

COL2A1 (M2139): sc-52658

BACKGROUND

The extensive family of COL gene products (collagens) is composed of several chain types, including fibril-forming interstitial collagens (types I, II, III and V) and basement membrane collagens (type IV), each type containing multiple isoforms. Collagens are fibrous, extracellular matrix proteins with high tensile strength and are the major components of connective tissue, such as tendons and cartilage. All collagens contain a triple helix domain and frequently show lateral self-association in order to form complex connective tissues. Several collagens also play a role in cell adhesion, important for maintaining normal tissue architecture and function. In cartilage, Collagen Type II constitutes the bulk of the fibril. Sensitization with Collagen Type II induces an erosive polyarthritis in rats, mice and higher primates which can resemble rheumatoid arthritis and relapsing polychondritis.

REFERENCES

1. Bateman, J.F., et al. 1996. Collagen superfamily. In Comper, W.D., ed. Extracellular Matrix, Vol 2: Molecular Components and Interactions. Amsterdam: Harwood Academic Publishers, 22-67.
2. McCarthy, J.B., et al. 1996. Cell adhesion to collagenous matrices. Biopolymers 40: 371-381.

CHROMOSOMAL LOCATION

Genetic locus: COL2A1 (human) mapping to 12q13.11; Col2a1 (mouse) mapping to 15 F1.

SOURCE

COL2A1 (M2139) is a mouse monoclonal antibody raised against the collagen II J1 epitope (triple helical position 551-564) of mouse origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

COL2A1 (M2139) is recommended for detection of Collagen Type II of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

COL2A1 (M2139) is also recommended for detection of Collagen Type II in additional species, including bovine.

Suitable for use as control antibody for COL2A1 siRNA (h): sc-35081, COL2A1 siRNA (m): sc-35082, COL2A1 shRNA Plasmid (h): sc-35081-SH, COL2A1 shRNA Plasmid (m): sc-35082-SH, COL2A1 shRNA (h) Lentiviral Particles: sc-35081-V and COL2A1 shRNA (m) Lentiviral Particles: sc-35082-V.

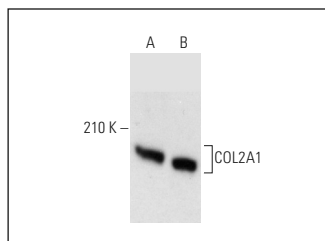
Molecular Weight of COL2A1: 190 kDa.

Positive Controls: HISM cell lysate: sc-2229, CCD-1064Sk cell lysate: sc-2263 or ECV304 cell lysate: sc-2269.

STORAGE

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

DATA



COL2A1 (M2139): sc-52658. Western blot analysis of COL2A1 expression in HISM (A) and CCD-1064Sk (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Matsumura, K., et al. 2010. Polyampholytes as cryoprotective agents for mammalian cell cryopreservation. Cell Transplant. 19: 691-699.
2. García, M.A., et al. 2011. The chemotherapeutic drug 5-fluorouracil promotes PKR-mediated apoptosis in a p53-independent manner in colon and breast cancer cells. PLoS ONE 6: e23887.
3. Lacerda, C.M., et al. 2012. Static and cyclic tensile strain induce myxomatous effector proteins and serotonin in canine mitral valves. J. Vet. Cardiol. 14: 223-230.
4. Stacey, M., et al. 2013. Atomic force microscopy characterization of collagen 'nanostraws' in human costal cartilage. Micron 44: 483-487.
5. Leung, V.Y., et al. 2014. Mesenchymal stem cells reduce intervertebral disc fibrosis and facilitate repair. Stem Cells 32: 2164-2177.
6. He, D., et al. 2015. The Wnt11 signaling pathway in potential cellular EMT and osteochondral differentiation progression in nephrolithiasis formation. Int. J. Mol. Sci. 16: 16313-16329.
7. Zhou, X., et al. 2015. Roles of FGF-2 and TGF-β/FGF-2 on differentiation of human mesenchymal stem cells towards nucleus pulposus-like phenotype. Growth Factors 33: 23-30.
8. Gharravi, A.M., et al. 2016. Fluid-induced low shear stress improves cartilage like tissue fabrication by encapsulating chondrocytes. Cell Tissue Bank. 17: 117-122.
9. Zhou, N., et al. 2016. BMP2 induces chondrogenic differentiation, osteogenic differentiation and endochondral ossification in stem cells. Cell Tissue Res. 366: 101-111.
10. Xu, X., et al. 2016. TCF-1 participates in the occurrence of dedifferentiated chondrosarcoma. Tumour Biol. 37: 14129-14140.

RESEARCH USE

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