MMP-2 Protein, Human (HEK293, His)

Cat. No.:	HY-P70268
Synonyms:	rHu72 kDa type IV collagenase/MMP-2, His ; 72 kDa Type IV Collagenase; 72 kDa Gelatinase; Gelatinase A; Matrix Metalloproteinase-2; MMP-2; TBE-1; MMP2; CLG4A
Species:	Human
Source:	HEK293
Accession:	P08253 (A30-C660)
Gene ID:	4313
Molecular Weight:	Approximately 66-72 kDa

PROPERTIES

AA Sequence	APSPIIKFPG DVAPKTDKEL AVQYLNTFYG CPKESCNLFV LKDTLKKMQK FFGLPQTGDL DQNTIETMRK PRCGNPDVAN YNFFPRKPKW DKNQITYRII GYTPDLDPET VDDAFARAFQ VWSDVTPLRF SRIHDGEADI MINFGRWEHG DGYPFDGKDG LLAHAFAPGT GVGGDSHFDD DELWTLGEGQ VVRVKYGNAD GEYCKFPFLF NGKEYNSCTD TGRSDGFLWC STTYNFEKDG KYGFCPHEAL FTMGGNAEGQ PCKFPFRFQG TSYDSCTTEG RTDGYRWCGT TEDYDRDKKY GFCPETAMST VGGNSEGAPC VFPFTFLGNK YESCTSAGRS DGKMWCATTA NYDDDRKWGF CPDQGYSLFL VAAHEFGHAM GLEHSQDPGA LMAPIYTYTK NFRLSQDDIK GIQELYGASP DIDLGTGPTP TLGPVTPEIC KQDIVFDGIA QIRGEIFFFK DRFIWRTVTP RDKPMGPLLV ATFWPELPEK IDAVYEAPQE EKAVFFAGNE YWIYSASTLE RGYPKPLTSL GLPPDVQRVD AAFNWSKNKK TYIFAGDKFW RYNEVKKKMD PGFPKLIADA WNAIPDNLDA VVDLQGGGHS YFFKGAYYLK LENQSLKSVK FGSIKSDWLG C
Biological Activity	Measured by its ability to cleave the fluorogenic peptide substrate, Mca-PLGL-Dpa-AR-NH2. The specific activity is 4214 pmol/min/μg, as measured under the described conditions. (The proenzyme needs to be activated by APMA for an activated form.)
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM Tris-HCl, 150 mM NaCl, pH 7.5.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is

	recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The MMP-2 protein, a ubiquitinous metalloproteinase, actively participates in a spectrum of physiological processes, including vasculature remodeling, angiogenesis, tissue repair, tumor invasion, inflammation, and atherosclerotic plaque rupture. Beyond its role in degrading extracellular matrix proteins, this protein demonstrates versatility by acting on non-matrix proteins, such as big endothelial 1 and beta-type CGRP, thereby promoting vasoconstriction. Additionally, it cleaves KISS at a Gly-|-Leu bond and appears to play a role in myocardial cell death pathways. By regulating the activity of GSK3beta and cleaving GSK3beta in vitro, it contributes to myocardial oxidative stress. In association with MMP14, MMP-2 is involved in the formation of fibrovascular tissues. Notably, the C-terminal non-catalytic fragment of MMP-2, known as PEX, possesses anti-angiogenic and anti-tumor properties, inhibiting cell migration and adhesion to FGF2 and vitronectin. Furthermore, it serves as a ligand for integrin alpha-v/beta3 on the surface of blood vessels.

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