

Active Recombinant Human MMP14 protein

Cat. No. MMP14-1837H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human MMP14 (aa 89-265) was expressed in E. coli.

Species Human

Source E.coli

ProteinLength 89-265 a.a.

Description

MMP-14 is expressed in adult lung, placenta, kidney, ovaries, intestine, prostate and spleen. Increased amounts of the enzyme are found in tumor tissues as lung carcinoma, gastric carcinoma, colon, breast, head and neck carcinoma. MMP-14 is activated by removal of its prodomain. The reaction is catalyzed by furin, a subtilisin-type serine protease, which recognizes a motif of four basic amino acid residues located between prodomain and catalytic domain. MMP-14 activates pro-MMP-2 and pro-MMP-13 by proteolytic cleavage of their prodomains. The ability of MMP-14 to activate other MMPs provides potential for enhanced pericellular proteolysis in physiological and pathological processes. In particular, activation of pro-MMP-2 by MMP-14 is considered to contribute to local degradation of extracellular matrix during cell migration and proliferation. MMP-14 hydrolyzes also fibrillar collagens I, II and III into characteristic 3/4 and 1/4 fragments and it cleaves a number of other proteins of the extracellular matrix, among them fibronectin, vitronectin, laminin-1 and dermatan sulfate proteoglycan. The activity of MMP-14 is poorly inhibited by tissue inhibitor of matrix metalloproteinases-1 (TIMP-1), but efficiently inhibited by TIMP-2 and TIMP-3.

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Form	Liquid. In 50mM TRIS-HCl, pH 7.5, 150mM NaCl, 5mM CaCl ₂ .
Bio-activity	≥140mU/mg protein. One unit is defined as the amount of enzyme that hydrolyzes 1μmol Mca-Pro-Leu-Gly-Leu-Dpa-Ala-Arg-NH ₂ per min. at 37 centigrade, pH 7.5.
Molecular Mass	~20kDa (SDS-PAGE).
AA Sequence	Y89AIQGLKWKQHNEITFCIQNYTPKVGEYATYEAIRKAFRV WESATPLRFREVPYAYIREGHEKQADIMIFFAEGFHGDST PFDGEGGFLAHAYFPGPNIGGDTHFDSAEPWTVRNEDLN GNDIFLVAVHELGHALGLEHSSDPSAIMAPFYQWMDTENF VLPDDDRRGIQQLYGGESG265
Purity	≥95% (SDS-PAGE)
Applications	Used to study the activation of progelatinase A (matrix metalloproteinase 2) and the degradation of proteins of the extracellular matrix. The enzyme allows screening of matrix metalloproteinase inhibitors and characterization of inhibitor action.
Storage	Long Term Storage: -80 centigrade. Avoid freeze/thaw cycles.
Concentration	0.2mg/ml

GENE INFORMATION

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

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	matrix metalloproteinase
Gene ID	4323
mRNA Refseq	NM_004995
Protein Refseq	NP_004986
MIM	600754
UniProt ID	P50281
Chromosome Location	14q11.2
Pathway	AGE/RAGE pathway, organism-specific biosystem; Activation of Matrix Metalloproteinases, organism-specific biosystem; Degradation of the extracellular matrix, organism-specific biosystem
Function	calcium ion binding; metalloendopeptidase activity; protein binding

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