

## Product datasheet

# Human alpha 1 Antitrypsin ELISA Kit (SERPINA1) ab108799

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### Overview

**Product name** Human alpha 1 Antitrypsin ELISA Kit (SERPINA1)

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Overall				5.3%

Inter-assay

Sample	n	Mean	SD	CV%
Overall				10.3%

**Sample type** Saliva, Milk, Urine, Serum, Plasma, Cerebral Spinal Fluid

**Assay type** Sandwich (quantitative)

**Sensitivity** = 0.31 ng/ml

**Range** 0.391 ng/ml - 25 ng/ml

**Recovery** 103 %

**Assay time** 4h 00m

**Assay duration** Multiple steps standard assay

**Species reactivity** **Reacts with:** Human

**Product overview**

Human alpha 1 Antitrypsin ELISA kit (SERPINA1) (ab108799) is a sandwich ELISA kit for the quantitative measurement of alpha 1 Antitrypsin in plasma, serum, milk, urine, saliva and CSF samples.

An alpha 1 antitrypsin specific antibody has been precoated onto 96-well plates and blocked. Standards or test samples are added to the wells and subsequently an alpha 1 antitrypsin specific biotinylated detection antibody is added and then followed by washing with wash buffer. Avidin-Biotin-Peroxidase Complex is added and unbound conjugates are washed away with wash buffer. TMB is then used to visualize HRP enzymatic reaction. TMB is catalyzed by HRP to produce a blue color product that changes into yellow after adding acidic stop solution. The density of yellow

coloration is directly proportional to the amount of alpha 1 antitrypsin captured in plate.

Get results in 90 minutes with Human alpha 1 Antitrypsin ELISA Kit (SERPINA1) ([ab189579](#)) from our SimpleStep ELISA® range.

**The entire kit may be stored at -20°C for long term storage before reconstitution - Avoid repeated freeze-thaw cycles.**

**Platform** Microplate

## Properties

**Storage instructions** Store at -20°C. Please refer to protocols.

Components	1 x 96 tests
100X Streptavidin-Peroxidase Conjugate	1 x 80µl
10X Diluent N Concentrate	1 x 30ml
20X Wash Buffer Concentrate	2 x 30ml
40X Biotinylated Human alpha 1 Antitrypsin Antibody	1 x 150µl
alpha 1 Antitrypsin Microplate (12 x 8 well strips)	1 unit
alpha 1 Antitrypsin Standard	1 vial
Chromogen Substrate	1 x 7ml
Sealing Tapes	3 units
Stop Solution	1 x 11ml

**Function** Inhibitor of serine proteases. Its primary target is elastase, but it also has a moderate affinity for plasmin and thrombin. Irreversibly inhibits trypsin, chymotrypsin and plasminogen activator. The aberrant form inhibits insulin-induced NO synthesis in platelets, decreases coagulation time and has proteolytic activity against insulin and plasmin.  
Short peptide from AAT: reversible chymotrypsin inhibitor. It also inhibits elastase, but not trypsin. Its major physiological function is the protection of the lower respiratory tract against proteolytic destruction by human leukocyte elastase (HLE).

**Tissue specificity** Ubiquitous. Expressed in leukocytes and plasma.

**Involvement in disease** Alpha-1-antitrypsin deficiency

**Sequence similarities** Belongs to the serpin family.

**Domain** The reactive center loop (RCL) extends out from the body of the protein and directs binding to the target protease. The protease cleaves the serpin at the reactive site within the RCL, establishing a covalent linkage between the carboxyl group of the serpin reactive site and the serine hydroxyl of the protease. The resulting inactive serpin-protease complex is highly stable.

**Post-translational modifications** N-glycosylated. Differential glycosylation produces a number of isoforms. N-linked glycan at Asn-107 is alternatively di-antennary, tri-antennary or tetra-antennary. The glycan at Asn-70 is di-

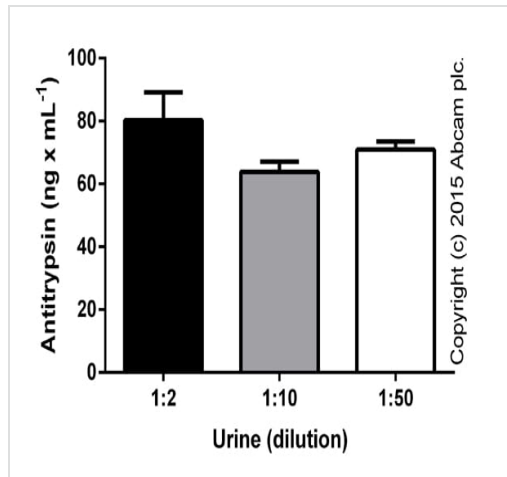
antennary with trace amounts of tri-antennary. Glycan at Asn-271 is exclusively di-antennary. Structure of glycans at Asn-70 and Asn-271 is Hex5HexNAc4. The structure of the antennae is Neu5Ac(alpha1-6)Gal(beta1-4)GlcNAc attached to the core structure Man(alpha1-6)[Man(alpha1-3)]Man(beta1-4)GlcNAc(beta1-4)GlcNAc. Some antennae are fucosylated, which forms a Lewis-X determinant.

Proteolytic processing may yield the truncated form that ranges from Asp-30 to Lys-418.

## Cellular localization

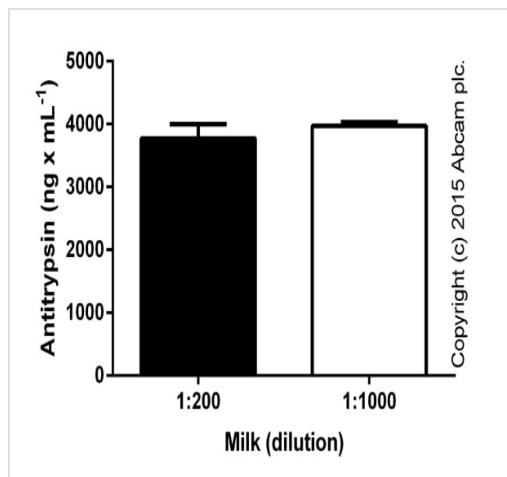
Secreted. Endoplasmic reticulum. The S and Z allele are not secreted effectively and accumulate intracellularly in the endoplasmic reticulum and Secreted, extracellular space, extracellular matrix.

## Images



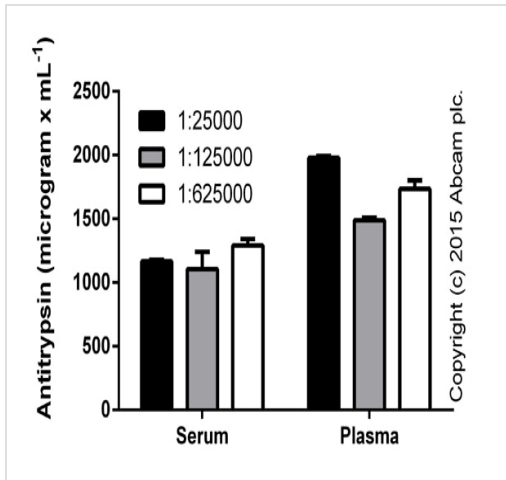
Linearity: alpha 1 antitrypsin in urine at different dilutions, corrected for the factor of dilution (duplicates +/- SD).

ELISA: alpha 1 Antitrypsin (SERPINA1) Human  
ELISA Kit



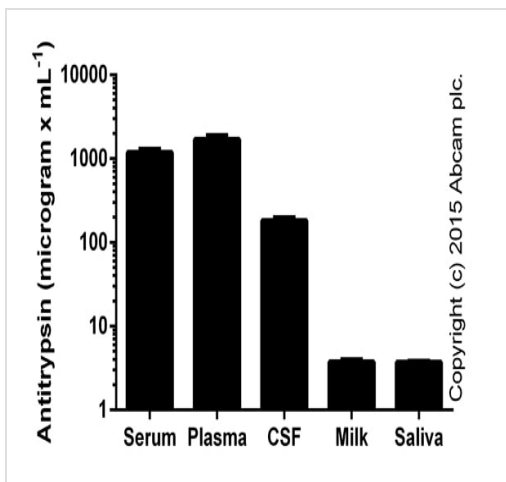
Linearity: alpha 1 antitrypsin in human milk at different dilutions, corrected for the factor of dilution (duplicates +/- SD)

ELISA: alpha 1 Antitrypsin (SERPINA1) Human  
ELISA Kit



ELISA: alpha 1 Antitrypsin (SERPINA1) Human  
ELISA Kit

Linearity: alpha 1 antitrypsin in serum and plasma (Li-heparine) at different dilutions, corrected for the factor of dilution (duplicates +/- SD)

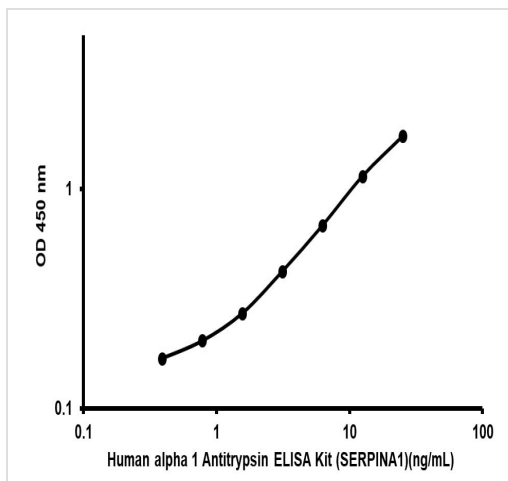


ELISA: alpha 1 Antitrypsin (SERPINA1) Human  
ELISA Kit

Alpha 1 antitrypsin in human biological fluids (duplicates +/- SD).

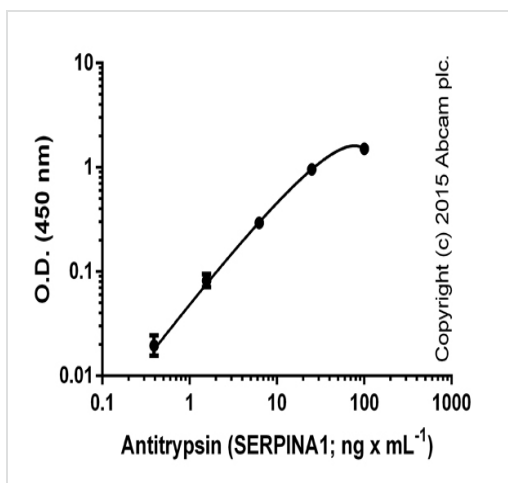
The samples were tested in different ranges of dilutions (serum and Li-heparine plasma: 2e3-1e6; CSF: 5e3-5e4; milk: 1e2-1e3; saliva: 2e2-2e3).

Representative Standard Curve using ab108799



Typical Standard Curve for ab108799 Human alpha 1 Antitrypsin ELISA kit

Standard curve with background signal subtracted (duplicates; +/- SD).



ELISA: alpha 1 Antitrypsin (SERPINA1) Human ELISA Kit

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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