Recombinant Human MMP14(Membrane-inserted), Catalytic Domain

Cat. No. MMP14-160H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human matrix metalloproteinase-14 (MMP-14, Membrane-Type Matrix Metalloproteinase1, MT1-MMP) cloned from human cDNA was expressed in*E.coli*. The enzyme consists of the catalytic domain of human MMP-14 (residues 114-290 swissprot accession P50281) with a C-term purification tag. The protein has been mutated to increase the stability. The catalytic activity rates are not affected by the mutation. The C-terminal tag is cleaved during purification. MW=21.3kDa.
Species	Human
Source	E.coli
ProteinLength	114-290 a.a.
Description	Matrix metalloproteinase-14 is an enzyme that in humans is encoded by the MMP14 gene. 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 MMP"s are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. However, the protein encoded by this gene is a member of the membrane-type MMP (MT-MMP) subfamily; each member of this subfamily contains a potential transmembrane domain suggesting that these proteins are expressed at the cell surface rather than secreted. This protein activates MMP2 protein, and this activity may be involved in

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	tumor invasion.
Purity	> 95% by SDS-PAGE. The enzyme was observed as a single band migrating at a molecular weight of > 20kDa.
Specific Activity	>150U/μg. Activity described as U=100pmol/min at 25ºC using a colorimetric assay with thipeptolide Ac-Pro-Leu-Gly-[2-mercapto-4-methyl-pentanoyl]-Leu-Gly-OC_2H_5(Biomol) as substrate.
Usage	Enzyme kinetic studies, cleavage of target substrates and screening of inhibitors.
Supplied As	0.2mg/ml in 20mM Tris, pH7.2, 10mM $CaCl_2$, 0.1mM $ZnCl_2$, 0.3M NaCl, 0.5M Acetohydroxamic Acid (AHA). The concentration is calculated from the absorbance at 280nm (e280=33000M-1 cm-1).
Note	Under the above described conditions, to avoid precipitation or protein self digestion, the product can be concentrated to a maximum of 200μM.
Storage	-80ºC. The enzyme is stable at -20ºC for at least 1 week. After initial defrost, aliquot enzyme into individual tubes and refreeze at -80ºC. Avoid repeated freeze/defrost cycles.

GENE INFORMATION

Gene Name	MMP14 matrix metallopeptidase 14 (membrane-inserted) [Homo sapiens]
Synonyms	MMP14; matrix metallopeptidase 14 (membrane-inserted); MMP-X1; MTMMP1; MT1-MMP; MT1MMP; MT-MMP; matrix metalloproteinase 14; membrane type 1 metalloprotease; membrane-type matrix metalloproteinase 1; membrane-type-1 matrix metalloproteinase; matrix metalloproteinase 14 (membrane-inserted); MMP-14;

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	EC 3.4.24.80; Membrane-type-1 matrix metalloproteinase; Membrane-type matrix metalloproteinase 1
Gene ID	4323
mRNA Refseq	NM_004995
Protein Refseq	NP_004986
MIM	600754
UniProt ID	P50281
Chromosome Location	14q11-q12
Pathway	GnRH signaling pathway
Function	calcium ion binding; metalloendopeptidase activity; peptidase activator activity; peptidase activity; protein binding; zinc ion binding

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