



Sheep anti-rabbit Thrombin

Peroxidase Conjugated IgG

0.2 mg

Product #: SART-HRP

Lot #: XXXX

Expiry date: XXXX

Store at -10 to -20°C

For Research Use Only.

Not for use in diagnostic procedures.

Description of Thrombin

Thrombin (EC3.4.21.5, α -thrombin) is the product of proteolytic activation of the zymogen prothrombin. Human thrombin 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 α_2 -macroglobulin and α_1 -antitrypsin¹⁻⁴.

REFERENCES and REVIEWS

1. Mann KG; Prothrombin and Thrombin; in Hemostasis and Thrombosis, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 184-199, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
2. Stubbs MT, Bode W; A Player of Many Parts: The Spotlight Falls on Thrombin's Structure; Thrombosis Research 69, pp 1-58, 1993.
3. Downing MW, Bloom JW, Mann KG; Comparison of the Inhibition of Thrombin by Three Plasma Protease Inhibitors; Biochemistry 17, pp 2649-2653, 1978.
4. Weitz JI, Hudoba M, Massel D, Maranganore J, Hirsh J; Clot-bound Thrombin is Protected from Inhibition by Heparin-ATIII but is Susceptible to - ATIII independent Inhibitors; J. Clin. Invest 86, pp 385-391, 1990.

Product Specifications

Description:

Vial containing XXXX ml of whole IgG conjugated to horseradish peroxidase (HRP) through carbohydrate groups. Total protein is 0.2 mg.

Format:

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

Host Animal:

Sheep

Immunogen:

Thrombin prepared from purified rabbit prothrombin, active site blocked with PPACK.

Concentration:

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

Buffer:

A buffered stabilizer solution containing 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. Avoid exposure to sodium azide as this is an inhibitor of peroxidase activity.

Specificity:

Prior to conjugation, this antibody was specific for rabbit thrombin or prothrombin as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable as a source of peroxidase labelled antibodies to rabbit thrombin or prothrombin.

Rz Ratio (Reinheitszahl, A_{403}/A_{280}):

XXXX as determined spectrophotometrically.