

Native Human Serpin Peptidase Inhibitor, Clade A (alpha-1 antiproteinase, antitrypsin), Member 1

Cat. No. SERPINA1-5358H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Native humanSERPINA1 is a serum glycoprotein synthesized in the liver. Its molecularweight is 51000 Dalton.
Species	Human
Source	Human Plasma
Description	SERPINA1 acts as anelastase inhibitor, primarily inhibiting neutrophil elastase, chymotrypsin,collagenase, leucocytic proteases, plasmin, and thrombin, which may bereleased during inflammatory reactions in the lung. Human SERPINA1 consistsof a single polypeptide chain and exists in a number of genetic variants. Inthe absence of human SERPINA1, these enzymes are not inhibited and they maydigest pulmonary parenchyma. Human API deficiency is associated with chronicobstructive lung disease (emphysema) and less frequently with hepaticcirrhosis in infants and respiratory distress of the newborn. Increase inhuman SERPINA1 occurs as an acute phase response to tissue necrosis andinflammation. Serum level of human SERPINA1 is elevated in rheumatoidarthritis, bacterial infections, vasculitis, and carcinomatosis. Incolorectal and lung carcinomas, human SERPINA1 has also related to theirinvasive and metastatic capacity. The average level of human SERPINA1 inplasma is 1.3 g/L.
Form	Sterile filteredliquid in PBS + 7 mg NaCl

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Concentration	20.0 mg/ml
Molecular Weight	51.0 kDa
Purity	> 95% as determined by RP-HPLC and SDS-PAGE analyses.
Endotoxin Level	< 0.1 ng/g of SERPINA1
Biological Activity	1-4 mg will inhibit 1.0 mg of trypsin with activity of 10,000 BAEE units per mg protein. 2-6 mg will inhibit approximately 1.0 mg of α-chymotrypsin with activity of 40-50 BTEE units per mg protein.
Storage	Store at 2-4°C. Do Not Freeze.
Official Symbol	SERPINA1
Pathways	Complement and Coagulation Cascades; FOXA1 transcription factor network; Hemostasis; Platelet activation, signaling and aggregation; Platelet degranulation; Response to elevated platelet cytosolic Ca ²⁺

GENE INFORMATION

Gene Name	SERPINA1 serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1 [Homo sapiens]
Synonyms	SERPINA1; serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1; serine (or cysteine) proteinase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1PI; PI; A1A; AAT; PI1; A1AT; MGC9222; PRO2275; MGC23330; alpha1AT; alpha-1-antitrypsin; protease inhibitor 1 (anti-elastase), alpha-1-antitrypsin; Alpha-1 protease inhibitor; Alpha-1-antiproteinase; Serpin A1; SPAAT; PRO0684; PRO2209

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Gene ID	5265
mRNA Refseq	NM_001127707
Protein Refseq	NP_001121179
MIM	107400
UniProt ID	P01009
Chromosome Location	14q32.1
Function	protease binding;protein binding; serine-type endopeptidase inhibitor activity
Crystal structure of serpin A1 (red) in an inhibitory complex with pancreatic elastase (blue). Rendered from PDB 2D26. 	