SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-13 (W-16): sc-31811

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-13 (also designated collagenase-3) is produced by breast carcinomas and degrades collagen types I, II and III. MMP-13 has wide substrate specificity, and its physiologic expression is limited to situations in which rapid and effective remodeling of collagenous ECM takes place, such as fetal bone development and adult bone remodeling.

REFERENCES

1. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
2. 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.
3. Freije, J.M., et al. 1994. Molecular cloning and expression of collagenase-3, a novel human matrix metalloproteinase produced by breast carcinomas. J. Biol. Chem. 269: 16766-16773.
4. Machein, U., et al. 1997. Expression of several matrix metalloproteinase genes in human monocytic cells. Adv. Exp. Med. Biol. 421: 247-251.
5. Johansson, N., et al. 1997. Collagenase-3 (MMP-13) is expressed by hypertrophic chondrocytes, periosteal cells, and osteoblasts during human fetal bone development. Dev. Dyn. 208: 387-397.
6. Stahle-Bäckdahl, M., et al. 1997. Collagenase-3 (MMP-13) is expressed during human fetal ossification and re-expressed in postnatal bone remodeling and in rheumatoid arthritis. Lab. Invest. 76: 717-728.

CHROMOSOMAL LOCATION

Genetic locus: MMP13 (human) mapping to 11q22.2; Mmp13 (mouse) mapping to 9 A1.

SOURCE

MMP-13 (W-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MMP-13 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.

Blocking peptide available for competition studies, sc-31811 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MMP-13 (W-16) is recommended for detection of precursor and mature MMP-13 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MMP-13 (W-16) is also recommended for detection of precursor and mature MMP-13 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MMP-13 siRNA (h): sc-41559, MMP-13 siRNA (m): sc-41560, MMP-13 shRNA Plasmid (h): sc-41559-SH, MMP-13 shRNA Plasmid (m): sc-41560-SH, MMP-13 shRNA (h) Lentiviral Particles: sc-41559-V and MMP-13 shRNA (m) Lentiviral Particles: sc-41560-V.

Molecular Weight of MMP-13: 48 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Nagarajan, P., et al. 2009. Ets-1 induces dysplastic changes when expressed in terminally-differentiating squamous epidermal cells. PLoS ONE 4: e4179.
2. Matsui, H., et al. 2011. Expression of MMP-8 and MMP-13 in the development of periradicular lesions. Int. Endod. J. 44: 739-745.

RESEARCH USE

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

PROTOCOLS

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