

# Human Alpha-1 Proteinase Inhibitor (A1AT)

## Certificate of Analysis and Data Sheet

➤ <b>Source:</b>	➤ <b>Catalog No.</b>
Human Plasma	PRO-355

### ➤ **Description :**

Alpha 1-proteinase inhibitor (alpha 1 Antitrypsin ) is a serum glycoprotein synthesized in the liver. It acts as an elastase inhibitor, primarily inhibiting neutrophil elastase, chymotrypsin, collagenase, leucocytic proteases, plasmin, and thrombin, which may be released during inflammatory reactions in the lung. Alpha-1 AntiTrypsin consists of a single polypeptide chain, which has a molecular weight of 51kDa. It exists in a number of genetic variants. In the absence of A1AT, these enzymes are not inhibited and they may digest pulmonary parenchyma. A1AT deficiency is associated with chronic obstructive lung disease (emphysema) and less frequently with hepatic cirrhosis in infants and respiratory distress of the newborn. Increase in A1AT occurs as an acute phase response to tissue necrosis and inflammation. Serum level of A1AT is elevated in rheumatoid arthritis, bacterial infections, vasculitis, and carcinomatosis. In colorectal and lung carcinomas, A1AT has also related to their invasive and metastatic capacity. The average level of A1AT in plasma is 1.3g/L.

A1AT is purified by proprietary chromatographic techniques

### ➤ **Physical Appearance:**

Sterile Filtered White Lyophilized (freeze-dried) powder.

### ➤ **Formulation:**

A1AT, contains no additives.

### ➤ **Solubility:**

It is recommended to reconstitute the lyophilized Alpha-1 AntiTrypsin in sterile 18MO-cm H<sub>2</sub>O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

### ➤ **Stability:**

Lyophilized Alpha-1 AntiTrypsin although stable at room temperature for 3 weeks, should be stored desiccated below -18 C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

**Please avoid freeze-thaw cycles.**

➤ **Purity:**

Greater than 95.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

➤ **Dimers and aggregates:**

Less than 1% as determined by silver-stained SDS-PAGE gel analysis.

➤ **Endotoxin:**

Less than 0.1 ng/μg (IEU/μg) of Alpha-1 Proteinase Inhibitor .

Each unit of plasma has been tested for HBsAg, Anti-HIV-1/2 plus O and Anti-HCV by using the imported kits which are approved by Federal Drug Administration (FDA).

➤ **Usage:**

This material is offered for research, laboratory or further evaluation purposes.