SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-20 (T-16): sc-26926

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Matrix metalloproteinases (MMPs) are highly homologous Zn^{2+} endopeptidases involved in extracellular matrix (ECM) breakdown. MMP-20 (enamelysin) is involved in the degradation of various components of the ECM during development, hemostasis and pathological conditions. The domain organization of MMP-20 is similar to other MMPs, including a signal peptide, a prodomain with the conserved motif PRCGVPD involved in maintaining enzyme latency, a catalytic domain with a Zn-binding site and a COOH-terminal fragment similar to the sequence of hemopexin. MMP-20 is expressed during the early through middle stages of enamel development, at which time it likely hydrolyzes Amelogenin, a major protein component of the enamel matrix. The expression pattern of MMP-20 in the enamel organ indicates that it may be involved in the turnover of ECM proteins during tooth development and enamel formation. Human MMP-20 maps to chromosome 11q22.2, clustered to at least seven other members of the MMP gene family.

REFERENCES

1. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 2: 197-250.
2. Llano, E., et al. 1997. Identification and structural and functional characterization of human enamelysin (MMP-20). Biochemistry 49: 15101-15108.
3. Stracke, J.O., et al. 2000. Matrix metalloproteinases 19 and 20 cleave aggrecan and cartilage oligomeric matrix protein (COMP). FEBS Lett. 1-2: 52-56.

CHROMOSOMAL LOCATION

Genetic locus: MMP20 (human) mapping to 11q22.2; Mmp20 (mouse) mapping to 9 A1.

SOURCE

MMP-20 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MMP-20 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-26926 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.

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.

APPLICATIONS

MMP-20 (T-16) is recommended for detection of precursor and mature MMP-20 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MMP-20 siRNA (h): sc-41561, MMP-20 siRNA (m): sc-41562, MMP-20 shRNA Plasmid (h): sc-41561-SH, MMP-20 shRNA Plasmid (m): sc-41562-SH, MMP-20 shRNA (h) Lentiviral Particles: sc-41561-V and MMP-20 shRNA (m) Lentiviral Particles: sc-41562-V.

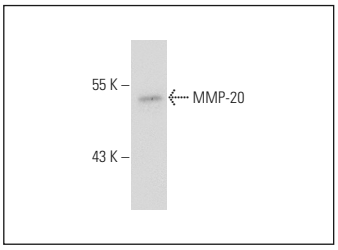
Molecular Weight of MMP-20: 54 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



MMP-20 (T-16): sc-26926. Western blot analysis of MMP-20 expression in KNRK whole cell lysate.

SELECT PRODUCT CITATIONS

1. Hu, B., et al. 2006. Bone marrow cells can give rise to ameloblast-like cells. J. Dent. Res. 85: 416-421.
2. Lee, H.K., et al. 2010. The odontogenic ameloblast-associated protein (ODAM) cooperates with RUNX2 and modulates enamel mineralization via regulation of MMP-20. J. Cell. Biochem. 111: 755-767.
3. Ozeki, N., et al. 2014. Differentiation of human skeletal muscle stem cells into odontoblasts is dependent on induction of α1 integrin expression. J. Biol. Chem. 289: 14380-14391.