SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-1 (SB12e): sc-58377

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-9 (also designated gelatinase B) has been shown to degrade bone collagens in concert with MMP-1 (also designated interstitial collagenase, fibroblast collagenase or collagenase-1), and cysteine proteases and may play a role in bone osteoclastic resorption. MMP-1 is downregulated by p53, and abnormality of p53 expression may contribute to joint degradation in rheumatoid arthritis by regulating MMP-1 expression.

REFERENCES

1. Templeton, N.S., et al. 1990. Cloning and characterization of human tumor cell interstitial collagenase. Cancer Res. 50: 5431-5437.
2. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
3. Reponen, P., et al. 1994. High expression of 92 kD type IV collagenase (gelatinase B) in the osteoclast lineage during mouse development. J. Cell Biol. 124: 1091-1102.

CHROMOSOMAL LOCATION

Genetic locus: MMP1 (human) mapping to 11q22.2.

SOURCE

MMP-1 (SB12e) is a mouse monoclonal antibody raised against full length MMP-1 of human origin.

PRODUCT

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

APPLICATIONS

MMP-1 (SB12e) is recommended for detection of MMP-1 of human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with MMP-2, MMP-3 or MMP-9.

Suitable for use as control antibody for MMP-1 siRNA (h): sc-41552, MMP-1 shRNA Plasmid (h): sc-41552-SH and MMP-1 shRNA (h) Lentiviral Particles: sc-41552-V.

Molecular Weight of MMP-1: 52 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HUV-EC-C whole cell lysate: sc-364180.

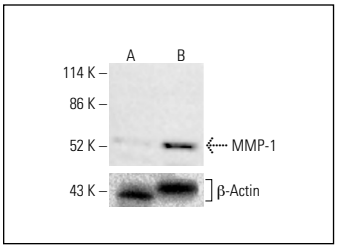
RESEARCH USE

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

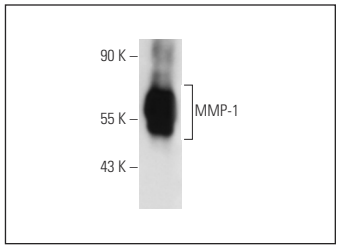
STORAGE

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

DATA



MMP-1 (SB12e): sc-58377. Western blot analysis of MMP-1 expression in untreated (**A**) and chemically-treated (**B**) HeLa whole cell lysates. Detection reagent used: m-IgG_{2b} BP-HRP: sc-542741. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



MMP-1 (SB12e): sc-58377. Western blot analysis of human recombinant MMP-1.

SELECT PRODUCT CITATIONS

1. Garamszegi, N., et al. 2011. Matrix metalloproteinase-1 contribution to sarcoma cell invasion. J. Cell. Mol. Med. 16: 1331-1334.
2. Akhtar, N., et al. 2016. MicroRNA-17 suppresses TNF-α signaling by interfering with TRAF2 and cIAP2 association in rheumatoid arthritis synovial fibroblasts. J. Immunol. 197: 2219-2228.
3. Li, W., et al. 2018. Identification of genes associated with matrix metalloproteinases in invasive lung adenocarcinoma. Oncol. Lett. 16: 123-130.
4. Basukala, O., et al. 2019. The HPV-18 E7 CKII phospho acceptor site is required for maintaining the transformed phenotype of cervical tumour-derived cells. PLoS Pathog. 15: e1007769.
5. Yu, C,L., et al. 2020. Praeruptorin A reduces metastasis of human hepatocellular carcinoma cells by targeting ERK/MMP1 signaling pathway. Environ. Toxicol. 36: 540-549.
6. Chiu, L.Y., et al. 2021. PARP-1 involves in UVB-induced inflammatory response in keratinocytes and skin injury via regulation of ROS-dependent EGFR transactivation and p38 signaling. FASEB J. 35: e21393.
7. Ogura, Y., et al. 2022. Ubiquitin-specific protease TRE17/USP6 promotes tumor cell invasion through the regulation of glycoprotein CD147 intracellular trafficking. J. Biol. Chem. 298: 102335.
8. Liu, Y., et al. 2023. Mechanisms of antitumor invasion and metastasis of the marine fungal derivative epi-aszonalenin A in HT1080 cells. Mar. Drugs 21: 156.