

Serpin B3 Protein, Human, Recombinant (His)

General Information

Synonyms:	T4-A;HsT1196;serpin peptidase inhibitor, clade B (ovalbumin), member 3;SCC;SCCA1;SCCA-1;SCCA-PD
Protein Construction:	A DNA sequence encoding the human SERPINB3 (AAB20405.1) (Asn 2-Pro 390) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	AAB20405.1
Molecular Weight:	46.7 kDa (predicted); 43 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to inhibit active Cathepsin L cleavage of a fluorogenic peptide substrate Z-LR-AMC. The IC50 is < 5 nM.
Purity:	> 90 % 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 20 mM Tris, 500 mM NaCl, pH 7.4, 20% gly, 3 mM DTT. 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

SERPINB3, also known as SCCA-1, belongs to the serpin family. Serpins are a group of proteins with similar structures that were first identified as a set of proteins able to inhibit proteases. The acronym serpin was originally coined because many serpins inhibit chymotrypsin-like serine proteases. SERPINB3 is expressed in some hepatocellular carcinoma (at protein level). Its expression is closely related to cellular differentiation in both

normal and malignant squamous cells. It seems to also be secreted in plasma by cancerous cells but at a low level. SERPINB3 significantly attenuates apoptosis by contrasting cytochrome c release from the mitochondria and by antichemotactic effect for NK cells. It may act as a protease inhibitor to modulate the host immune response against tumor cells and may be involved in the malignant behavior of squamous cell carcinoma cells.

Reference

- Schneider SS, et al. (1995) A serine proteinase inhibitor locus at 18q21.3 contains a tandem duplication of the human squamous cell carcinoma antigen gene. Proc Natl Acad Sci. 92(8):3147-51.
- Suminami Y, et al. (1992) Squamous cell carcinoma antigen is a new member of the serine protease inhibitors. Biochem Biophys Res Commun. 181(1):51-8.
- Mino-Miyagawa N, et al. (1990) Tumor-antigen 4. Its immunohistochemical distribution and tissue and serum concentrations in squamous cell carcinoma of the lung and esophagus. Cancer. 66(7):1505-12.

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