PRODUCT INFORMATION

Thrombin (human)

Item No. 13188

Overview and Properties

Synonym: Activated Factor II [IIa]
Source: Human blood, all source material tested and found non-reactive to HTLV-III and HBsAg using FDA approved assay methods
Molecular Weight: 38 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability: ≥1 years
Supplied in: 5 mM sodium citrate, pH 6.5, containing 0.01% PEG and 20 mM sodium chloride
Specific Activity: ≥2,000 NIH units/mg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Thrombin is the last enzyme in the clotting cascade functioning to cleave fibrinogen to fibrin and potentiates the procoagulation process by activating factors V, VIII, XI, and XIII.[1] Conversely, thrombin aids the anticoagulant process by activating protein C.[2] Activated protein C inhibits activated factors V and VIII ultimately down-regulating further thrombin production. Thrombin is often used as a potent platelet activator *in vitro*. Platelet responses to thrombin are mediated through protease-activated receptors (PARs).[3] Thrombin-mediated signaling regulates a diverse range of metabolic processes including activation of phospholipases in platelets, endothelial cells, and cardiac myocytes.[4]

References

1. Coughlin, S.R. Thrombin signalling and protease-activated receptors. *Nature* **407**, 258-264 (2000).
2. Gibbs, C.S., Coutré, S.E., Tsiang, M., *et al.* Conversion of thrombin into an anticoagulant by protein engineering. *Nature* **378**, 413-416 (1995).
3. Davì, G. and Patrono, C. Platelet activation and atherothrombosis. *N. Engl. J. Med.* **357(24)**, 2482-2494 (2007).
4. McHowat, J., and Creer, M.H. Thrombin activates a membrane-associated calcium-independent PLA_2 in ventricular myocytes. *Am. J. Physiol.* **274**, C447-C454 (1998).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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