SANTA CRUZ BIOTECHNOLOGY, INC.

MT-MMP-1 (H-72): sc-30074

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. Membrane-type matrix metalloproteinases, including MT-MMP-1 (also designated MMP-14), MT-MMP-2 (also designated MMP-15), MT-MMP-3 (also designated MMP-16) and MT-MMP-4 (also designated MMP-17) are type I membrane proteins that function to activate other MMPs. MT-MMP activation appears to be mediated by members of the proprotein convertase family, suggesting that a proprotein convertase/MT-MMP/MMP cascade may be involved in the regulation of ECM turnover.

REFERENCES

1. Steiner, D.F., et al. 1992. The new enzymology of precursor processing endoproteases. J. Biol. Chem. 267: 23435-23438.
2. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.

CHROMOSOMAL LOCATION

Genetic locus: MMP14 (human) mapping to 14q11.2; Mmp14 (mouse) mapping to 14 C2.

SOURCE

MT-MMP-1 (H-72) is a rabbit polyclonal antibody raised against amino acids 511-582 mapping at the C-terminus of MT-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.

APPLICATIONS

MT-MMP-1 (H-72) is recommended for detection of MT-MMP-1 of mouse, rat and 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), 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).

MT-MMP-1 (H-72) is also recommended for detection of MT-MMP-1 in additional species, including bovine.

Suitable for use as control antibody for MT-MMP-1 siRNA (h): sc-41565, MT-MMP-1 siRNA (m): sc-41566, MT-MMP-1 shRNA Plasmid (h): sc-41565-SH, MT-MMP-1 shRNA Plasmid (m): sc-41566-SH, MT-MMP-1 shRNA (h) Lentiviral Particles: sc-41565-V and MT-MMP-1 shRNA (m) Lentiviral Particles: sc-41566-V.

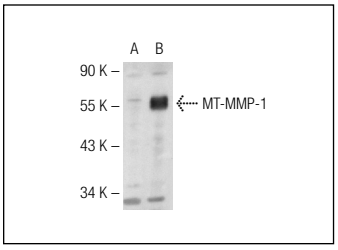
Molecular Weight of MT-MMP-1: 63 kDa.

Positive Controls: MT-MMP-1 (h): 293T Lysate: sc-116661.

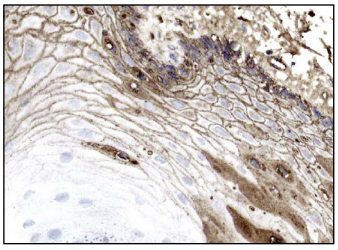
STORAGE

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

DATA



MT-MMP-1 (H-72): sc-30074. Western blot analysis of MT-MMP-1 expression in non-transfected: sc-117752 (**A**) and human MT-MMP-1 transfected: sc-116661 (**B**) 293T whole cell lysates.



MT-MMP-1 (H-72): sc-30074. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing membrane and cytoplasmic staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Jiang, W.G., et al. 2006. Expression of membrane type-1 matrix metalloproteinase, MT1-MMP in human breast cancer and its impact on invasiveness of breast cancer cells. Int. J. Mol. Med. 17: 583-590.
2. Koo, B.H., et al. 2009. Regulatory mechanism of matrix metalloprotease-2 enzymatic activity by factor Xa and thrombin. J. Biol. Chem. 284: 23375-23385.
3. Koo, B.H., et al. 2009. Membrane type-1 matrix metalloprotease-independent activation of pro-matrix metalloprotease-2 by proprotein convertases. FEBS J. 276: 6271-6284.
4. Gao, M.Q., et al. 2010. Stromal fibroblasts from the interface zone of human breast carcinomas induce an epithelial-mesenchymal transition-like state in breast cancer cells *in vitro*. J. Cell Sci. 123: 3507-3514.
5. Koo, B.H., et al. 2010. Thrombin-dependent MMP-2 activity is regulated by heparan sulfate. J. Biol. Chem. 285: 41270-41279.
6. Coulson-Thomas, V.J., et al. 2010. Fibroblast and prostate tumor cell cross-talk: fibroblast differentiation, TGF-β, and extracellular matrix down-regulation. Exp. Cell Res. 316: 3207-3226.
7. Saygili, E., et al. 2011. Sympathetic neurons express and secrete MMP-2 and MT1-MMP to control nerve sprouting via pro-NGF conversion. Cell. Mol. Neurobiol. 31: 17-25.

RESEARCH USE

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