SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-1 (C-18): sc-6837

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 kDa 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 (C-18) is available as either goat (sc-6837) or rabbit (sc-6837-R) polyclonal affinity purified antibody raised against a peptide mapping at the C-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-6837 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

MMP-1 (C-18) is recommended for detection of MMP-1 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MMP-1 (C-18) is also recommended for detection of MMP-1 in additional species, including equine, bovine and porcine.

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

SELECT PRODUCT CITATIONS

1. Bauer, S., et al. 2006. Fibroblast activation protein is expressed by rheumatoid myofibroblast-like synoviocytes. Arthritis Res. Ther. 8: R171.
2. Finis, K., et al. 2006. Analysis of pigmented villonodular synovitis with genome-wide complementary DNA microarray and tissue array technology reveals insight into potential novel therapeutic approaches. Arthritis Rheum. 54: 1009-1019.
3. Morikawa, A., et al. 2008. Selective progesterone receptor modulator asoprisnil down-regulates collagen synthesis in cultured human uterine leiomyoma cells through up-regulating extracellular matrix metalloproteinase inducer. Hum. Reprod. 23: 944-951.
4. Kim, S.G., et al. 2008. Downregulation of matrix metalloproteinases in hyperplastic dental follicles results in abnormal tooth eruption. BMB Rep. 41: 322-327.
5. Xu, Q., et al. 2008. Progesterone receptor modulator CDB-2914 induces extracellular matrix metalloproteinase inducer in cultured human uterine leiomyoma cells. Mol. Hum. Reprod. 14: 181-191.
6. Simon, C. and Einspanier, A. 2009. The hormonal induction of cervical remodeling in the common marmoset monkey *(Callithrix jacchus)*. Reproduction 137: 517-525.
7. Ryu, B., et al. 2010. Purification of a peptide from seahorse, that inhibits TPA-induced MMP, iNOS and COX-2 expression through MAPK and NF-kappaB activation, and induces human osteoblastic and chondrocytic differentiation. Chem. Biol. Interact. 184: 413-422.

STORAGE

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

PROTOCOLS

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