

COL18A1 (F-6): sc-514355

BACKGROUND

Collagen type XV (COL15 gene product) and XVIII (COL18 gene product) form the new subgroup MULTIPLEXIN, within the diverse family of collagens, which contains 19 distinct types of collagens found in vertebrates. Both Collagen Type XV and Type XVIII are characterized by extensive interruptions in their collagenous sequences. Members of the MULTIPLEXIN subgroup contain polypeptides with multiple triple-helical domains separated and flanked by non-triple-helical regions. Type XV is predominantly expressed in internal organs such as adrenal gland, kidney and pancreas. Type XVIII encodes 2 different $\alpha 1$ chains, which have different signal peptides and variant N-terminal non-collagenous NC1 domains of 495 and 303 amino acids. The long variant NC1-434 Type XVIII mRNAs are prominently expressed in liver, while the variant NC1-303 mRNAs are predominantly expressed in heart, kidney, placenta, prostate, ovary, skeletal muscle and small intestine. Endostatin is a fragment of the C-terminal domain NC1 of Collagen Type XV and Type XVIII that inhibits angiogenesis and tumor growth. Unlike endostatin-XVIII, endostatin-XV does not bind zinc or heparin, however both endostatins can inhibit chorioallantoic membrane angiogenesis induced by basic FGF or VEGF. Collagen Type XV and XVIII are also widely present in basement membrane zones, suggesting their roles in basement membrane-stromal interactions and involvement with angiogenic and pathological processes.

REFERENCES

1. Muragaki, Y., et al. 1994. The human $\alpha 1$ (XV) Collagen chain contains a large amino-terminal non-triple helical domain with a tandem repeat structure and homology to $\alpha 1$ (XVIII) collagen. *J. Biol. Chem.* 269: 4042-4046.
2. Kivirikko, S., et al. 1994. Primary structure of $\alpha 1$ chain of human Type XV Collagen and exon-intron organization in the 3' region of the corresponding gene. *J. Biol. Chem.* 269: 4773-4779.
3. Oh, S.P., et al. 1994. Cloning of cDNA and genomic DNA encoding human Type XVIII Collagen and localization of the $\alpha 1$ (XVIII) collagen gene to mouse chromosome 10 and human chromosome 21. *Genomics.* 19: 494-499.
4. Myers, J.C., et al. 1997. Biochemical and immunohistochemical characterization of human Type XIX defines a novel class of basement membrane zone collagens. *Am. J. Pathol.* 151: 1729-1740.
5. Saarela, J., et al. 1998. Complete primary structure of two variant forms of human Type XVIII Collagen and tissue-specific differences in the expression of the corresponding transcripts. *Matrix Biol.* 16: 319-328.

CHROMOSOMAL LOCATION

Genetic locus: COL18A1 (human) mapping to 21q22.3.

SOURCE

COL18A1 (F-6) is a mouse monoclonal antibody raised against amino acids 1201-1340 of Collagen Type XVIII of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

COL18A1 (F-6) is recommended for detection of Collagen Type XVIII of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 COL18A1 siRNA (h): sc-43072, COL18A1 shRNA Plasmid (h): sc-43072-SH and COL18A1 shRNA (h) Lentiviral Particles: sc-43072-V.

Molecular Weight of COL18A1 isoforms: 178/154/136 kDa.

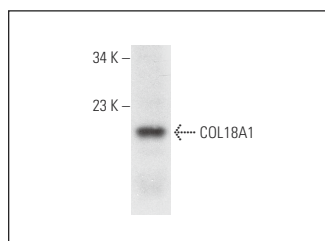
Molecular Weight of COL18A1 Endostatin fragment: 20 kDa.

Positive Controls: human pancreas extract: sc-363770.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



COL18A1 (F-6): sc-514355. Western blot analysis of COL18A1 expression in human pancreas tissue extract.

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.

PROTOCOLS

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