

Serpine A3 Protein, Human, Recombinant (His)

General Information

Synonyms:	ACT;GIG25;serpin peptidase inhibitor, clade A (alpha-1 antitrypsin, antitrypsin), member 3;GIG24;SERPINA3;AACT;MGC88254;serpin peptidase inhibitor, clade A (α -1 antitrypsin, antitrypsin), member 3
Protein Construction:	A DNA sequence encoding the human SERPINA3 (NP_001076.2) (Met 1-Ala 423) was expressed, with a C-terminal polyhistidine tag. Predicted N terminal: Asn 26
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P01011
Molecular Weight:	46.5 kDa (predicted); 45 kDa and 55-70 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to inhibit trypsin cleavage of a fluorogenic peptide substrate, Mca-RPKPVE-Nval-WRK(Dnp)-NH ₂ . The IC ₅₀ value is < 5 nM.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 25 mM HEPES, 0.15M NaCl, pH 7.8. 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

Serpine A3, also known as Alpha 1-antichymotrypsin (AACT), is a plasma alpha globulin glycoprotein, and is a member of serpin superfamily of the serine protease inhibitors consisting of at least 35 members. Serpine A3 has been demonstrated to inhibit the activity of certain serine proteases, such as cathepsin G found in neutrophils, and

chymases present in mast cells, by inducing a major conformational rearrangement, and thus protects some tissues from damage caused by proteolytic enzymes. This enzyme is produced primarily in the liver, and is identified as an acute-phase inflammatory protein. SerpinA3 deficiency has been associated with liver disease, and mutations of this gene have been observed in patients with Parkinson disease and chronic obstructive pulmonary disease. Besides, ACT gene polymorphism has been implicated with Alzheimer's disease (AD), cerebral amyloid angiopathy (CAA), as well as stroke, since SerpinA3 is a major constituent of the plaques in AD and an inhibitor of amyloid beta peptide degradation.

Reference

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Eriksson, S. et al., 1995, Proc. Natl. Acad. Sci. USA. 92: 2313-2317.
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