

Synonym

MMP1,CLG,CLGN

Source

Human MMP-1, His Tag (MM1-H5222) is expressed from human 293 cells (HEK293). It contains AA Phe 20 - Asn 469 (Accession # [NP_002412.1](#)). It needs to be activated by agents such as APMA in vitro to have hydrolytic activity.

Predicted N-terminus: Phe 20

Molecular Characterization

MMP-1(Phe 20 - Asn 469)
NP_002412.1 Poly-his

This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 53.1 kDa. The protein migrates as 55-60 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 µm filtered solution in 20 mM MES, 150 mM NaCl, pH6.0 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

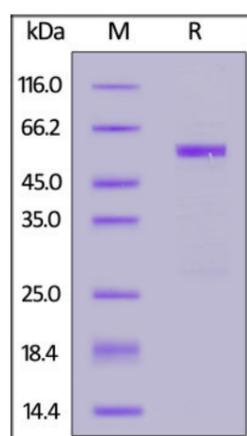
Storage

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

Human MMP-1, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity

It needs to be activated by agents such as APMA in vitro to have hydrolytic activity.

Background

Proteins of the matrix metalloproteinase (MMP) family are involved in the breakdown of extracellular matrix in normal physiological processes, such as embryonic development, reproduction, and tissue remodeling, as well as in disease processes, such as arthritis and metastasis. Most MMPs are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. The enzyme encoded by this gene degrades type IV and V collagens. Studies in rhesus monkeys suggest that the enzyme is involved in IL-8-induced mobilization of hematopoietic progenitor cells from bone marrow, and murine studies suggest a role in tumor-associated tissue remodeling. Thrombospondins, intervertebral disc proteins, regulate the effective levels of matrix metalloproteinases (MMPs) 2 and 9, which are key effectors of ECM remodeling.

Matrix metalloproteinase-1 (MMP-1) is also known as interstitial collagenase and fibroblast collagenase. MMP1 is expressed by fibroblasts, keratinocytes, endothelial cells, monocytes and macrophages. MMP-1 breaks down the interstitial collagens, types I, II, and III. MMP1 can degrade a broad range of substrates including types I, II, III, VII, VIII, and X collagens as well as casein, gelatin, myelin basic protein, LSelectin, proTNF, IL1 β , IGFBP3, IGFBP5, pro MMP2 and pro MMP9.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.