

# Anti-Human Thrombin (Sheep)

## Affinity-Purified IgG, 0.50 mg



Ref#: SAHT-AP  
 Lot#: xxxxxx  
 Exp. Date: xxxx-xx

Store at -10 to -20°C

For Research Use Only  
 Not for Use in Diagnostic Procedures  
 For *in vitro* Use Only

<b>Immunogen:</b>	Human Thrombin (from human plasma)		
<b>Format:</b>	Affinity-purified IgG in 10 mM HEPES, pH 7.3, 150 mM NaCl, 50% (v/v) glycerol		
<b>Host:</b>	Sheep		
<b>Storage:</b>	Store between -10 and -20°C. Vial should be tightly capped. Do not store in frost-free freezers. Allow product to warm to room temperature and gently mix before use		
<b>Total Protein:</b>	0.50 mg		
<b>Volume:</b>	1 vial containing 0.250 mL anti-human, affinity purified IgG		
<b>Concentration:</b>	2 mg/mL affinity-purified IgG by absorbance; Extinction Coefficient $E^{1\%}_{280} = 13.4$		
<b>Specificity:</b>	Specificity demonstrated by immunoelectrophoresis and ELISA methods		
<b>Applications:</b>	Suitable as a source of affinity purified, enriched antibodies		
<b>Species Cross Reactivity:</b>	Dog: -	Human: ++	Mouse: -
	Pig: -	Rabbit: -	Rat: -

Thrombin, also known as Coagulation Factor IIa, is the product of proteolytic activation of the zymogen prothrombin. It is a two-chain serine protease with a mass of 37 kDa. The active site is located within the heavy chain. Thrombin has a high specificity for certain arginine bonds in protein substrates. The primary substrate is fibrinogen which thrombin converts to fibrin through the cleavage of four arginyl-glycyl peptide bonds. Thrombin is also an important activator of platelets, factor XIII, protein C and TAFI (Plasma procarboxypeptidase B). In a positive feedback mechanism, thrombin increases the rate of its own production by activation of factors VIII and V. The rate of thrombin production is subsequently limited indirectly through the activation of protein C by thrombin, which then inactivates the activated cofactors VIII and V. The binding of thrombin to thrombomodulin on the cell surface dramatically alters thrombin's specificity, increasing its activity toward protein C and TAFI, and decreasing its activity toward fibrinogen and activating cofactors VIII and V. In plasma, thrombin activity is inhibited primarily by antithrombin and to a lesser extent heparin cofactor II. The rate of inhibition by both of these inhibitors is profoundly increased in the presence of optimal concentrations of heparin. Other physiological inhibitors of thrombin in the absence of heparin include  $\alpha 2$ -macroglobulin and  $\alpha 1$ -antitrypsin<sup>1</sup>.