SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-12 (H-300): sc-30072

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-12 (also designated macrophage metalloelastase) is produced in alveolar macrophages and degrades elastin. MMP-12 may contribute to elastin degradation occurring in granulomatous skin diseases and may also participate in macrophage migration through the epidermal and vascular basement membranes in inflammatory disorders.

REFERENCES

1. Shapiro, S.D., et al. 1992. Molecular cloning, chromosomal localization, and bacterial expression of a murine macrophage metalloelastase. J. Biol. Chem. 267: 4664-4671.
2. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
3. Shapiro, S.D., et al. 1993. Cloning and characterization of a unique elastolytic metalloproteinase produced by human alveolar macrophages. J. Biol. Chem. 268: 23824-23829.
4. 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.
5. Machein, U., et al. 1997. Expression of several matrix metalloproteinase genes in human monocytic cells. Adv. Exp. Med. Biol. 421: 247-251.
6. Vaalamo, M., et al. 1999. Enhanced expression of human metalloelastase (MMP-12) in cutaneous granulomas and macrophage migration. J. Invest. Dermatol. 112: 499-505.

CHROMOSOMAL LOCATION

Genetic locus: MMP12 (human) mapping to 11q22.2; Mmp12 (mouse) mapping to 9 A1.

SOURCE

MMP-12 (H-300) is a rabbit polyclonal antibody raised against amino acids 171-470 mapping at the C-terminus of MMP-12 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

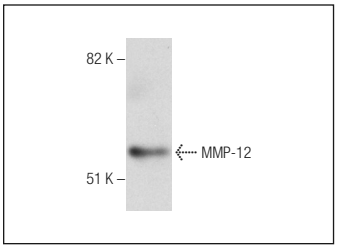
APPLICATIONS

MMP-12 (H-300) is recommended for detection of MMP-12 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); partially cross reactive with other MMP family members.

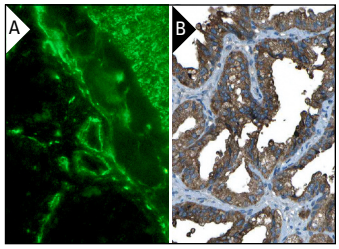
Suitable for use as control antibody for MMP-12 siRNA (h): sc-41557, MMP-12 siRNA (m): sc-41558, MMP-12 shRNA Plasmid (h): sc-41557-SH, MMP-12 shRNA Plasmid (m): sc-41558-SH, MMP-12 shRNA (h) Lentiviral Particles: sc-41557-V and MMP-12 shRNA (m) Lentiviral Particles: sc-41558-V.

Molecular Weight of MMP-12: 48 kDa.

DATA



MMP-12 (H-300): sc-30072. Western blot analysis of human recombinant MMP-12.



MMP-12 (H-300): sc-30072. Immunofluorescence staining of normal mouse intestine frozen section showing extracellular matrix staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing cytoplasmic staining of glandular tissue. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Shimizu, K., et al. 2004. Th2-predominant inflammation and blockade of IFN-γ signaling induce aneurysms in allografted aortas. J. Clin. Invest. 114: 300-308.
2. Rajendrasozhan, S., et al. 2010. Targeted disruption of NFκB1 (p50) augments cigarette smoke-induced lung inflammation and emphysema in mice: a critical role of p50 in chromatin remodeling. Am. J. Physiol. Lung Cell. Mol. Physiol. 298: L197-L209.
3. Yao, H., et al. 2013. SIRT1 redresses the imbalance of tissue inhibitor of matrix metalloproteinase-1 and matrix metalloproteinase-9 in the development of mouse emphysema and human COPD. Am. J. Physiol. Lung Cell. Mol. Physiol. 305: L615-L624.