Active Recombinant Human MMP12 protein, mutation F171D, No Activation Required

Cat. No. MMP12-33H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant matrix metalloproteinase-12 (MMP-12, metalloelastase, macrophage elastase) cloned from human cDNA, expressed in E. coli. The enzyme consists of the catalytic domain of human MMP-12 (residues 106-263, UniProtKB accession P39900) with the mutation F171D. The protein has been mutated to increase its stability, as the mutation drastically reduces the enzyme's rate of autoproteolysis. The catalytic activity rates are not affected by the mutation.
Species	Human
Source	E.coli
ProteinLength	106-263
Description	This gene encodes a member of the peptidase M10 family of matrix metalloproteinases (MMPs). Proteins in this 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. The encoded preproprotein is proteolytically processed to generate the mature protease. This protease degrades soluble and insoluble elastin. This gene may play a role in aneurysm formation and mutations in this gene are associated with lung function and chronic obstructive pulmonary disease (COPD). This gene is part of a cluster of MMP genes on chromosome 11.

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Bio-activity	> 40 U/μg. Activity described as U=100 pmol/min at 25 centigrade using a colorimetric assay with thiopeptide Ac-Pro-Leu-Gly-[2-mercapto-4-methyl-pentanoyl]-Leu-Gly-OC2H5 (Biomol) as substrate.
Molecular Mass	17.6 kDa
AA Sequence	M-GPVWRKHYITYRINNYTPDMNREDVDYAIRKAFQVWSNVTPLKFSKINTGMADILVVFARGAHGDDHAFDGKGGILAHAFGPGSGIGGDAHFDEDEFWTTHSGGTNLFLTAVHEIGHSLGLGHSSDPKAVMFPTYKYVDINTFRLSADDIRGIQSLYG
Purity	> 95% by SDS-PAGE. The protein is observed, in denaturing conditions, as a single band migrating at a molecular weight between 14.4 and 18.4 kDa.
Storage	At -80 centigrade. After initial defrost, aliquot the product into individual tubes and refreeze at -80 centigrade. Avoid repeated freeze/thaw cycles.
Concentration	0.2 mg/mL
Storage Buffer	Tris 20 mM pH 7.2, CaCl2 10 mM, ZnCl2 0.1 mM, NaCl 0.3 M, acetohydroxamic acid (AHA) 0.2 M. The concentration is calculated by the analysis of the absorbance at 280 nm, (ε280 = 26930 M-1cm-1 calculated).
Shipping	Dry Ice
References	1. I. Bertini, et al. Proc Natl Acad Sci U S A. 2005 Apr 12; 102(15):5334-9. 2. S.D. Shapiro. Curr. Opin. Cell Biol. 1998, 10, 602. 3. S.D. Shapiro et al. J. Biol. Chem. 1993, 268, 23824. 4. A. Belaaouaj et al. J. Biol. Chem. 1995, 270, 14568.

GENE INFORMATION

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Gene Name	MMP12 matrix metallopeptidase 12 [Homo sapiens (human)]
Official Symbol	MMP12
Synonyms	MMP12; matrix metallopeptidase 12; ME; HME; MME; MMP-12; macrophage metalloelastase; matrix metallopeptidase 12 (macrophage elastase); matrix metalloproteinase 12 (macrophage elastase); EC 3.4.24.65; EC # 3.4.24.65
Gene ID	4321
mRNA Refseq	NM_002426
Protein Refseq	NP_002417
MIM	601046
UniProt ID	P39900

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA