



COL10A1 (0.N.232): sc-70869

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 $\alpha 1(X)$ 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

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- 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.
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- Jacenko, O. 2000. Genetic-engineered models of skeletal diseases. I. Collagen Type X. *Methods Mol. Biol.* 137: 471-490.
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- Goto, T., et al. 2006. Sp1 family of transcription factors regulates the human $\alpha 2(XI)$ collagen gene (COL11A2) in Saos-2 osteoblastic cells. *J. Bone Miner. Res.* 21: 661-673.
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SOURCE

COL10A1 (0.N.232) is a mouse monoclonal antibody raised against full length native COL10A1 of chicken origin.

RESEARCH USE

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

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

COL10A1 (0.N.232) is recommended for detection of Collagen $\alpha 1$ Type X of avian origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of COL10A1: 66 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

- Wang, S., et al. 2018. Effects of growth hormone and functional appliance on mandibular growth in an adolescent rat model. *Angle Orthod.* 88: 624-631.

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 for detailed protocols and support products.