

REPRESENTATIVE DATASHEET

Sheep anti-human Antithrombin (ATIII)

Biotinylated Affinity-Purified IgG

0.1 mg

Product #: SAAT-APBIO

Lot #: XXXX

Expiry date: XXXX

Store at 2°C to 8°C.

For Research Use Only.

Not for use in diagnostic procedures.

Description of Antithrombin (ATIII)

Antithrombin, also known as Antithrombin III (ATIII), is a member of the SERPIN family of proteinase inhibitors and the primary inhibitor of thrombin in plasma. It is produced in the liver and circulates in plasma at ~200 µg/mL (~3.5 µM). Antithrombin inhibits a broad spectrum of serine proteases including thrombin, activated forms of factor X, factor IX, factor XI, factor XII, as well as kallikrein, plasmin and urokinase. Enzyme inhibition by antithrombin occurs through proteolytic cleavage at Arg³⁸⁵-Ser³⁸⁶ and subsequent rapid formation of a stable, inactive 1:1 enzyme-antithrombin complex. Heparin has a profound accelerating effect on the inhibitory activity of antithrombin towards some enzymes. For example, the rate of inhibition of thrombin and activated factor X is increased 1000-fold in the presence of optimal concentrations of heparin, whereas heparin has relatively little effect on the inhibition rate of activated factor XI, activated factor XII and kallikrein. Antithrombin is a single chain molecule with a molecular weight of 59 kDa. Interaction with thrombin results in an SDS-stable thrombin-antithrombin complex of 96 kDa¹⁻³.

REFERENCES and REVIEWS

1. Damus PS, Rosenberg RD; Antithrombin – Heparin Cofactor; *Methods in Enzymology* 45, pp 653-669, 1976.
2. Harpel PC; Blood Proteolytic Enzyme Inhibitors: Their Role in Modulating Blood Coagulation and Fibrinolytic Enzyme Pathways; in *Hemostasis and Thrombosis*, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 738-747, J.B. Lippincott Co., Philadelphia PA, USA, 1982.
3. Griffith MJ, Noyes CM, Church FC; Reactive Site Peptide Structural Similarity between Heparin Cofactor II and Antithrombin III; *JBC*: 260, pp 2218-2225, 1985.

Product Specifications

Description:

Vial containing XXXX mL of affinity-purified IgG conjugated to biotin. Total protein is 0.1 mg.

Format:

APIgG-biotin conjugate as a clear colourless liquid.

Host Animal:

Sheep

Immunogen:

Human antithrombin purified from plasma.

Concentration:

APIgG-biotin concentration is XXXX mg/mL, determined by absorbance using an extinction coefficient ($E^{1\%}_{280}$) of 14.

Buffer:

Phosphate-buffered saline containing 1 mg/mL bovine albumin and 0.1% sodium azide, pH 7.4.

Storage:

Store at 2°C to 8°C.

Specificity:

Prior to conjugation, this antibody is specific for antithrombin as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable as a source of biotinylated antibodies to antithrombin.

Incorporation of biotin:

XXXX moles biotin per mole IgG as determined by HABA assay.