Recombinant Human MMP1 Protein (His Tag)

Catalog Number:PKSH031542

Note: Centrifuge before opening to ensure complete recovery of vial contents.

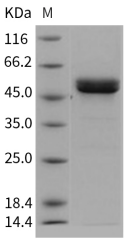
Description

Synonyms	Interstitial Collagenase;Fibroblast Collagenase;Matrix Metalloproteinase-1;MMP-1;MMP1;CLG
Species	Human
Expression Host	HEK293 Cells
Sequence	Met 1-Asn 469
Accession	NP_002412.1
Calculated Molecular Weight	54.8 kDa
Observed molecular weight	50-55 kDa
Tag	C-His
Bioactivity	Measured by its ability to cleave the fluorogenic peptide substrate, McaPLGL-Dpa-AR-NH2, R&D System, Cat#ES010.The specific activity is > 400 pmoles/min/μg(Activation description: The proenzyme needs to be activated by APMA for an activated form)

Properties

Purity	> 96 % as determined by reducing SDS-PAGE.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile 25mM MES, 10mM CaCl2, 150mM NaCl, 0.05% Brij 35, pH 5.5 Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printe
Reconstitution	Please refer to the printed manual for detailed information.

Data



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Background

MMP1, also known as MMP-1, contains 4 hemopexin-like domains and is a member of the matrix metalloproteinase (MMP) family. Matrix metalloproteases, also called matrixins, are zinc-dependent endopeptidases that are the major

proteases involved in ECM degradation. MMPs are capable of degrading a wide range of extracellular molecules and a number of bioactive molecules. MMP activity is regulated by two major endogenous inhibitors: alpha2-macroglobulin and tissue inhibitors of metalloproteases (TIMPs). MMPs play a central role in cell proliferation, migration, differentiation, angiogenesis, apoptosis and host defences. Dysregulatoin of MMPs has been implicated in many diseases including arthritis, chronic ulcers, encephalomyelitis and cancer. Tumour metastasis is a multistep process involving the dessemination of tumor cells from the primary tumor to secondarys at a distant organ or tissue. One of the first steps in metastasis is the degradation of the basement membrane, a process in which MMPs have been implicated. MMPs are secreted by tumor cells themselves or by surrounding stromal cells stimulated by the nearby tumor. MMP-1, -2, -3, -7, -9, -13 and -14 all have elevated expression in primary tumors and/or metastases. MMP-1 cleaves collagens of types I, II, and III at one site in the helical domain. It also cleaves collagens of types VII and X. In case of HIV infection, MMP1 interacts and cleaves the secreted viral Tat protein, leading to a decrease in neuronal Tat's mediated neurotoxicity.

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