

Active Native Mouse Thrombin

Cat. No. Thrombin-61M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Human, bovine and mouse thrombin are prepared from purified prothrombin using a modification of the Lundblad procedure as described by Nesheim et al.
Species	Mouse
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 "A" chain (Mr=6,000) and a COOH-terminal "B" 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 from the expressed hybrid by cleavage with thrombin. Thrombin can then

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be easily removed by affinity chromatography.

Form	50% glycerol/water (v/v)
Bio-activity	approximately 3800 NIH units/mg
Molecular Mass	36,702
Purity	>95% by SDS-PAGE NOT tissue/cell culture grade. Not tested for endotoxin.

GENE INFORMATION

Gene Name	F2?coagulation factor II [?Mus musculus?(house mouse)]
Official Symbol	F2
Synonyms	Cf2; FII; Cf-2; thrombin; F2
Gene ID	14061
mRNA Refseq	NM_010168
Protein Refseq	NP_034298
UniProt ID	P19221
Chromosome Location	2 E1; 2 50.63 cM
Pathway	Blood Clotting Cascade, organism-specific biosystem; Cell surface interactions at the vascular wall, organism-specific biosystem

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Function	calcium ion binding; catalytic activity
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