SANTA CRUZ BIOTECHNOLOGY, INC.

Prothrombin (m): 293T Lysate: sc-127389

BACKGROUND

Hemostasis 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-I-Gly and activates factors V, VII, VIII and 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

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3. Elion, J., Boissel, J.P., Le Bonniec, B., Bezeaud, A., Jandrot-Perrus, M., Rabiet, M.J. and Guillin, M.C. 1986. Proteolytic derivatives of thrombin. Ann. N.Y. Acad. Sci. 485: 16-26.
4. Royle, N.J., Irwin, D.M., Koschinsky, M.L., MacGillivray, R.T. and Hamerton, J.L. 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., Fujikawa, K. and Kisiel, W. 1991. The coagulation cascade: initiation, maintenance, and regulation. Biochemistry 30: 10363-10370.
6. Chambers, R.C., Dabbagh, K., McAnulty, R.J., Gray, A.J., Blanc-Brude, O.P. and Laurent, G.J. 1998. Thrombin stimulates fibroblast procollagen production via proteolytic activation of protease-activated receptor 1. Biochem. J. 333: 121-127.
7. Huang, Y.Q., Li, J.J. and Karpatkin, S. 2000. Thrombin inhibits tumor cell growth in association with up-regulation of $p21^{waf/CIP1}$ and caspases via a p53-independent, Stat1-dependent pathway. J. Biol. Chem. 275: 6462-6468.
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CHROMOSOMAL LOCATION

Genetic locus: F2 (mouse) mapping to 2 E1.

PRODUCT

Prothrombin (m): 293T Lysate represents a lysate of mouse Prothrombin transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

Prothrombin (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Prothrombin antibodies. Recommended use: 10-20 µl per lane.

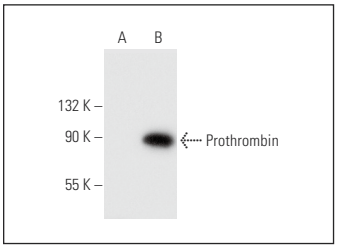
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Thrombin (B-4): sc-271586 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Prothrombin expression in Prothrombin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Thrombin API (B-4): sc-271586. Western blot analysis of Prothrombin expression in non-transfected: sc-117752 (**A**) and mouse Prothrombin transfected: sc-127389 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.