

## Cystatin A Protein, Human, Recombinant (His)

### General Information

Synonyms:	STFA;STF1;cystatin A;AREI
Protein Construction:	Ile2-Phe98
Species:	Human
Expression Host:	E. coli
Accession:	P01040
Molecular Weight:	11.8 kDa (predicted); 14 kDa (reducing conditions)

### 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 0.2 μm filtered solution of 20mM Tris-HCl, 100mM NaCl, pH 8.0.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### 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

Cystatin-A, also known as Cystatin-AS, Stefin-A and CSTA, is a cytoplasm protein which belongs to the cystatin family. Cystatin-A / CSTA is a cysteine proteinase inhibitor with a molecular mass of 11 kDa, and is located mainly in the keratohyaline granules of the stratum granulosum and the cornified envelope of the stratum corneum in the epidermis. 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).

### Reference

Machleidt W., et al., (1983), Protein inhibitors of cysteine proteinases. II. Primary structure of stefin, a cytosolic protein inhibitor of cysteine proteinases from human polymorphonuclear granulocytes. *Hoppe-Seyler's Z. Physiol. Chem.* 364:1481-1486.

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Kartasova T., et al., (1987), Effects of UV, 4-NQO and TPA on gene expression in cultured human epidermal keratinocytes. *Nucleic Acids Res.* 15:5945-5962.

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