

Product Data Sheet

Human alpha 1 antitrypsin Protein

□ # **A1AT15-N** Alpha 1-Antitrypsin, Human Plasma **Size:** 1 mg

Alpha 1-Antitrypsin or α 1-antitrypsin (A1AT) is a protease inhibitor belonging to the serpin superfamily. It is generally known as serum trypsin inhibitor. Alpha 1-antitrypsin is also referred to as alpha-1 proteinase inhibitor (A1PI) because it inhibits a wide variety of proteases. It protects tissues from enzymes of inflammatory cells, especially neutrophil elastase, and has a reference range in blood of 1.5 - 3.5 gram/liter (in US the reference range is generally expressed as mg/dL or micromoles), but the concentration can rise manyfold upon acute inflammation.[2] In its absence, neutrophil elastase is free to break down elastin, which contributes to the elasticity of the lungs, resulting in respiratory complications such as emphysema, or COPD (chronic obstructive pulmonary disease) in adults and cirrhosis in adults or children.

Most serpins inactivate enzymes by binding to them covalently, requiring very high levels to perform their function. In the acute phase reaction, a further elevation is required to "limit" the damage caused by activated neutrophil granulocytes and their enzyme elastase, which breaks down the connective tissue fiber elastin. Like all serine protease inhibitors, A1AT has a characteristic secondary structure of beta sheets and alpha helices. Mutations in these areas can lead to non-functional proteins that can polymerise and accumulate in the liver (infantile hepatic cirrhosis)

A1AT is a single-chain glycoprotein consisting of 394 amino acids in the mature form and exhibits a number of glycoforms. Normal A1AT is termed M, as it migrates toward the center of such an IEF gel. Other variants are less functional, and are termed A-L and N-Z, dependent on whether they run proximal or distal to the M band. An acute-phase plasma protein found at 290 mg per 100 ml that functions as a protease inhibitor.

Source of protein

#A1CT15-N-100 (purified protein)



Human alpha-1 AT is purified from plasma (>99%, ~52 Kda, single arc corresponding to A1T in IEP Vs anti-normal human serum). All human derived material has been tested negative for HIV, HCV, and HbSAg. Nevertheless, all precautions should be taken and samples be treated as potentially hazardous.

It is supplied lyophilized in a buffer (30 mM NaPi, pH 6.5, 300 mM NaCl). Reconstitue lyophilized protein in water at >100 ug/ml.

The powder should be stored in the freezer (-20 °C). If properly stored, these products have a shelf life of at least two years. Solutions lose <2 % of their activity per week if stored at -20 °C.

Recommended usage

-As antigens for ELISA, western

-for affinity column preparation to enrich or remove human anti-Tg antibodies from serum or plasma

Optimum concentrations for a given application must be determined by the user

References: Gettins PG (2002) Chem. Rev. 102, 4751; DeMeo DI (2004) Torax 59, 259-264; Kolarich D (2006) Proteomics 6, 3369-3380; Kolarich D (2006) Transfusion 46, 1959-1977; kalsheker 91989) Biosci. Rep. 9, 129-138; Carell RW (1982) Nature 298, 329-334; Coakley RJ (2001) Am. J. Med. Sci. 321, 33-41;

For in vitro research use only

Related Material available for ADI

Catalog#	ProdDescription
A1AT11-A	Anti-Human Alpha 1-Antitrypsin IgG, unlabeled
A1AT11-BT	Anti-Human Alpha 1-Antitrypsin IgG, Biotin conjugate
A1AT11-C	Alpha 1-Antitrypsin, Human protein control for WB
A1AT11-HRP	Anti-Human Alpha 1-Antitrypsin IgG, HRP conjugate
A1AT15-N	Alpha 1-Antitrypsin, Human Plasma
MA-20350	Mouse Monoclonal Anti-Human Alpha 1-antitrypsin (AAT)

A1AT15-N 130122A

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com