SANTA CRUZ BIOTECHNOLOGY, INC.

COL2A1 (B-1): sc-518017

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 polychrondritis.

CHROMOSOMAL LOCATION

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

SOURCE

COL2A1 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 814-838 within an internal region of Collagen α1 Type II of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

COL2A1 (B-1) is available conjugated to agarose (sc-518017 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518017 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518017 PE), fluorescein (sc-518017 FITC), Alexa Fluor® 488 (sc-518017 AF488), Alexa Fluor® 546 (sc-518017 AF546), Alexa Fluor® 594 (sc-518017 AF594) or Alexa Fluor® 647 (sc-518017 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518017 AF680) or Alexa Fluor® 790 (sc-518017 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

COL2A1 (B-1) is recommended for detection of Collagen α1 Type II of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

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.

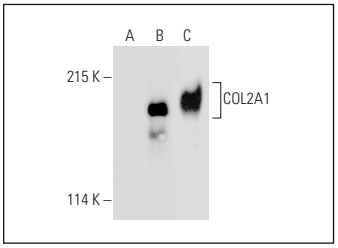
Molecular Weight of COL2A1: 190 kDa.

Positive Controls: COL2A1 (m): 293T Lysate: sc-119365 or CCD-1064Sk cell lysate: sc-2263.

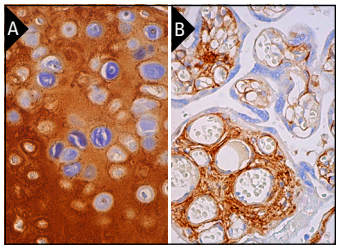
STORAGE

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

DATA



COL2A1 (B-1): sc-518017. Western blot analysis of COL2A1 expression in non-transfected 293T: sc-117752 (**A**), mouse COL2A1 transfected 293T: sc-119365 (**B**) and CCD-1064Sk (**C**) whole cell lysates.



COL2A1 (B-1): sc-518017. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cartilage tissue showing extracellular matrix staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing connective tissue staining (**B**).

SELECT PRODUCT CITATIONS

1. De Moor, L., et al. 2020. Hybrid bioprinting of chondrogenically induced human mesenchymal stem cell spheroids. Front. Bioeng. Biotechnol. 8: 484.
2. Dong, J., et al. 2020. The PI3K/Akt pathway promotes fracture healing through its crosstalk with Wnt/β-catenin. Exp. Cell Res. 394: 112137.
3. Joung, S., et al. 2021. Downregulation of microRNA-495 alleviates IL-1β responses among chondrocytes by preventing SOX9 reduction. Yonsei Med. J. 62: 650-659.
4. Pascual-Garrido, C., et al. 2022. Otto aufranc award: identification of key molecular players in the progression of hip osteoarthritis through transcriptomes and epigenetics. J. Arthroplasty 37: S391-S399.
5. Lin, C.Y., et al. 2022. Isoliquiritigenin ameliorates advanced glycation end-products toxicity on renal proximal tubular epithelial cells. Environ. Toxicol. 37: 2096-2102.
6. Kamenaga, T., et al. 2023. Epigenetic dysregulation of articular cartilage during progression of hip femoroacetabular impingement disease. J. Orthop. Res. 41: 1678-1686.
7. Walker, M., et al. 2024. Mind the viscous modulus: the mechanotransductive response to the viscous nature of isoelastic matrices regulates stem cell chondrogenesis. Adv. Healthc. Mater. 13: e2302571.

RESEARCH USE

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

PROTOCOLS

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