

Cystatin F/CST7 Protein, Human, Recombinant (hFc)

General Information

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| Synonyms: | cystatin F (leukocystatin);CMAP |
| Protein Construction: | A DNA sequence encoding the human Cystatin F precursor (NP_003641.3) (Met 1-His 145) was expressed with the fused Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gly 20 |
| Species: | Human |
| Expression Host: | HEK293 Cells |
| Accession: | O76096 |
| Molecular Weight: | 41.3 kDa (predicted); 50 kDa (reducing condition, due to glycosylation) |

QC Testing

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| Biological Activity: | Measured by its ability to inhibit active Cathepsin L cleavage of a fluorogenic peptide substrate Z-LR-AMC. The IC50 value is <5 nM. |
| Purity: | > 97 % 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 PBS, pH7.4. 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:
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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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