

****REPRESENTATIVE DATASHEET****

Goat anti-human α_1 Antitrypsin (α_1 AT)

Whole IgG from antiserum

10 mg

Product #: GA1AT-IG

Lot #: XXXX

Expiry date: XXXX

Store at -10 to -20°C

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For Research Use Only.
Not for use in diagnostic procedures.

Description of α_1 Antitrypsin (α_1 AT)

α_1 Antitrypsin (α_1 AT), also known as α_1 Proteinase inhibitor (α_1 PI), is the most abundant protease inhibitor in blood and a member of the SERPIN family of proteinase inhibitors. Serum levels are typically 1.3 mg/ml (25 μM) but α_1 AT is an acute phase protein and concentrations can rise four-fold during inflammatory episodes or tissue injury. Low levels in circulation have been associated with pulmonary disease such as emphysema. α_1 AT is a single chain molecule with a mass of 52,000 daltons that is produced primarily in the liver and to a lesser extent by blood monocytes and intestinal epithelium. Based on association rates, the primary target enzyme for α_1 AT is believed to be neutrophil elastase^{1,2}, but α_1 AT is a broad-spectrum inhibitor for many serine proteinases and the main role of α_1 AT *in vivo* is likely that of a “backup” inhibitor and proteinase scavenger in fluids and tissues. Although the association rates of α_1 AT with other enzymes are lower, the high concentration in plasma makes it an important inhibitor of activated Protein C, activated FXI, thrombin and plasmin¹⁻⁴. Enzyme inhibition by α_1 AT occurs through proteolytic cleavage between Met³⁵⁸ and Ser³⁵⁹, which induces a conformational change in α_1 AT locking the enzyme into a stable, inactive 1:1 enzyme-inhibitor complex.

REFERENCES and REVIEWS

1. Johnson D, Travis J; Oxidative Inactivation of Human α -1-Proteinase Inhibitor; JBC 254, pp4022-4026, 1979.
2. Travis J, Johnson D; Human α -1-Proteinase Inhibitor; Methods in Enzymology, 80, pp 754-765, 1981.
3. Heeb MJ, Griffin JH; Physiologic Inhibition of Human Activated Protein C by α -1-Trypsin Inhibitor; JBC 263, pp1163-11616, 1988.
4. Scott CF, Schapira M, James HL, Cohen AB, Colman RW; The Inactivation of Factor XIa by plasma protease inhibitors: Predominant role of α 1protease inhibitor and protective effect of high molecular weight kininogen. J Clin Invest 69, pp 844, 1982.

Product Specifications

Description:

Vial containing XXXX ml of whole IgG, representing approximately 1 ml of antiserum. Total protein is 10 mg.

Format:

Whole IgG, clear liquid.

Host Animal:

Goat

Immunogen:

Human α_1 antitrypsin purified from plasma.

Concentration:

IgG concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient ($E^{1\%_{280}}$) of 13.4.

Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

Storage:

Store between -10 and -20°C . Product will become viscous but will not freeze. Avoid storage in frost-free freezers. Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use.

Specificity:

This antibody is specific for α_1 AT as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable for use as a source of antibodies to human α_1 AT.

Neutralizing activity:

Not determined

Species Cross Reactivity: (immunodiffusion vs. citrated plasma)

Human:	XXXX	Mouse:	XXXX	Rat:	XXXX
Rabbit:	XXXX	Pig:	XXXX	Dog:	XXXX

Related Products:

Cat #: **GA1AT-AP** Goat anti-human α_1 AT, affinity purified IgG
 Cat #: **SA1AT-IG** Sheep anti-human α_1 AT, whole IgG from antiserum
 Cat #: **SA1AT-AP** Sheep anti-human α_1 AT, affinity purified IgG
 Cat #: **SA1AT-APHRP** Sheep anti-human α_1 AT, APIgG-peroxidase
 Cat #: **A1AT-EIA** Paired antibody set for ELISA of α_1 AT , 5 x 96 wells
 Cat #: **APCAT-EIA** Paired antibody set for ELISA of APC- α_1 AT complexes

Visit our site (www.affinitybiologicals.com) for details.

Limited Warranty: This product is warranted to perform in accordance with its labeling and literature. Affinity Biologicals Inc. disclaims any implied warranty of merchantability or fitness for any other purposes, and in no event will Affinity Biologicals Inc. be liable for any consequential damages arising out of aforesaid express warranty.

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