

Synonym

CTSB,CPSB,APPS

Source

Human Cathepsin B, His Tag(CTB-H5222) is expressed from human 293 cells (HEK293). It contains AA Arg 18 - Ile 339 (Accession # [P07858-1](#) (L26V)).

Predicted N-terminus: Arg 18 & Leu 80

Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus.

The Human Cathepsin B will be further processed into mature form (Leu 80-Ile 339). The protein has a calculated MW of 36.7 kDa (pro-form) and 29.5 kDa (mature-form). The protein migrates as 42-50 kDa and 34 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in 50 mM Tris, 150 mM NaCl, pH8.0 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

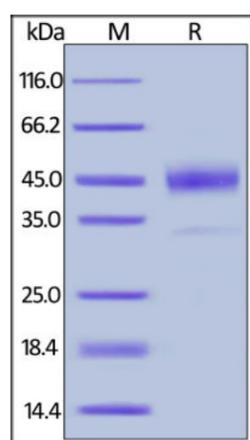
Storage

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

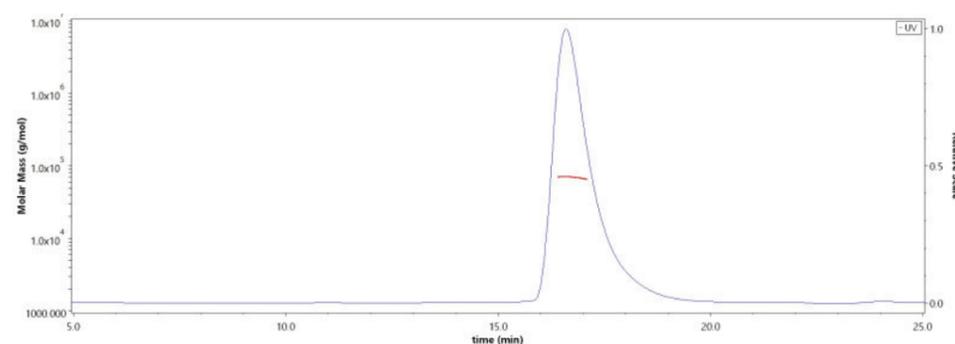
SDS-PAGE

Human Cathepsin B, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity

Measured by its ability to cleave the fluorogenic peptide substrate Z-LR-AMC.

The specific activity is $>2,500$ pmol/min/ μg , as measured under the described conditions (QC tested).

SEC-MALS

The purity of Human Cathepsin B, His Tag (Cat. No. CTB-H5222) is more than 90% and the molecular weight of this protein is around 60-75 kDa verified by SEC-MALS.

[Report](#)

Background

Cathepsin B (CTSB) is also known as APP secretase (APPS) and CPSB, is an enzymatic protein belonging to the peptidase C1 family. Cathepsin B / CTSB is synthesized as a proenzyme. Following removal of the signal peptide, the inactive proenzyme undergoes further modifications including removal of the pro region to result in the active enzyme. The catalytic activity of Cathepsin B / APPS contains: Hydrolysis of proteins with broad specificity for peptide bonds; Preferentially cleaves -Arg-Arg-|-Xaa bonds in small molecule substrates (thus differing from cathepsin L); In addition to being an endopeptidase, shows peptidyl-dipeptidase activity, liberating C-terminal dipeptides. As a thiol protease, cathepsin B / CPSB is believed to participate in intracellular degradation and turnover of proteins and has also been implicated in tumor invasion and metastasis. Overexpression of cathepsin B has been associated with esophageal adenocarcinoma and other tumors.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.