Human MMP-1 Protein, His Tag (active enzyme, MALS verified)

Catalog # MM1-H52H3

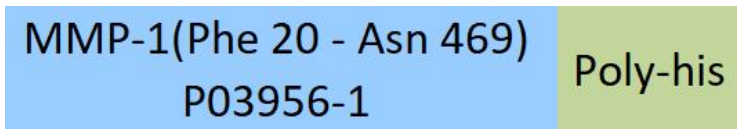
Synonym

MMP1,CLG,CLGN

Source

Human MMP-1 Protein, His Tag (MM1-H52H3) is expressed from human 293 cells (HEK293). It contains AA Phe 20 - Asn 469 (Accession # P03956-1). It needs to be activated by agents such as APMA in vitro to have hydrolytic activity.
Predicted N-terminus: Phe 20

Molecular Characterization



This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 53.7 kDa. The protein migrates as 51-61 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method / rFC method.

Purity

>95% as determined by SDS-PAGE.

Formulation

Supplied as 0.2 μm filtered solution in 25 mM MES, 150 mM NaCl, pH6.0 with trehalose as protectant.

Contact us for customized product form or formulation.

Shipping

This product is supplied and shipped with dry ice, please inquire the shipping cost.

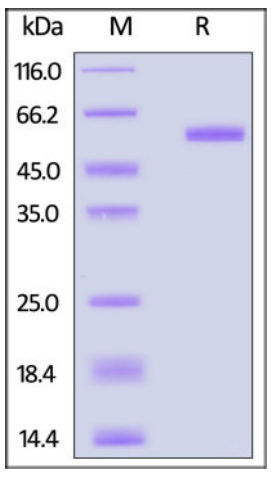
Storage

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

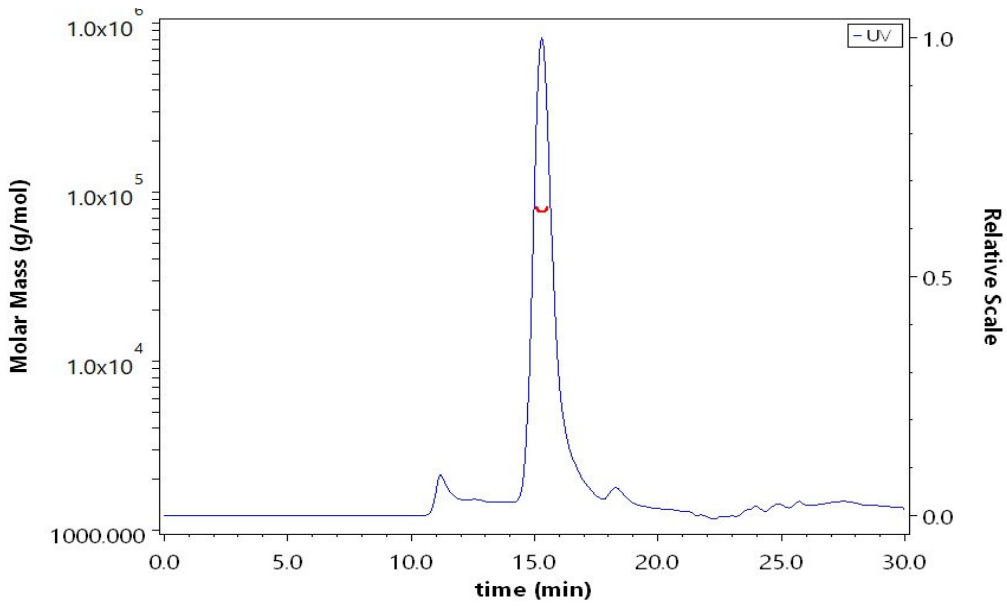
- The product MUST be stored at -70°C or lower upon receipt;
- -70°C for 3 months under sterile conditions.

SDS-PAGE



Human MMP-1 Protein, 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%.

SEC-MALS



The purity of Human MMP-1 Protein, His Tag (Cat. No. MM1-H52H3) is more than 85% and the molecular weight of this protein is around 60-80 kDa verified by SEC-MALS.
Report

Bioactivity

Measured by its ability to cleave a fluorogenic peptide substrate Mca-KPLGL-Dpa-AR-NH2. The specific activity is >400 pmol/min/μg (QC tested).

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, IL1β, IGFBP3, IGFBP5, pro MMP2 and pro MMP9.