

## Cystatin F/CST7 Protein, Human, Recombinant

### General Information

Synonyms:	cystatin F (leukocystatin);CMAP
Protein Construction:	The mature form of the human Cystatin F (NP_003641.3) (Met 1-His 145) with five amino acids (DDDDK) at the C-terminus was expressed and purified. Predicted N terminal: Gly 20
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O76096
Molecular Weight:	15.2 kDa (predicted); 25 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, pH 8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

The cystatin superfamily members are important natural cysteine protease inhibitors present in a wide variety of organisms and are divided into three classes. Cystatin F, also known as leukocystatin and CMAP (Cystatin-like Metastasis-Associated Protein), is a type 2 cystatin and its expression is limited to hematopoietic cells, with the highest expression levels being observed in monocytes, dendritic cells, and certain types of T-cells. Furthermore, cystatin F mRNA becomes up-regulated during dendritic cell maturation, and thus suggests a specific role of

cystatin F in immune regulation. Cystatin F is produced as a dimer, an inactive cathepsin inhibitor which is activated by chemical reduction. In addition, Cystatin F and its homologues have been observed expressing in various human cancer cell lines established from malignant tumors, and thus indicates a new diagnosis and prevention approach of certain human carcinomas metastasis.

### Reference

Halfon S., et al.,(1998), Leukocystatin, a new class II cystatin expressed selectively by hematopoietic cells. J. Biol. Chem. 273:16400-16408.

Ni J., et al., (1998), Cystatin F is a glycosylated human low molecular weight cysteine proteinase inhibitor. J. Biol. Chem. 273:24797-24804.

Morita M., et al.,(2000), Genomic construct and mapping of the gene for CMAP (leukocystatin/cystatin F, CST7) and identification of a proximal novel gene, BSCv (C20orf3). Genomics 67:87-91.

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