

Active Recombinant Human MMP14

Cat. No. MMP14-808H Lot. No. (See product label)

SPECIFICATION

Product Overview

Active Matrix Metalloproteinase-14 (MMP-14, Membrane-Type Matrix Metalloproteinase 1, MT1-MMP) catalytic domain from human cDNA. The enzyme consists of the catalytic domain of human MMP-14 (Tyr112-Arg298, NM_004995) with a C-terminal purification tag. This represents a naturally-occurring active form of MMP-14 which lacks the C-terminal hemopexin domain. MMPs lacking this domain cannot cleave native collagens; however, activity toward other targets such as gelatin, casein, or peptide substrates is unaffected.

Species Human

Source E.coli

ProteinLength 112-298 a.a.

Description

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 tumor invasion.

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Form	Liquid. In 50mM TRIS, pH 7.5, containing 5mM calcium chloride, 300mM sodium chloride, 20µM zinc chloride, 0.5% Brij-35, and 30% glycerol.
Bio-activity	73 U/g. One U=100 pmol/min at 37°C using the colorimetric thiopeptolide Ac-Pro-Leu-Gly-S-Leu-Leu-Gly-OEt as substrate. Preincubation of MMP-14 catalytic domain at 1 3.6nM with the broad spectrum inhibitor GM6001 at 5nM for 1 hour inhibits enzymatic activity by 93%.
Molecular Mass	22.5 kDa
Applications	Study enzyme kinetics, cleave target substrates, and screen for inhibitors.
Stability	NOTE: When stored at -70°C, this enzyme is stable at the concentration supplied, in its current storage buffer. Procedures such as dilution of the enzyme followed by refreezing could lead to loss of activity.
Storage	-80°C

GENE INFORMATION

Gene Name	MMP14 matrix metalloproteinase 14 (membrane-inserted) [Homo sapiens(human)]
Official Symbol	MMP14
Synonyms	MMP14; 1; MMP-14; MMP-X1; MT-MMP; MT1MMP; MTMMP1; MT1-MMP; MT-MMP 1; matrix metalloproteinase 14 (membrane-inserted); matrix metalloproteinase-14; membrane type 1 metalloproteinase; membrane-type matrix metalloproteinase 1; membrane-type-1 matrix metalloproteinase; EC 3.4.24.80
Gene ID	4323

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mRNA Refseq	NM_004995
Protein Refseq	NP_004986
MIM	600754
UniProt ID	P50281
Chromosome Location	14q11-q12
Pathway	AGE/RAGE pathway; Degradation of collagen; Extracellular matrix organization
Function	calcium ion binding; metalloendopeptidase activity; sequence-specific DNA binding transcription factor activity

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