Thrombin (Porcine)
0.10 mg

Ref#: PF2A
Lot#: xxxxxx
Exp. Date: xxxx-xx

Store at +2 to +8°C

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

Description:	Thrombin (Porcine)
Format:	Lyophilized in 50 mM sodium citrate/ 0.2 M NaCl/ 0.1% PEG-8000/, pH 6.5
Host:	Porcine
Storage:	Store between +2 and +8°C After reconstitution aliquot and freeze at ≤-60°C
Reconstitution:	We recommend hydrating the protein with sterile water to the original volume
Volume:	1 vial containing 0.056 mL
Total Protein:	0.10 mg
Concentration:	1.80 mg/mL before lyophilisation by Absorbance
Activity:	3047.00 NIH units/mg
Molecular weight:	37,000 daltons

Thrombin is the product of proteolytic activation of the zymogen prothrombin. 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 it's 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 α2-macroglobulin and α1-antitrypsin1.

The thrombin was activated from homogenous porcine prothrombin by activation with bovine factor Xa, factor Va and phospholipid. These activating enzymes were removed after activation.

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