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Recombinant Human Cathepsin L Protein

Catalog No.: RP02825 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	1514	P07711

Tags
C-His

Synonyms
Procathepsin L; 3.4.22.15; Cathepsin L1; Major excreted protein; MEP;CTSL

Product Information

Source
HEK293 Cells

Purification
≥ 90 % as determined by SDS-PAGE.

Calculated MW
37.3 kDa

Observed MW
37 kDa

Endotoxin
< 1 EU/μg of the protein by LAL method.

Formulation
Lyophilized from a 0.22 μm filtered solution of 50 mM NaAc, 100 mM NaCl, pH 7.5.

Reconstitution
Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Cathepsin L is a lysosomal cysteine protease that plays a major role in intracellular protein catabolism, and is potent in degrading collagen, laminin, elastin, as well as alpha-1 protease inhibitor and other structural proteins of basement membranes. It is secreted by liver flukes at all stages of their development in the mammalian host, are believed to play important roles in facilitating parasite migration (tissue degradation), feeding and immuno-evasion. Like many proteases, Cathepsin L is synthesized as an inactive preproenzyme, and cleavage of the 96-residue proregion is necessary to generate the fully active 221-residue mature enzyme. Studies have demonstrated that cleavage of the proregion occur autocatalytically under acidic conditions. The enzyme takes part in nutrient acquisition by catabolizing host proteins to absorbable peptides, facilitates the migration of the parasite through the host intestine and liver by cleaving interstitial matrix proteins such as fibronectin, laminin and native collagen and is implicated in the inactivation of host immune defenses by cleaving immunoglobulins. Recently, Cathepsin L has been shown to suppress Th1 immune response in infected laboratory animals making them susceptible to concurrent bacterial infections. Cathepsin L is synthesized in large amounts and secreted by many malignantly transformed cells, and induced by growth factors and tumor promoters. In addition to its role in protein degradation, evidence has accumulated for the participation of Cathepsin L in various physiological and pathological processes, such as tumor invasion and metastasis, bone resorption, spermatogenesis, and arthritis. Accordingly, Cathepsin L may prove useful as a diagnostic or prognostic marker of human tumor malignancy.

Basic Information

Description
Recombinant Human Cathepsin L Protein is produced by HEK293 Cells expression system. The target protein is expressed with sequence (Thr18-Val333) of human Cathepsin L (Accession #NP_001903.1) fused with a 6×His tag at the C-terminus.

Bio-Activity

Storage
Store at -20℃.Store the lyophilized protein at -20℃ to -80 ℃ up to 1 year from the date of receipt.
After reconstitution, the protein solution is stable at -20℃ for 3 months, at 2-8℃ for up to 1 week.
Avoid repeated freeze/thaw cycles.

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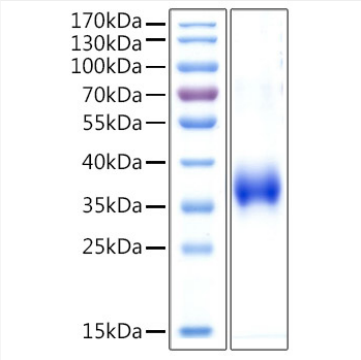
Validation Data



Recombinant Human Cathepsin L Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.