

Recombinant Human Cathepsin B/CTSB Protein (His Tag)

Catalog Number: PKSH031575

Note: Centrifuge before opening to ensure complete recovery of vial contents.

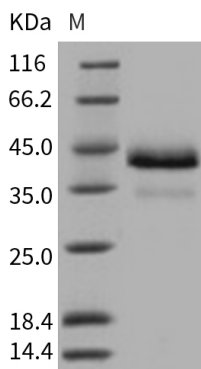
Description

| | |
|----------------------|---|
| Species | Human |
| Source | HEK293 Cells-derived Human Cathepsin B/CTSB protein Arg18-Ile339, with an C-terminal His |
| Calculated MW | 37.2 kDa |
| Observed MW | 36&43 kDa |
| Accession | NP_001899.1 |
| Bio-activity | Measured by its ability to cleave the fluorogenic peptide substrate Z-LR-AMC (R&D Systems, Catalog # ES008). The specific activity is > 2, 500 pmoles/min/μg. |

Properties

| | |
|-----------------------|---|
| Purity | > 97 % as determined by reducing SDS-PAGE. |
| Endotoxin | < 1.0 EU per μg of the protein as determined by the LAL method. |
| Storage | Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months. |
| Shipping | This product is provided as lyophilized powder which is shipped with ice packs. |
| Formulation | Lyophilized from sterile PBS, pH 7.4 Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual. |
| Reconstitution | Please refer to the printed manual for detailed information. |

Data



> 97 % as determined by reducing SDS-PAGE.

Background

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Cathepsin B is a papain-family cysteine protease that is normally located in lysosomes, where it is involved in the turnover of proteins and plays various roles in maintaining the normal metabolism of cells. This protease has been implicated in pathological conditions, e.g., tumor progression and arthritis. In disease conditions, increases in the expression of cathepsin B occur at both the gene and protein levels. Cathepsin B is synthesized as a preproenzyme and the primary pathways for its normal trafficking to the lysosome utilize mannose 6-phosphate receptors (MPRs). Mature cathepsin B has the ability to degrade several extracellular matrix components at both neutral and acidic pH and has been implicated in the progression of several human and rodent tumors progression and arthritis. Increased expression of cathepsin B in primary cancers, and especially in preneoplastic lesions, suggests that this enzyme might have pro-apoptotic features. Active cathepsin B is also secreted from tumours, a mechanism likely to be facilitated by lysosomal exocytosis or extracellular processing by surface activators. Cathepsin B is localized to caveolae on the tumour surface, where binding to the annexin II heterotetramer occurs. Thus CTSB is suggested as a tumor marker. Additionally, Cathepsin B can degrade extracellular matrix proteins, such as collagen IV and laminin, and can activate the precursor form of urokinase plasminogen activator (uPA), perhaps thereby initiating an extracellular proteolytic cascade.

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