Data Sheet (Cat.No.TMPY-02689)

TargetMol

MMP-3 Protein, Human, Recombinant

General Information

Synonyms:	STMY;MMP-3;matrix metallopeptidase 3;CHDS6;STMY1;SL-1;STR1
Protein Construction:	A DNA sequence encoding the human MMP3 (AAA36321.1) N-terminal fragment (Tyr 18-Thr 272) was expressed and purified. Predicted N terminal: Met 1
Species:	Human
Expression Host:	E. coli
Accession:	AAA36321.1
Molecular Weight:	29 kDa (predicted); 34 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to cleave the fluorogenic peptide substrate, Mca-RPKPVE-Nva-WR-K (Dnp)-NH2. The specific activity is >300 pmoles/min/μg. (Activation description: The proenzyme needs to be activated by Chymotrypsin for an activated form)
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 10 mM CaCL2, 1uM ZnCL2, 50 mM NaCl, 0.5% Brij35, pH 7.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Matrix metallopeptidase 3 (abbreviated as MMP3) is also known as stromelysin 1 and progelatinase. MMP3 is a member of the matrix metalloproteinase (MMP) family whose members are involved in the breakdown of extracellular matrix in normal physiological processes, such as embryonic development, reproduction, tissue

remodeling, and disease processes including arthritis and metastasis. As a secreted zinc-dependent endopeptidase, MMP3 exerts its functions mainly in the extracellular matrix. This protein is activated by two major endogenous inhibitors: alpha2-macroglobulin and tissue inhibitors of metalloproteases (TIMPs). MMP3 plays a central role in degrading collagen types II, III, IV, IX, and X, proteoglycans, fibronectin, laminin, and elastin. Also, MMP3 can active other MMPs such as MMP1, MMP7, and MMP9, rendering MMP3 crucial in connective tissue remodeling. Dysregulation of MMPs has been implicated in many diseases including arthritis, chronic ulcers, encephalomyelitis, and cancer. Synthetic or natural inhibitors of MMPs result in inhibition of metastasis, while up-regulation of MMPs led to enhanced cancer cell invasion.

Reference

Sternlicht MD,et al.1999, The stromal proteinase MMP3/stromelysin-1 promotes mammary carcinogenesis. Cell. 98 (2): 137-46.

Yoon S,et al.(1999) Genetic analysis of MMP3, MMP9, and PAI-1 in Finnish patients with abdominal aortic or intracranial aneurysms. Biochem Biophys Res Commun. 265(2): 563-8.

Biondi ML,et al.(2000) MMP1 and MMP3 polymorphisms in promoter regions and cancer. Clin Chem. 46(12): 2023-4.