# Recombinant Human Cystatin B/CSTB Protein (His Tag)

**Catalog Number: PKSH031609**

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

## Description

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|---|---|
| **Species** | Human |
| **Source** | E.coli-derived Human Cystatin B/CSTB protein Met 2-Phe 98, with an N-terminal His |
| **Calculated MW** | 12.5 kDa |
| **Observed MW** | 15 kDa |
| **Accession** | P04080 |
| **Bio-activity** | Measured by its ability to inhibit papain cleavage of a fluorogenic peptide substrate Z-FR-AMC (R &D Systems, Catalog # ES009). The $IC_{50}$ value is < 15 nM. |

## Properties

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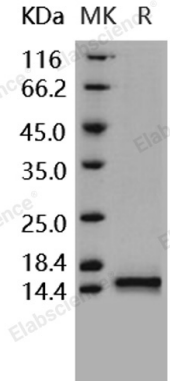
|---|---|
| **Purity** | > 95% as determined by reducing SDS-PAGE. |
| **Endotoxin** | Please contact us for more information. |
| **Storage** | Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. 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 50 mM Tris, 50 mM NaCl, pH 8.0<br>Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.<br>Please refer to the specific buffer information in the printed manual. |
| **Reconstitution** | Please refer to the printed manual for detailed information. |

## Data




> 95 % as determined by reducing SDS-PAGE.

## Background

Cystatin-B, also known as CPI-B, Liver thiol proteinase inhibitor, Stefin-B, CSTB and CST6, is a cytoplasm and nucleus protein which belongs to thecystatin family. Cystatin-B/CSTB is an intracellular thiol proteinase inhibitor. Tightly binding reversible inhibitor of cathepsins L, H and B. Cystatin-B/CSTB is able to form a dimer stabilized by noncovalent forces, inhibiting papain and cathepsins l, h and b. Cystatin-B/CSTB is also thought to play a role in protecting against the proteases leaking from lysosomes. Defects in Cystatin-B/CSTB are the cause of progressive myoclonic epilepsy type 1 (EPM1) which is an autosomal recessive disorder characterized by severe, stimulus-sensitive myoclonus and tonic-clonic seizures. The cystatins are a family of cysteine protease inhibitors with homology to chicken cystatin. Cystatins are physiological inhibitors of cysteine proteinases which are widely distributed in human tissues and fluids. Cystatins typically comprise about 115 amino acids, are largely acidic, contain four conserved cysteine residues known to form two disulfide bonds. Cystatins may be glycosylated and/or phosphorylated, with similarity to fetuins, kininogens, stefins, histidine-rich glycoproteins and cystatin-related proteins. Some of the members are active cysteine protease inhibitors, while others have lost or perhaps never acquired inhibitory activity. Cystatins mainly inhibit peptidases belonging to peptidase families C1 (papain family) and C13 ( legumain family).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