

COL10A1 (E-14): sc-323750

BACKGROUND

Collagen Type X is associated with hypertrophic chondrocytes of avian and mammalian growth plate tissues during the endochondral growth of long bones. It is a component of normal articular cartilage in adult human, growing pig and newborn rat, and it is also present during any disruption of normal metabolic status of articular cartilage that occur with osteoarthritis. Collagen Type X is composed of three identical α 1(X) chains, each containing a triple-helical region flanked by a short N-terminal sequence and a larger non-collagenous C-terminal (NC1) domain. Mutations in COL10A1, the gene encoding for Collagen Type X, are associated with metaphyseal dysplasia type Schmid (SMCD) and other related forms of metaphyseal dysplasia. SMCD is characterized by short-limbed dwarfism, an outward "flaring" of the lower rib cage, bowed legs, leg pain and a hip deformity that causes the thigh bone to angle toward the center of the body.

REFERENCES

- Gadher, S.J., et al. 1988. Susceptibility of cartilage Collagens Type II, IX, X and XI to human synovial collagenase and neutrophil elastase. *Eur. J. Biochem.* 175: 1-7.
- Gadher, S.J., et al. 1989. Cleavage of Collagen Type X by human synovial collagenase and neutrophil elastase. *Matrix* 9: 109-115.
- Rucklidge, G.J., et al. 1996. Collagen Type X: a component of the surface of normal human, pig and rat articular cartilage. *Biochem. Biophys. Res. Commun.* 224: 297-302.
- Barber, R.E., et al. 1997. Partial characterization of the C-terminal non-collagenous domain (NC1) of Collagen Type X. *Biochem. J.* 320: 479-485.

CHROMOSOMAL LOCATION

Genetic locus: COL10A1 (human) mapping to 6q22.1; Col10a1 (mouse) mapping to 10 B1.

SOURCE

COL10A1 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of COL10A1 of human origin.

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-323750 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

COL10A1 (E-14) is recommended for detection of COL10A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 COL10A1 siRNA (h): sc-95312, COL10A1 siRNA (m): sc-142458, COL10A1 shRNA Plasmid (h): sc-95312-SH, COL10A1 shRNA Plasmid (m): sc-142458-SH, COL10A1 shRNA (h) Lentiviral Particles: sc-95312-V and COL10A1 shRNA (m) Lentiviral Particles: sc-142458-V.

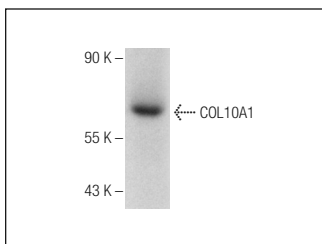
Molecular Weight of COL10A1: 66 kDa.

Positive Controls: human skin extract: sc-363777.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



COL10A1 (E-14): sc-323750. Western blot analysis of COL10A1 expression in human skin tissue extract.

SELECT PRODUCT CITATIONS

- Simonaro, C.M., et al. 2013. Acid ceramidase maintains the chondrogenic phenotype of expanded primary chondrocytes and improves the chondrogenic differentiation of bone marrow-derived mesenchymal stem cells. *PLoS ONE* 8: e62715.

RESEARCH USE

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