

# MT-MMP-1 (C-9): sc-373908

## 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

- Steiner, D.F., et al. 1992. The new enzymology of precursor processing endoproteases. *J. Biol. Chem.* 267: 23435-23438.
- 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 (C-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 431-462 near the C-terminus of MT-MMP-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373908 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

MT-MMP-1 (C-9) is recommended for detection of MT-MMP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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). MT-MMP-1 (C-9) is also recommended for detection of MT-MMP-1 in additional species, including equine, canine and porcine.

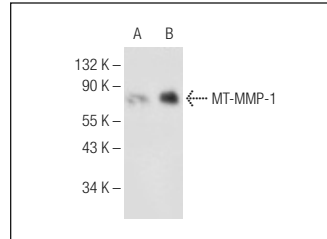
Suitable for use as control antibody for MT-MMP-1 siRNA (h): sc-41565, MT-MMP-1 siRNA (m): sc-41566, MT-MMP-1 shRNA Plasmid (h): sc-41565-SH, MT-MMP-1 shRNA Plasmid (m): sc-41566-SH, MT-MMP-1 shRNA (h) Lentiviral Particles: sc-41565-V and MT-MMP-1 shRNA (m) Lentiviral Particles: sc-41566-V.

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

## 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 (C-9): sc-373908. 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.

## SELECT PRODUCT CITATIONS

- Zhou, C. and Petroll, W.M. 2014. MMP regulation of corneal keratocyte motility and mechanics in 3-D collagen matrices. *Exp. Eye Res.* 121: 147-160.
- Devine, R.D., et al. 2015. Metalloproteinase expression is altered in cardiac and skeletal muscle in cancer cachexia. *Am. J. Physiol. Heart Circ. Physiol.* 309: H685-H691.
- Hsu, K.S., et al. 2019. CLIC4 regulates late endosomal trafficking and matrix degradation activity of MMP14 at focal adhesions in RPE cells. *Sci. Rep.* 9: 12247.
- Chan, Z.C., et al. 2020. Site-directed MT1-MMP trafficking and surface insertion regulate AChR clustering and remodeling at developing NMJs. *Elife* 9: e54379.
- Di Donato, M., et al. 2021. The androgen receptor/filamin A complex as a target in prostate cancer microenvironment. *Cell Death Dis.* 12: 127.
- Yang, Z., et al. 2021. Phosphorylated form of pyruvate dehydrogenase  $\alpha$ 1 mediates tumor necrosis factor  $\alpha$ -induced glioma cell migration. *Oncol. Lett.* 21: 176.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.