

COL15A1 (C-20): sc-16515

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 nineteen distinct types of collagens found in vertebrates. Both Type XV and XVIII collagens 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 two 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 predominantly 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 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. 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.
2. 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.
3. 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: COL15A1 (human) mapping to 9q22.33; Col15a1 (mouse) mapping to 4 B1.

SOURCE

COL15A1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Collagen Type XV of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-16515 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

COL15A1 (C-20) is recommended for detection of Collagen $\alpha 1$ Type XV 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).

COL15A1 (C-20) is also recommended for detection of Collagen $\alpha 1$ Type XV in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for COL15A1 siRNA (h): sc-43068, COL15A1 siRNA (m): sc-43069, COL15A1 shRNA Plasmid (h): sc-43068-SH, COL15A1 shRNA Plasmid (m): sc-43069-SH, COL15A1 shRNA (h) Lentiviral Particles: sc-43068-V and COL15A1 shRNA (m) Lentiviral Particles: sc-43069-V.

Molecular Weight of COL15A1: 142 kDa.

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.

SELECT PRODUCT CITATIONS

1. Lisignoli, G., et al. 2009. Gene array profile identifies collagen type XV as a novel human osteoblast-secreted matrix protein. *J. Cell. Physiol.* 220: 401-409.
2. Mutolo, M.J., et al. 2012. Tumor suppression by collagen XV is independent of the restin domain. *Matrix Biol.* 31: 285-289.

RESEARCH USE

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

PROTOCOLS

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