ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Matrilysin/MMP7 Protein and Antibodies

Cat. # MMP71-R	Purified recombinant Human MMP7 protein	**SIZE**: 25 ug
Cat. # MMP71-M	Mouse Monoclonal Anti-Human MMP7 Ig G	**SIZE**: 100 ug

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 classified into two families designated α – and β - based on distinctive, although similar, tri-disulfide linkages in the peptides. **β**-defensins are slightly larger and differ in the position and arrangement of 3 disulfides. In humans, six α –defensin (**cryptidins**), **HD 1-6** (HD1-4 are also known as **HNP1-4** for Human Neutrophil Peptides), and two β -defensins, **HBD-1 and HBD-2**, have been identified to date. Rat (**RBD-1 and RBD-2**) and mouse (**MBD1-4**) homologues of the human beta-defensin have also been identified.

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

Human MMP7 has been expressed and purified from E. coli. It is supplied in 150 mM NaCl, 10 mM HEPES, and 5 mM CaCl2, pH 7.4 (liquid or lyophilized). Purified MMP7 was used to raise mouse monoclonal (IgG2b). Antibodies were expanded as ascites, purified using Protein A/G, and provided as 100 ug (liquid or lyophilized) in PBS, pH 7.4 containing 0.1% sodium azide, and 0.2% BSA. **Lyophilized products** should be reconstituted in 100-200 ul water and gently mixed for 15 min at room temp. All peptide/antibody received in solution or reconstituted from lyophilized vials should be stored frozen at -20^{o}C or below in suitable aliquots. It is not recommended to store diluted solutions. Avoid repeated freeze and thaw.

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique).

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 and active forms of MMP7. Purified MMP7-R 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.

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