SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-7 (JL07): sc-80205

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-7 (also designated Pump-1, matrilysin or uterine metalloproteinase) degrades casein, fibronectin and gelatin types I, III, IV and V. MMP-7 mRNA is produced exclusively by epithelial cells in mouse and expression is restricted to specific organs, suggesting that in addition to matrix degradation and remodeling, MMP-7 may be involved in the differentiated function of these organs.

REFERENCES

1. Muller, D., et al. 1988. The collagenase gene family in humans consists of at least four members. Biochem. J. 253: 187-192.
2. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: MMP7 (human) mapping to 11q22.2.

SOURCE

MMP-7 (JL07) is a mouse monoclonal antibody raised against the active and pro forms of MMP-7 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

MMP-7 (JL07) is recommended for detection of MMP-7 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); non cross-reactive with human MMP-1, -2, -3, -8, -9, -10, -12, and -13.

Suitable for use as control antibody for MMP-7 siRNA (h): sc-41553, MMP-7 shRNA Plasmid (h): sc-41553-SH and MMP-7 shRNA (h) Lentiviral Particles: sc-41553-V.

Molecular Weight of pro-MMP-7: 30 kDa.

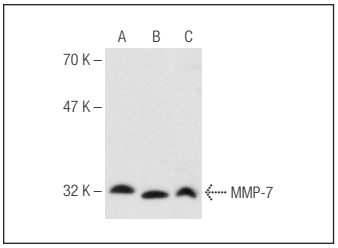
Molecular Weight of MMP-7 active form: 20 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, MIA PaCa-2 cell lysate: sc-2285 or A-431 whole cell lysate: sc-2201.

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.

DATA



MMP-7 (JL07): sc-80205. Western blot analysis of MMP-7 expression in A-431 (**A**), PC-3 (**B**) and MIA PaCa-2 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yu, W., et al. 2010. Genes regulated by Nkx2-3 in sporadic and inflammatory bowel disease-associated colorectal cancer cell lines. Dig. Dis. Sci. 55: 3171-3180.
2. Ikenaga, N., et al. 2010. $CD10^+$ pancreatic stellate cells enhance the progression of pancreatic cancer. Gastroenterology 139: 1041-1051, 1051.e1-1051.e8.
3. Ghasemi, A., et al. 2017. Leptin induces matrix metalloproteinase 7 expression to promote ovarian cancer cell invasion by activating ERK and JNK pathways. J. Cell. Biochem. 119: 2333-2344.
4. Sahu, U., et al. 2017. Induction of intestinal stemness and tumorigenicity by aberrant internalization of commensal non-pathogenic *E. coli*. Cell Death Dis. 8: e2667.
5. Zeng, B., et al. 2018. Downregulated miR-1247-5p associates with poor prognosis and facilitates tumor cell growth via DVL1/Wnt/β-catenin signaling in breast cancer. Biochem. Biophys. Res. Commun. 505: 302-308.
6. Phoomak, C., et al. 2019. O-GlcNAc-induced nuclear translocation of hnRNP-K is associated with progression and metastasis of cholangiocarcinoma. Mol. Oncol. 13: 338-357.
7. Loreto, C., et al. 2020. MMP-7 and MMP-9 are overexpressed in the synovial tissue from severe temporomandibular joint dysfunction. Eur. J. Histochem. 64: 3113.
8. Chen, Y.J., et al. 2020. Proteogenomics of non-smoking lung cancer in East Asia delineates molecular signatures of pathogenesis and progression. Cell 182: 226-244.e17.

RESEARCH USE

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