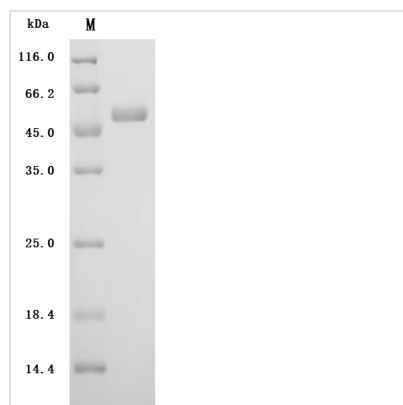


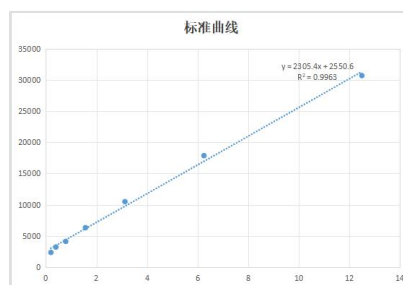


Recombinant Human Urokinase-type plasminogen activator(PLAU) (Active)

Product Code	CSB-MP360437HU
Abbreviation	Recombinant Human PLAU protein (Active)
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.	P00749
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 µm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully active measured by its ability to cleave a peptide substrate, N-carbobenzyloxy-Gly-Gly-Arg-7-amido-4-methylcoumarin (Z-GGR-AMC). PLAU needs to be activated by Plasmin to be enzymatically active. The specific activity is above 2000 pmol/min/ug.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	SNELHQVPSNCDCLNGGTCVSNKYFSNIHWCNCPKKFGGQHCEIDKSKTCYE GNGHFYRGKASTDTMGRPCLPWNSATVLQQTYHAHRSDALQLGLGKHNYCR NPDNRRRPWCYVQVGLKPLVQECMVHDCADGKKPSSPPEELKFQCGQKTLR PRFKIIGGEFTTIENQPWFAAIYRRHRGGSVTYVCGGSLISPCWVISATHCFIDY PKKEDIYVYLGRSRLNSNTQGEMKFEVENLILHKDYSADTLAHHNDIALLKIRSK EGRCAQPSRTIQTICLPSMYNDPQFGTSCEITGFGKENSTDYLYPEQLKMTVV KLISHRECQQPHYYGSEVTTKMLCAADPQWKTDSCQGDGGPLVCSLQGRM TLTGIVSWGRGCALKDKPGVYTRVSHFLPWIRSHTKEENGLAL
Source	Mammalian cell
Target Names	PLAU
Expression Region	21-431aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	47.9 kDa
Protein Length	Full Length of Mature Protein
Image	



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



Activity

Fully active measured by its ability to cleave a peptide substrate, N-carbobenzoyloxy-Gly-Gly-Arg-7-amido-4-methylcoumarin (Z-GGR-AMC). PLAU needs to be activated by Plasmin to be enzymatically active. The specific activity is above 2000 pmol/min/ug.

Description

The recombinant human Urokinase-type plasminogen activator (PLAU) production involves several key steps to ensure high purity, low endotoxin levels, and verified biological activity. First, the PLAU gene fragment (21-431aa) is cloned into a mammalian expression vector with a C-terminal 10xHis tag gene. The construct is transfected into suitable mammalian cells for expression optimization. After protein expression, the PLAU protein is purified using Ni-NTA affinity chromatography to achieve >95% purity, as confirmed by SDS-PAGE. Endotoxin levels are removed using endotoxin removal resins and reduced to <1.0 EU/μg measured by the LAL method. The harvested recombinant PLAU protein is tested for enzymatic activity by cleaving the substrate Z-GGR-AMC, with a specific activity >2000 pmol/min/μg.

Human PLAU (uPA) is a serine protease in the plasminogen activation system, which is essential for various physiological and pathological processes, including fibrinolysis, tissue remodeling, and cell migration.

The activation of uPA occurs when it binds to its specific receptor, the urokinase-type plasminogen activator receptor (uPAR), which is anchored to the cell membrane via a glycosyl-phosphatidylinositol (GPI) tail [4][5]. Activated uPA catalyzes the conversion of inactive plasminogen into plasmin, an active serine protease that degrades fibrin and other extracellular matrix components [1][2]. This enzymatic activity is important for processes such as wound healing, angiogenesis, and tumor invasion, where the breakdown of the extracellular matrix is necessary for cell movement and tissue restructuring [2][3]. This interaction also initiates intracellular signaling pathways that influence cell adhesion, migration, and proliferation [5][6].

The uPA-uPAR system is particularly significant in cancer biology, as it is often overexpressed in various tumors, contributing to cancer cell invasiveness and



metastasis [3][6]. The regulation of uPA activity is tightly controlled by plasminogen activator inhibitors (PAIs), particularly PAI-1 and PAI-2, which inhibit uPA and thus modulate its proteolytic activity [7]. This regulation is vital in maintaining a balance between tissue remodeling and pathological conditions such as cancer progression and chronic inflammation [3][7].

References:

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Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
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.