

Active Native Human α -Thrombin

Cat. No. Thrombin-24H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Native Human Thrombin was purified from Plasma.
Species	Human
Source	Plasma
Description	Alpha-thrombin is a highly specific serine protease generated by proteolytic activation of the zymogen prothrombin. During coagulation, thrombin cleaves fibrinogen to form fibrin, leading to the ultimate step in coagulation, the formation of a fibrin clot. Thrombin is also responsible for feedback activation of the procofactors factor V and factor VIII. Thrombin has also been reported to activate factor XIII and platelets, and also functions as a vasoconstrictor protein. The procoagulant activity of thrombin is arrested in two ways: 1) inhibition by either heparin cofactor II or the antithrombin III/heparin complex; or 2) complex formation with thrombomodulin. Formation of the thrombin/thrombomodulin complex results in the inability of thrombin to cleave fibrinogen and activate factors V and VIII, but increases the efficiency of thrombin for activation of the anticoagulant, protein C. Thrombin is a two chain enzyme composed of an NH₂-terminal chain (Mr=6,000) and a COOH-terminal chain (Mr=31,000) which remain covalently associated through a single disulfide bond. Human thrombin is 13 amino acids shorter than the bovine thrombin due to a thrombin cleavage site on the human protein that is not present in the bovine protein. Thrombin is also utilized for site specific cleavage of fusion proteins expressed in bacteria. A thrombin sensitive site is incorporated between the recombinant protein of interest and peptides or proteins which facilitate purification and/or expression. The target protein is released

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from the expressed hybrid by cleavage with thrombin. Thrombin can then be easily removed by affinity chromatography.

Form	50% glycerol/water (v/v)
Bio-activity	4493 U/mg
Molecular Mass	36700
Purity	≥95% by SDS-PAGE. NOT tissue/cell culture grade.
Storage	-20 °C
Concentration	8.9 mg/mL

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