

# Thrombin API (A-16): sc-23337

## BACKGROUND

Homeostasis following tissue injury involves the deployment of essential plasma procoagulants (prothrombin, and Factors X, IX, V, and VIII), which mediate a blood coagulation cascade that leads to the formation of insoluble fibrin clots and the promotion of platelet aggregation. Proteolytic cleavage of Prothrombin (Factor II) leads to formation of a 36 amino acid Thrombin light chain (LC; amino acids 328-363) and a 259 amino acid Thrombin heavy chain (HC; amino acids 364-622). In the first step of the coagulation cascade Thrombin cleaves bonds after Arg-Gly and activates Factors V, VII, VIII, XIII in complex with Thrombomodulin and protein C. Thrombin maintains vascular integrity during development and postnatal life and coordinates connective tissue proteins by stimulating fibroblast procollagen production.

## REFERENCES

1. Davey, M.G. and Luscher, E.F. 1967. Actions of Thrombin and other coagulant and proteolytic enzymes on blood platelets. *Nature* 216: 857-858.
2. Davie, E.W. and Fujikawa, K. 1975. Basic mechanisms in blood coagulation. *Annu. Rev. Biochem.* 44: 799-829.
3. Elion, J., et al. 1986. Proteolytic derivatives of Thrombin. *Ann. N.Y. Acad. Sci.* 485: 16-26.
4. Royle, N., et al. 1987. Human genes encoding Prothrombin and ceruloplasmin map to 11p11-q12 and 3q21-24, respectively. *Somat. Cell Mol. Genet.* 13: 285-292.
5. Davie, E.W., et al. 1991. The coagulation cascade: initiation, maintenance, and regulation. *Biochemistry* 30: 10363-10370.
6. Chambers, R.C., et al. 1998. Thrombin stimulates fibroblast procollagen production via proteolytic activation of protease-activated receptor 1. *Biochem. J.* 333: 121-127.
7. Huang, Y.Q., et al. 2000. Thrombin inhibits tumor cell growth in association with upregulation of p21<sup>WAF/Cip1</sup> and caspases via a p53-independent, Stat1-dependent pathway. *J. Biol. Chem.* 275: 6462-6468.

## CHROMOSOMAL LOCATION

Genetic locus: F2 (human) mapping to 11q11.2.

## SOURCE

Thrombin API (A-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Thrombin Activation Peptide 1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23337 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

Thrombin API (A-16) is recommended for detection of Thrombin API and Prothrombin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); does not detect APII, LC or HC.

Thrombin API (A-16) is also recommended for detection of Thrombin API and Prothrombin in additional species, including equine.

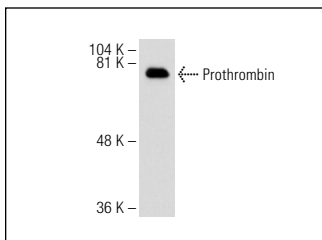
Molecular Weight of Thrombin API: 70/31 kDa.

Positive Controls: human platelet extract: sc-363773.

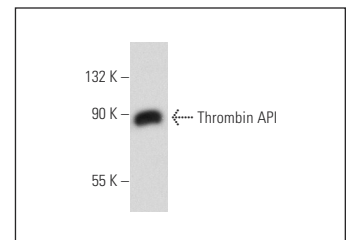
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Thrombin API (A-16): sc-23337. Western blot analysis of Thrombin API protein purified from human plasma.



Thrombin API (A-16): sc-23337. Western blot analysis of Thrombin API expression in human platelet extract.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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Try **Thrombin API (D-9): sc-376933** or **Thrombin API (B-2): sc-373848**, our highly recommended monoclonal alternatives to Thrombin API (A-16).