SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-1 (L-20): sc-12348

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-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. 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.
4. 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.
5. Okada, Y., et al. 1995. Localization of matrix metalloproteinase 9 (92-kilodalton gelatinase/type IV collagenase=gelatinase B) in osteoclasts: implications for bone resorption. Lab. Invest. 72: 311-322.
6. Machein, U., et al. 1997. Expression of several matrix metalloproteinase genes in human monocytic cells. Adv. Exp. Med. Biol. 421: 247-251.
7. Sun, Y., et al. 1999. p53 down-regulates human matrix metalloproteinase-1 (collagenase-1) gene expression. J. Biol. Chem. 274: 11535-11540.

CHROMOSOMAL LOCATION

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

SOURCE

MMP-1 (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MMP-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12348 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MMP-1 (L-20) 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).

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chiang, H.M., et al. 2011. *Coffea arabica* extract and its constituents prevent photoaging by suppressing MMPs expression and MAP kinase pathway. Food Chem. Toxicol. 49: 309-318.
2. Yun, J., et al. 2011. Signalling pathway for RKIP and Let-7 regulates and predicts metastatic breast cancer. EMBO J. 30: 4500-4514.
3. Wen, K.C., et al. 2012. *Ixora parviflora* protects against UVB-induced photoaging by inhibiting the expression of MMPs, MAP kinases, and COX-2 and by promoting type I procollagen synthesis. Evid. Based Complement. Alternat. Med. 2012: 417346.
4. Chiang, H.M., et al. 2013. *Neonauclea reticulata (Havil.) merr* stimulates skin regeneration after UVB exposure via ROS scavenging and modulation of the MAPK/MMPs/collagen pathway. Evid. Based Complement. Alternat. Med. 2013: 324864.
5. Chiang, H.M., et al. 2013. Isoflavonoid-rich *Flemingia macrophylla* extract attenuates UVB-induced skin damage by scavenging reactive oxygen species and inhibiting MAP kinase and MMP expression. Evid. Based Complement. Alternat. Med. 2013: 696879.

RESEARCH USE

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