

Prothrombin (28H5): sc-69769

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) at residue 44 leads to formation of Thrombin in the first step of the coagulation cascade. Thrombin cleaves bonds between Arg and 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

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^{WAF/Cip1} and caspases via a p53-independent, Stat1-dependent pathway. *J. Biol. Chem.* 275: 6462-6468.
8. LocusLink Report (LocusID: 2147). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: F2 (human) mapping to 11p11.2.

SOURCE

Prothrombin (28H5) is a mouse monoclonal antibody raised against Prothrombin from plasma of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

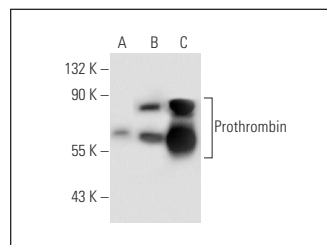
Prothrombin (28H5) is recommended for detection of Prothrombin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Prothrombin siRNA (h): sc-40413, Prothrombin shRNA Plasmid (h): sc-40413-SH and Prothrombin shRNA (h) Lentiviral Particles: sc-40413-V.

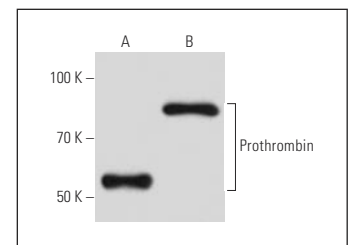
Molecular Weight of Prothrombin: 78 kDa.

Positive Controls: Prothrombin (h): 293T Lysate: sc-177784 or human platelet extract: sc-363773.

DATA



Prothrombin (28H5): sc-69769. Western blot analysis of Prothrombin expression in non-transfected: sc-117752 (A), human Prothrombin transfected: sc-177784 (B) 293T whole cell lysates and human platelet extract (C).



Prothrombin (28H5): sc-69769. Western blot analysis of Prothrombin purified from human plasma (A) and in human plasma (B).

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.



See **Thrombin (F-1): sc-271449** for Thrombin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.