

# Thrombin, Active, Bovine Plasma (Technical grade)

<b>CATALOG #:</b>	7591-1 7591-10 7591-100	1 KU 10 KU 100 KU
<b>ALTERNATE NAMES:</b>	Activated Factor IIa	
<b>SOURCE:</b>	Bovine Plasma	
<b>PURITY:</b>	≥ 98%	
<b>MOL. WEIGHT:</b>	37 kDa	
<b>FORM:</b>	Lyophilized	
<b>FORMULATION:</b>	Sterile filtered and lyophilized with Mannitol and Sodium Chloride.	
<b>RECONSTITUTION:</b>	Reconstitute in sterile water (100 U/ml) with 0.9% NaCl. It forms a clear solution.	

**STORAGE CONDITIONS:** Store at -20°C or lower. Avoid repeated freezing and thawing cycles. Upon reconstitution it should be stored at 4°C between 2-7 days and for future use below -20°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Solutions are most stable at pH 6.5, as a pH >7 will greatly reduce thrombin activity. Since thrombin solutions adsorb to glass, it is recommended to aliquot the solutions in plastic tubes and store at -20 °C for long-term storage.

**DESCRIPTION:** Thrombin enzyme (Activated Factor IIa) is an important clotting promoter that controls the transformation of soluble fibrinogen to insoluble active fibrin strands. Thrombin is a coagulation protein and a serine protease (EC 3.4.21.5) that catalyzes many coagulation-related reactions. Thrombin triggers factor-XI, factor-V, Factor-XIII and factor-VIII. Thrombin endorses platelet activation, using activation of protease-activated receptors on the platelet. As a result of its high proteolytic specificity, thrombin has become an important biochemical protein. The thrombin cleavage site (Leu-Val-Pro-Arg-Gly-Ser) is widely used in linker regions of recombinant fusion protein constructs. After the purification of the fusion protein, thrombin is used to cleave between the Arginine and Glycine residues of the cleavage site, efficiently removing the purification tag from the protein of interest with a high degree of specificity.

**ACTIVITY:** 90-250 U/mg of lyophilized powder.

**UNIT DEFINITION:** Activity is expressed in NIH/US units obtained by direct comparison to a NIH Thrombin Reference Standard, Lot K. The NIH assay procedure uses 0.2 ml of diluted plasma (1:1 with saline) as a Substrate and 0.1 ml of albumin solution based on a modification of the method of Biggs. Only clotting times in the range of 15–25 seconds are used for determining thrombin activity. Optimal clotting temperature is 37°C. There are approximately 5 Thrombin cleavage units for every one US Unit.

**RELATED PRODUCTS:**

- PPACK Dihydrochloride (**Cat. No. 1848-5**)
- Alpha 1 Antichymotrypsin, Human Plasma (**Cat. No. 7293-1000**)
- Alpha 1 Antitrypsin, Human Plasma (**Cat. No. 7294-100**)

**FOR RESEARCH USE ONLY! Not to be used in humans.**