SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-2 (4D3): sc-53630

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-2 (also designated type IV collagenase) cleaves collagen types IV, V, VII and X and gelatin type I. Activation of MMP-2 secretion requires the Ras signaling pathway.

CHROMOSOMAL LOCATION

Genetic locus: MMP2 (human) mapping to 16q12.2; Mmp2 (mouse) mapping to 8 C5.

SOURCE

MMP-2 (4D3) is a mouse monoclonal antibody raised against amino acids 557-569 of MMP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MMP-2 (4D3) is available conjugated to agarose (sc-53630 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53630 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53630 PE), fluorescein (sc-53630 FITC), Alexa Fluor® 488 (sc-53630 AF488), Alexa Fluor® 546 (sc-53630 AF546), Alexa Fluor® 594 (sc-53630 AF594) or Alexa Fluor® 647 (sc-53630 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53630 AF680) or Alexa Fluor® 790 (sc-53630 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MMP-2 (4D3) is recommended for detection of MMP-2 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with MMP-3.

MMP-2 (4D3) is also recommended for detection of MMP-2 in additional species, including rabbit.

Suitable for use as control antibody for MMP-2 siRNA (h): sc-29398, MMP-2 siRNA (m): sc-37264, MMP-2 siRNA (r): sc-108049, MMP-2 shRNA Plasmid (h): sc-29398-SH, MMP-2 shRNA Plasmid (m): sc-37264-SH, MMP-2 shRNA Plasmid (r): sc-108049-SH, MMP-2 shRNA (h) Lentiviral Particles: sc-29398-V, MMP-2 shRNA (m) Lentiviral Particles: sc-37264-V and MMP-2 shRNA (r) Lentiviral Particles: sc-108049-V.

Molecular Weight of pro-MMP-2: 72 kDa.

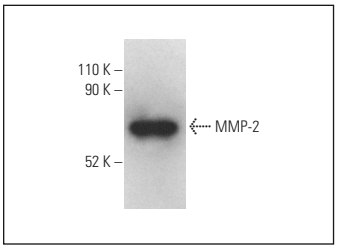
Molecular Weight of cleaved MMP-2: 63 kDa.

Positive Controls: A-375 cell lysate: sc-3811 or ECV304 cell lysate: sc-2269.

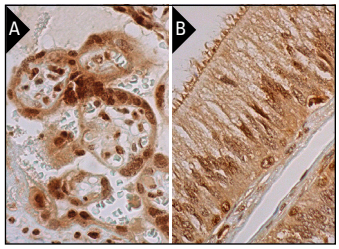
STORAGE

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

DATA



MMP-2 (4D3) HRP: sc-53630 HRP. Direct western blot analysis of human recombinant MMP-2.



MMP-2 (4D3): sc-53630. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of trophoblastic cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sakata, K., et al. 2000. Expression of matrix metalloproteinases (MMP-2, MMP-9, MT1-MMP) and their inhibitors (TIMP-1, TIMP-2) in common epithelial tumors of the ovary. Int. J. Oncol. 17: 673-681.
2. Wu, L., et al. 2014. Annexin A5 promotes invasion and chemoresistance to temozolomide in glioblastoma multiforme cells. Tumour Biol. 35: 12327-12337.
3. Zheng, L., et al. 2015. Twist-related protein 1 enhances oral tongue squamous cell carcinoma cell invasion through β-catenin signaling. Mol. Med. Rep. 11: 2255-2261.
4. Ying, T.H., et al. 2016. Knockdown of Pentraxin 3 suppresses tumorigenicity and metastasis of human cervical cancer cells. Sci. Rep. 6: 29385.
5. Gravina, G.L., et al. 2017. The brain-penetrating CXCR4 antagonist, PRX177561, increases the antitumor effects of bevacizumab and sunitinib in preclinical models of human glioblastoma. J. Hematol. Oncol. 10: 5.
6. Thankam, F.G., et al. 2018. Collagen type III content of the long head of the biceps tendon as an indicator of glenohumeral arthritis. Mol. Cell. Biochem. 454: 25-31.
7. Baryla, M., et al. 2019. Prostaglandin F2α stimulates adhesion, migration, invasion and proliferation of the human trophoblast cell line HTR-8/SVneo. Placenta 77: 19-29.
8. Zhu, G., et al. 2020. Curcumin inhibited the growth and invasion of human monocytic leukaemia SHI-1 cells *in vivo* by altering MAPK and MMP signalling. Pharm. Biol. 58: 25-34.

RESEARCH USE

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