

COL10A1 (X-AC9): sc-59954

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 porcine 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

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- Magee, C., et al. 2005. Sp3/Sp1 transcription activity regulates specific expression of Collagen Type X in hypertrophic chondrocytes. *J. Biol. Chem.* 280: 25331-25338.
- Chong, I.W., et al. 2006. Great potential of a panel of multiple hMTH1, SPD, ITGA11 and COL11A1 markers for diagnosis of patients with non-small cell lung cancer. *Oncol. Rep.* 16: 981-988.
- Goto, T., et al. 2006. Sp1 family of transcription factors regulates the human α 2 (XI) collagen gene (COL11A2) in Saos-2 osteoblastic cells. *J. Bone Miner. Res.* 21: 661-673.
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SOURCE

COL10A1 (X-AC9) is a mouse monoclonal antibody raised against full length native COL10A1 of chicken 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 IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

COL10A1 (X-AC9) is available conjugated to agarose (sc-59954 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59954 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59954 PE), fluorescein (sc-59954 FITC), Alexa Fluor[®] 488 (sc-59954 AF488), Alexa Fluor[®] 546 (sc-59954 AF546), Alexa Fluor[®] 594 (sc-59954 AF594) or Alexa Fluor[®] 647 (sc-59954 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-59954 AF680) or Alexa Fluor[®] 790 (sc-59954 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

COL10A1 (X-AC9) is recommended for detection of Collagen α 1 Type X of avian origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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. 2) 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

- Zhou, N., et al. 2016. BMP2 induces chondrogenic differentiation, osteogenic differentiation and endochondral ossification in stem cells. *Cell Tissue Res.* 366: 101-111.
- Luo, H., et al. 2017. Regulation of Runx2 by microRNA-9 and microRNA-10 modulates the osteogenic differentiation of mesenchymal stem cells. *Int. J. Mol. Med.* 39: 1046-1052.
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- Baddam, P., et al. 2021. Histological and molecular characterization of the growing nasal septum in mice. *J. Anat.* 238: 751-764.
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RESEARCH USE

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