



**Sheep anti-human Antithrombin (ATIII)**  
Peroxidase Conjugated Affinity-Purified IgG  
0.1 mg

**Product #:** SAAT-APHRP  
**Lot #:** XXXX  
**Expiry date:** XXXX

Store at  $-10$  to  $-20^{\circ}\text{C}$ .

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  $\sim 200$   $\mu\text{g}/\text{ml}$  ( $\sim 3.5$   $\mu\text{M}$ ). 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 Arg<sup>385</sup>-Ser<sup>386</sup> 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 kDa<sup>1-3</sup>.

### 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 horseradish peroxidase (HRP) through carbohydrate groups. Total protein is 0.1 mg.

**Format:**

APIgG-HRP conjugate as a clear, slightly red-brown liquid.

**Host Animal:**

Sheep

**Immunogen:**

Human antithrombin purified from plasma.

**Concentration:**

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

**Buffer:**

A buffered stabilizer solution containing 50% (v/v) glycerol.

**Storage:**

Store between  $-10$  and  $-20^{\circ}\text{C}$ . 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. Avoid exposure to sodium azide as this is an inhibitor of peroxidase activity.

**Specificity:**

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

**Applications:**

Suitable as a source of peroxidase-labeled antibodies to ATIII.

**Rz Ratio (Reinheitzzahl,  $A_{403}/A_{280}$ ):**

XXXX as determined spectrophotometrically.