

MMP-1/8 (A-7): sc-137044

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 92 kDa type IV collagenase or 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. MMP-8 (also designated neutrophil collagenase, PMNL collagenase or collagenase-2) degrades fibrillar collagen types I, II and III. Unlike other members of the MMP family, MMP-8 is expressed exclusively in inflammatory conditions. MMP-8 is highly expressed in the postpartum uterus, and it is thought to be involved in the postpartum involution of the uterus. MMP-8 is also the predominant collagenase expressed in ulcers and healing wounds.

REFERENCES

1. Templeton, N.S., et al. 1990. Cloning and characterization of human tumor cell interstitial collagenase. *Cancer Res.* 50: 5431-5437.
2. Hasty, K.A., et al. 1990. Human neutrophil collagenase. A distinct gene product with homology to other matrix metalloproteinases. *J. Biol. Chem.* 265: 11421-11424.

CHROMOSOMAL LOCATION

Genetic locus: MMP1/MMP8 (human) mapping to 11q22.2; Mmp8 (mouse) mapping to 9 A1.

SOURCE

MMP-1/8 (A-7) is a mouse monoclonal antibody raised against amino acids 100-399 mapping within an internal region of MMP-1 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.

MMP-1/8 (A-7) is available conjugated to agarose (sc-137044 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137044 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137044 PE), fluorescein (sc-137044 FITC), Alexa Fluor® 488 (sc-137044 AF488), Alexa Fluor® 546 (sc-137044 AF546), Alexa Fluor® 594 (sc-137044 AF594) or Alexa Fluor® 647 (sc-137044 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137044 AF680) or Alexa Fluor® 790 (sc-137044 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

MMP-1/8 (A-7) is recommended for detection of MMP-1 of human origin and MMP-8 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-8 siRNA (m): sc-35950, MMP-8 shRNA Plasmid (m): sc-35950-SH and MMP-8 shRNA (m) Lentiviral Particles: sc-35950-V.

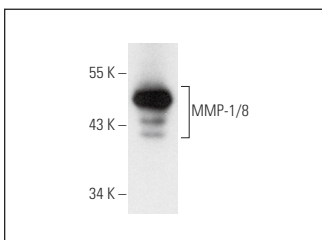
Molecular Weight of MMP-1: 52 kDa.

Molecular Weight of latent MMP-8: 65 kDa.

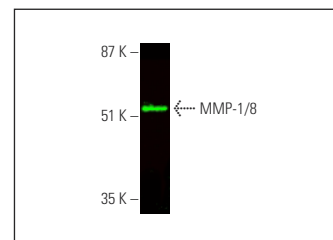
Molecular Weight of active MMP-8: 50 kDa.

Positive Controls: ES-2 cell lysate: sc-24674.

DATA



MMP-1/8 (A-7): sc-137044. Western blot analysis of MMP-1/8 expression in ES-2 whole cell lysate.



MMP-1/8 (A-7): sc-137044. Near-infrared western blot analysis of MMP-1/8 expression in ES-2 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Sun, F., et al. 2017. Therapeutic mechanisms of ibuprofen, prednisone and betamethasone in osteoarthritis. *Mol. Med. Rep.* 15: 981-987.
2. Zhang, P., et al. 2019. Protective effects of alogliptin against TNF-α-induced degradation of extracellular matrix in human chondrocytes. *Int. Immunopharmacol.* 68: 179-184.
3. Tao, C., et al. 2020. The tumor suppressor zinc finger protein 471 suppresses breast cancer growth and metastasis through inhibiting Akt and Wnt/β-catenin signaling. *Clin. Epigenetics* 12: 173.
4. Lin, Y., et al. 2021. Phillygenin inhibits the inflammation and apoptosis of pulmonary epithelial cells by activating PPARγ signaling via downregulation of MMP-8. *Mol. Med. Rep.* 24: 775.
5. Kim, W.T., et al. 2022. Secretory SERPINE1 expression is increased by antiplatelet therapy, inducing MMP-1 expression and increasing colon cancer metastasis. *Int. J. Mol. Sci.* 23: 9596.

STORAGE

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