COL12A1 expression in CCD-1064Sk whole cell lysate.

SELECT PRODUCT CITATIONS

1. Didangelos, A., et al. 2011. Extracellular matrix composition and remodeling in human abdominal aortic aneurysms: a proteomics approach. *Mol. Cell. Proteomics* 10: M111.008128.
2. Barbosa, S., et al. 2013. An orchestrated program regulating secretory pathway genes and cargos by the transmembrane transcription factor CREB-H. *Traffic* 14: 382-398.
3. Yen, T.Y., et al. 2014. Using a cell line breast cancer progression system to identify biomarker candidates. *J. Proteomics* 96: 173-183.
4. Vidak, S., et al. 2015. Proliferation of progeria cells is enhanced by lamina-associated polypeptide 2 α (LAP2 α) through expression of extracellular matrix proteins. *Genes Dev.* 29: 2022-2036.
5. Yu, H., et al. 2019. Three kinds of corneal host cells contribute differently to corneal neovascularization. *EBioMedicine* 44: 542-553.
6. Picca, A., et al. 2019. Mitochondrial-derived vesicles as candidate biomarkers in Parkinson's disease: rationale, design and methods of the exosomes in PARKinson disease (EXPAND) study. *Int. J. Mol. Sci.* 20: 2373.
7. Cao, Q., et al. 2022. A role for Collagen VII in matrix protein secretion. *Matrix Biol.* 111: 226-244.

RESEARCH USE

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