SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-13 (MM0019-12E10): sc-101564

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The matrix metalloproteinases (MMP) are a family of peptidase enzymes responsible for the degradation of extracellular matrix components, including collagen, gelatin, Fibronectin, Laminin and proteoglycan. Transcription of MMP genes is differentially activated by phorbol ester, lipopolysaccharide (LPS) or staphylococcal enterotoxin B (SEB). MMP catalysis requires both calcium and zinc. MMP-13 (also designated collagenase-3) is produced by breast carcinomas and degrades collagen types I, II and III. MMP-13 has wide substrate specificity, and its physiologic expression is limited to situations in which rapid and effective remodeling of collagenous ECM takes place, such as fetal bone development and adult bone remodeling.

REFERENCES

1. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
2. Reinemer, P., et al. 1994. Structural implications for the role of the N-terminus in the "superactivation" of collagenases. A crystallographic study. FEBS Lett. 338: 227-233.
3. Freije, J.M., et al. 1994. Molecular cloning and expression of collagenase-3, a novel human matrix metalloproteinase produced by breast carcinomas. J. Biol. Chem. 269: 16766-16773.

CHROMOSOMAL LOCATION

Genetic locus: MMP13 (human) mapping to 11q22.2.

SOURCE

MMP-13 (MM0019-12E10) is a mouse monoclonal antibody raised against recombinant MMP-13 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MMP-13 (MM0019-12E10) is recommended for detection of MMP-13 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other MMPs.

Suitable for use as control antibody for MMP-13 siRNA (h): sc-41559, MMP-13 shRNA Plasmid (h): sc-41559-SH and MMP-13 shRNA (h) Lentiviral Particles: sc-41559-V.

Molecular Weight of MMP-13: 48 kDa.

Positive Controls: SCC-4 whole cell lysate: sc-364363.

STORAGE

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

RESEARCH USE

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

SELECT PRODUCT CITATIONS

1. Ciurea, M.E., et al. 2013. Expression of CXCR4, MMP-13 and β-catenin in different histological subtypes of facial basal cell carcinoma. Rom. J. Morphol. Embryol. 54: 939-951.
2. Vanjaka-Rogosic, L., et al. 2014. Matrix metalloproteinases and E-cadherin immunoreactivity in different basal cell carcinoma histological types. Acta Histochem. 116: 688-693.
3. Chung, S.W., et al. 2016. Altered gene and protein expressions in torn rotator cuff tendon tissues in diabetic patients. Arthroscopy 33: 518-526.
4. Luo, Y., et al. 2018. Icariin reduces cartilage degeneration in a mouse model of osteoarthritis and is associated with the changes in expression of Indian hedgehog and parathyroid hormone-related protein. Med. Sci. Monit. 24: 6695-6706.
5. Wang, H., et al. 2018. The human umbilical cord stem cells improve the viability of OA degenerated chondrocytes. Mol. Med. Rep. 17: 4474-4482.
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7. Li, X., et al. 2019. LncRNA PMS2L2 protects ATDC5 chondrocytes against lipopolysaccharide-induced inflammatory injury by sponging miR-203. Life Sci. 217: 283-292.
8. Saeed, M., et al. 2019. Low-dose doxycycline inhibits hydrogen peroxide-induced oxidative stress, MMP-2 up-regulation and contractile dysfunction in human saphenous vein grafts. Drug Des. Devel. Ther. 13: 1791-1801.
9. Ding, Z., et al. 2020. The CRD of Frizzled 7 exhibits chondroprotective effects in osteoarthritis via inhibition of the canonical Wnt3a/β-catenin signaling pathway. Int. Immunopharmacol. 82: 106367.
10. Sun, C., et al. 2020. ADAM17-regulated CX3CL1 expression produced by bone marrow endothelial cells promotes spinal metastasis from hepatocellular carcinoma. Int. J. Oncol. 57: 249-263.
11. Bai, X., et al. 2022. Cyanidin-3-glucoside protects against high glucose-induced injury in human nucleus pulposus cells by regulating the Nrf2/HO-1 signaling. J. Appl. Toxicol. 42: 1137-1145.
12. Zhao, Z., et al. 2022. Knockdown of DAPK1 inhibits IL-1β-induced inflammation and cartilage degradation in human chondrocytes by modulating the PEDF-mediated NFκB and NLRP3 inflammasome pathway. Innate Immun. E-published.

CONJUGATES

See **MMP-13 (C-3): sc-515284** for MMP-13 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.