SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-2 (5K162): sc-71595

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.

REFERENCES

1. Collier, I.E., et al. 1988. H-Ras oncogene-transformed human bronchial epithelial cells (TBE-1) secrete a single metalloprotease capable of degrading basement membrane collagen. J. Biol. Chem. 263: 6579-6587.
2. Huhtala, P., et al. 1990. Completion of the primary structure of the human type IV collagenase preproenzyme and assignment of the gene (CLG4) to the q21 region of chromosome 16. Genomics 6: 554-559.
3. Huhtala, P., et al. 1990. Structure of the human type IV collagenase gene. J. Biol. Chem. 265: 11077-11082.
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.
6. Machein, U., et al. 1997. Expression of several matrix metalloproteinase genes in human monocytic cells. Adv. Exp. Med. Biol. 421: 247-251.
7. Thant, A.A., et al. 1999. Ras pathway is required for the activation of MMP-2 secretion and for the invasion of Src-transformed 3Y1. Oncogene 18: 6555-6563.

CHROMOSOMAL LOCATION

Genetic locus: MMP2 (human) mapping to 16q12.2.

SOURCE

MMP-2 (5K162) is a mouse monoclonal antibody raised against recombinant MMP-2 of human origin.

PRODUCT

Each vial contains IgG_1 in 250 µl of PBS with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

APPLICATIONS

MMP-2 (5K162) is recommended for detection of latent and active MMP-2 of human origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200).

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

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

Molecular Weight of cleaved MMP-2: 63 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 2) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

SELECT PRODUCT CITATIONS

1. Heo, S.H., et al. 2011. Plaque pupture is a determinant of vascular events in carotid artery atherosclerotic disease: involvement of matrix metalloproteinases 2 and 9. J. Clin. Neurol. 7: 69-76.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.