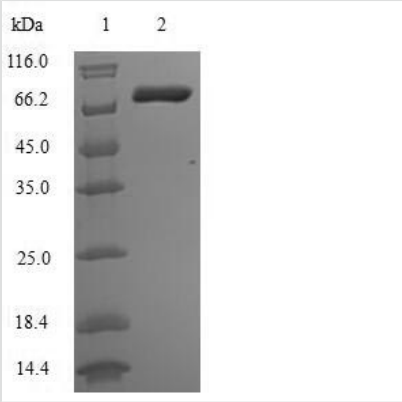
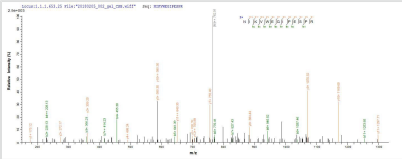
Recombinant Human Matrix metalloproteinase-14 (MMP14)

Product Code	CSB-EP014661HU
Relevance	Ses to specifically activate progelatinase A. May thus trigger invasion by tumor cells by activating progelatinase A on the tumor cell surface. May be involved in actin cytoskeleton reorganization by cleaving PTK7. Acts as a positive regulator of cell growth and migration via activation of MMP15. Involved in the formation of the fibrovascular tissues in association with pro-MMP2.
Abbreviation	Recombinant Human MMP14 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P50281
Alias	MMP-X1Membrane-type matrix metalloproteinase 1 ;MT-MMP 1 ;MTMMP1Membrane-type-1 matrix metalloproteinase ;MT1-MMP ;MT1MMP
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	YAIQGLKWQHNEITFCIQNYTPKVGEYATYEAIRKAFRVWESATPLRFREVPYA YIREGHEKQADIMIFFAEGFHGDSTPFDGEGGFLAHAYFPGPNIGGDTHFDSA EPWTVRNEDLNGNDIFLVAVHELGHALGLEHSSDPSAIMAPFYQWMDTENFV LPDDDRRGIQQLYGGESGFPTKMPPQPRTTSRPSVPDKPKNPTYGPNICDGN FDTVAMLRGEMFVFKERWFWRVRNNQVMDGYPMPIGQFWRGLPASINTAYE RKDGKFVFFKGDKHWVFDEASLEPGYPKHIKELGRGLPTDKIDAALFWMPNG KTYFFRGNKYYRFNEELRAVDSEYPKNIKVWEGIPESPRGSFMGSDEVFTYFY KGNKYWKFNNQKLKVEPGYPKSALRDWMGCPSGGRPDEGTEEETEVIIIEVD EEGGGAVSAAAVVLPVLLLLLVLAVGLAVFFFRRHGTPRRLLYCQRSLLDKV
Research Area	Cancer
Source	E.coli
Target Names	MMP14
Expression Region	112-582aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	69.9kDa
Protein Length	Full Length of Mature Protein

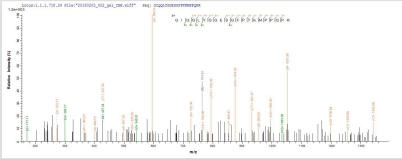
Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP014661HU could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) MMP14.



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP014661HU could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) MMP14.

Description

To make this Recombinant Human MMP14 protein, the MMP14 gene was isolated at first and cloned into an expression vector. CUSABIO has built a mature recombinant protein platform. This Recombinant Human MMP14 protein was developed in the platform. It was expressed in E.coli at the region of 112-582aa of the Human MMP14 protein. N-terminal 6xHis-SUMO tag was fused with the expression vector for affinity and purification purposes. The purity is 90%+ determined by SDS-PAGE.

MMP14 was first described by Sato et al. as a transmembrane protein which activates pro-MMP2 to induce tumor cell invasion. Most MMPs are secreted as inactive pro-proteinases that are activated by proteolytic cleavage. Active MMP14 binds to the metallopeptidase inhibitor, tissue inhibitor of metalloproteinases 2 (TIMP2), to form a receptor for proMMP2 activation. MMP14 knockout mice exhibit defects in skeletal development and angiogenesis, fibrosis of soft tissues, and premature death. This phenotype has been attributed largely to the importance of MMP14 in collagen turnover and bone remodeling. MMP14 is up-regulated in several types of cancer, promoting angiogenesis, inflammation, cancer cell invasion, and metastasis. In genetically-modified mouse models, MMP14 overexpression induces mammary gland adenocarcinoma formation and pancreatic cancer development. Other mouse models of epithelial cancers have also identified MMP14 expression, particularly in tumor-associated cells of the TME, to be involved in cancer progression. An MMP14-deficient breast cancer mouse model showed reduced metastasis; an effect attributed to the reduced collagen I degradation by stromal fibroblasts. Yet, the MMP14 gene expression across a variety of cancer types is highest in

	sarcomas, with the childhood rhabdomyosarcomas and Ewing sarcoma representing intriguing exceptions, suggesting that it may be a particularly important player in sarcoma biology.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.