

Prothrombin (AHP-5013): sc-73470

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 (AHP-5013) is a mouse monoclonal antibody raised against Prothrombin of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 5% glycerol. Also available azide-free for inhibition of clotting and Prothrombin activation, sc-73470 L, 100 µg/0.1 ml.

STORAGE

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

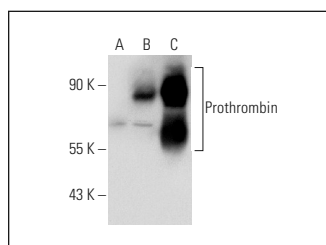
APPLICATIONS

Prothrombin (AHP-5013) is recommended for detection of Prothrombin, Prethrombin-1 fragment 2, and Meizothrombin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of Prothrombin: 78 kDa.

Positive Controls: human plasma extract: sc-364374, Prothrombin (h): 293T Lysate: sc-177784 or human platelet extract: sc-363773.

DATA



Prothrombin (AHP-5013): sc-73470. 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).

SELECT PRODUCT CITATIONS

1. Tenzer, S., et al. 2011. Nanoparticle size is a critical physicochemical determinant of the human blood plasma corona: a comprehensive quantitative proteomic analysis. *ACS Nano* 5: 7155-7167.
2. Gil-Dones, F., et al. 2012. Inside human aortic stenosis: a proteomic analysis of plasma. *J. Proteomics* 75: 1639-1653.
3. Docter, D., et al. 2014. Quantitative profiling of the protein coronas that form around nanoparticles. *Nat. Protoc.* 9: 2030-2044.

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.