

Product Specification Sheet

Matrilysin/MMP7 Protein and Antibodies

Cat. # MMP71-M	Mouse Monoclonal Anti-Human MMP7 IgG, aff pure	SIZE: 100 ug
Cat. # MMP71-C	Purified recombinant Human MMP7 protein control for WB	SIZE: 100 ul

Defensins are a large family of broad-spectrum antimicrobial peptides, identified originally in leukocytes of rabbits and humans. The genes encoding human **α** and **β**-defensins are clustered in a contiguous segment of chromosome 8p23. Defensins are initially synthesized as inactive prodefensins with a signal peptide that is cleaved off by **Matrilysin/MMP7** (a tissue metalloproteinase) to generate mature and bioactive defensin peptide. Matrilysin is expressed in Paneth cell granules together with perhaps more than 20 different α -defensins (cryptidins). Disruption of the matrilysin gene prevents the normal posttranslational proteolytic activation of intestinal α -prodefensins.

Matrix metalloproteinase-7 (MMP-7) also known as matrilysin and PUMP (EC 3.4.24.23) cleaves a number of substrates including collagen types IV and X, elastin, fibronectin, gelatin, laminin and proteoglycans. MMP-7 is closely related to the stromelysin family members but is encoded by a different gene. MMP-7 is the smallest of all the MMPs consisting of a pro-peptide domain and a catalytic domain. It lacks the hemopexin-like domain common to other members of the MMPs. MMP-7 is secreted as a 28 kDa proenzyme and can be activated in vitro by organomercurials and trypsin and in vivo by MMP-3 to a 18 kDa active MMP-7 enzyme. Once activated, MMP-7 can activate pro-MMP-1 and pro-MMP-9 but not pro-MMP-2. MMP-7 is widely expressed having been reported in elevated levels in cycling endometrium as well as in colorectal cancers and adenomas, hepatocellular carcinomas, rectal carcinomas, and approximately 50% of gliomas.

Source of Antigen, Antibodies, and Storage

Antigen	Recombinant purified MMP-7 protein, rhMMP-7; Matrilysin; PUMP-1 (~19 Kda)
Ab Host/type	Mouse, monoclonal IgG2b, purified over Protein A/G-agarose (Cat # MMP71-M)
2-Ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Human recombinant MMP-7 protein (19.13 kDa) was expressed in E. coli protein and purified. For Western blot +ve control (**Cat # MMP71-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **MMP71-C** for good visibility with antibody Cat # **MMP71-M**. Store at -20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **MMP71-C** solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique). Recognizes both ~28-Kda latent and ~18-Kda active forms for MMP-7.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested

Specificity & Cross-reactivity

MMP71-M recognizes both latent (28 kda) and active forms (~18 kda) of human MMP7. Antibody crossreactivity in various other species is not established. Purified MMP-7 protein (**#MMP71-C**) can be used as positive control for Western.

General References: (1) Harder et al (1997) Nature 387, 861; Ganz T (1999) Science 286, 420; Yang D et al (1999) Science 286, 525; Wilson CL et al (1999) Science 286, 113-117; Cottman DW et al (1993) Intl J. Oncol. 2, 861-872; Wossner JF et al (1995) Methods Enzymol. 248, 485-495; Imai K et al (1995) J. Biol. Chem. 269, 2032-2040; Brunner KL et al (1995) Proc. Natl. Acad. Sci. 92, 7362-7366

*This product is for In vitro research use only.

Related material available from ADI

Antibodies alpha and beta-defensins and MMP7

Study distribution of proteins in pre-made **Kidney blots** from 7 defined regions of rat kidney

Recycle blots in Just 5-10 min. (use the same strip for various proteins) New formulation will strip antibodies in just a few minutes at room temp. (no boiling or pungent mercaptoethanol).

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