



Recombinant Protein Technical Manual

Recombinant Human MMP1 Protein (His Tag)(Active)
RPES2223

Product Data:

Product SKU: RPES2223

Size: 10µg

Species: Human

Expression host: HEK293 Cells

Uniprot: NP_002412.1

Protein Information:

Molecular Mass:

AP Molecular Mass: 50-55 kDa

Tag: C-His

Bio-activity: 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)

Purity: > 96 % as determined by reducing SDS-PAGE.

Endotoxin: < 1.0 EU per µg as determined by the LAL method.

Storage: Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C 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

Reconstitution: Please refer to the printed manual for detailed information.

Application:

Synonyms: Interstitial Collagenase; Fibroblast Collagenase; Matrix Metalloproteinase; MMP; MMP1; CLG

Immunogen Information:

Sequence: Met 1-Asn 469

Background:

MMP1, also known as MMP, 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. Dysregulation of MMPs has been implicated in many diseases including arthritis, chronic ulcers, encephalomyelitis and cancer. Tumour metastasis is a multistep process involving the dissemination of tumor cells from the primary tumor to secondaries 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. Numerous studies have linked altered MMP expression in different human cancers with poor disease prognosis. MMP, -2, -3, -7, -9, 3 and 4 all have elevated expression in primary tumors and/or metastases. MMP 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.