

## Active Native Mouse Thrombin

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

### SPECIFICATION

<b>Product Overview</b>	Human, bovine and mouse thrombin are prepared from purified prothrombin using a modification of the Lundblad procedure as described by Nesheim et al.
<b>Species</b>	Mouse
<b>Description</b>	<p>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.</p> <p>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 NH<sub>2</sub>-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</p>

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be easily removed by affinity chromatography.

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

## GENE INFORMATION

<b>Gene Name</b>	F2?coagulation factor II [?Mus musculus?(house mouse) ]
<b>Official Symbol</b>	F2
<b>Synonyms</b>	Cf2; FII; Cf-2; thrombin; F2
<b>Gene ID</b>	14061
<b>mRNA Refseq</b>	NM_010168
<b>Protein Refseq</b>	NP_034298
<b>UniProt ID</b>	P19221
<b>Chromosome Location</b>	2 E1; 2 50.63 cM
<b>Pathway</b>	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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