

MMP-3 (F-1): sc-271230

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-3, MMP-10 and MMP-11 (also designated stromelysin-1, -2 and -3 respectively) activate procollagenase. MMP-3 activation of procollagenase can occur via two pathways. Direct activation by MMP-3 is slow and activation by MMP-3 in conjunction with tissue or plasma proteinases is rapid. MMP-10 is expressed in small intestine, and at lower levels in lung and heart. MMP-11 is specifically expressed in stromal cells of breast carcinomas and contributes to epithelial cell malignancies.

REFERENCES

1. Saus, J., et al. 1988. The complete primary structure of human matrix metalloproteinase-3. Identity with stromelysin. *J. Biol. Chem.* 263: 6742-6745.
2. Suzuki, K., et al. 1990. Mechanisms of activation of tissue procollagenase by matrix metalloproteinase 3 (stromelysin). *Biochemistry* 29: 10261-10270.
3. Basset, P., et al. 1990. A novel metalloproteinase gene specifically expressed in stromal cells of breast carcinomas. *Nature* 348: 699-704.
4. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. *Crit. Rev. Oral Biol. Med.* 4: 197-250.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: MMP3 (human) mapping to 11q22.2; Mmp3 (mouse) mapping to 9 A1.

SOURCE

MMP-3 (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 443-476 at the C-terminus of MMP-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-271230 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

MMP-3 (F-1) is recommended for detection of MKP-3 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).

Suitable for use as control antibody for MMP-3 siRNA (h): sc-29399, MMP-3 siRNA (m): sc-37265, MMP-3 siRNA (r): sc-61874, MMP-3 shRNA Plasmid (h): sc-29399-SH, MMP-3 shRNA Plasmid (m): sc-37265-SH, MMP-3 shRNA Plasmid (r): sc-61874-SH, MMP-3 shRNA (h) Lentiviral Particles: sc-29399-V, MMP-3 shRNA (m) Lentiviral Particles: sc-37265-V and MMP-3 shRNA (r) Lentiviral Particles: sc-61874-V.

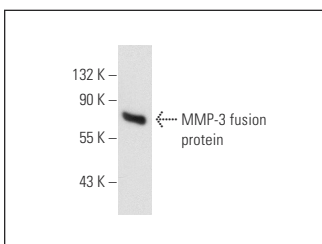
Molecular Weight of MMP-3: 57 kDa.

Positive Controls: Y79 cell lysate: sc-2240.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MMP-3 (F-1): sc-271230. Western blot analysis of human recombinant MMP-3 fusion protein.

SELECT PRODUCT CITATIONS

1. 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.
2. Shi, J., et al. 2016. Explore the variation of MMP3, JNK, p38 MAPKs, and autophagy at the early stage of osteoarthritis. *IUBMB Life* 68: 293-302.

CONJUGATES

See **MMP-3 (1B4): sc-21732** for MMP-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.