

MMP-9 (2C3): sc-21733

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 down-regulated by p53, and abnormality of p53 expression may contribute to joint degradation in rheumatoid arthritis by regulating MMP-1 expression.

REFERENCES

1. Templeton, N.S., et al. 1990. Cloning and characterization of human tumor cell interstitial collagenase. *Cancer Res.* 50: 5431-5437.
2. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. *Crit. Rev. Oral Biol. Med.* 4: 197-250.

CHROMOSOMAL LOCATION

Genetic locus: MMP9 (human) mapping to 20q13.12.

SOURCE

MMP-9 (2C3) is a mouse monoclonal antibody raised against amino acids 603-614 of MMP-9 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-9 (2C3) is available conjugated to agarose (sc-21733 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either Alexa Fluor® 546 (sc-21733 AF546) or Alexa Fluor® 594 (sc-21733 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21733 AF680) or Alexa Fluor® 790 (sc-21733 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MMP-9 (2C3) is recommended for detection of MMP-9 of 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).

Suitable for use as control antibody for MMP-9 siRNA (h): sc-29400, MMP-9 shRNA Plasmid (h): sc-29400-SH and MMP-9 shRNA (h) Lentiviral Particles: sc-29400-V.

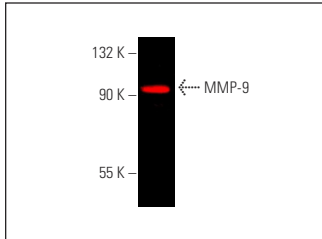
Molecular Weight of MMP-9: 92 kDa.

Positive Controls: human breast extract: sc-363753.

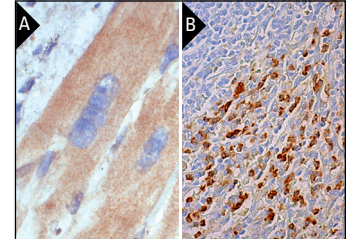
STORAGE

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

DATA



MMP-9 (2C3) Alexa Fluor® 790: sc-21733 AF790. Direct near-infrared western blot analysis of MMP-9 expression in human breast tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



MMP-9 (2C3): sc-21733. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human heart tissue showing cytoplasmic staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of subset of cells in red pulp (B).

SELECT PRODUCT CITATIONS

1. Elsasser, A., et al. 2004. Human hibernating myocardium is jeopardized by apoptotic and autophagic cell death. *J. Am. Coll. Cardiol.* 43: 2191-2199.
2. De Amicis, F., et al. 2013. Epigallocatechin gallate inhibits growth and epithelial-to-mesenchymal transition in human thyroid carcinoma cell lines. *J. Cell. Physiol.* 228: 2054-2062.
3. Rainero, E., et al. 2014. The diacylglycerol kinase α /atypical PKC/ β 1 integrin pathway in SDF-1 α mammary carcinoma invasiveness. *PLoS ONE* 9: e97144.
4. Wu, F., et al. 2015. Irisin induces angiogenesis in human umbilical vein endothelial cells *in vitro* and in zebrafish embryos *in vivo* via activation of the ERK signaling pathway. *PLoS ONE* 10: e0134662.
5. Checa, M., et al. 2016. Cigarette smoke enhances the expression of profibrotic molecules in alveolar epithelial cells. *PLoS ONE* 11: e0150383.
6. Jiang, Y., et al. 2017. Knockdown of JARID2 inhibits the viability and migration of placenta trophoblast cells in preeclampsia. *Mol. Med. Rep.* 16: 3594-3599.
7. Li, W., et al. 2018. Overexpression of particularly interesting new cys-rich protein (PINCH) is a risk factor for growth of unruptured intracranial aneurysms. *Int. J. Clin. Exp. Pathol.* 11: 2636-2641.
8. Hao, J., et al. 2019. Surfactant protein A induces the pathogenesis of renal fibrosis through binding to calreticulin. *Exp. Ther. Med.* 17: 459-464.
9. Sonongbua, J., et al. 2020. Periostin induces epithelial-to-mesenchymal transition via the integrin α 5 β 1/TWIST-2 axis in cholangiocarcinoma. *Oncol. Rep.* 43: 1147-1158.

RESEARCH USE

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