

# Factor V (6A5): sc-13512

## BACKGROUND

Hemostasis following tissue injury involves the deployment of essential plasma procoagulants (Prothrombin and Factors X, IX, V, and VIII), which are involved in a blood coagulation cascade that leads to the formation of insoluble Fibrin clots and the promotion of platelet aggregation. Coagulation Factor V (Factor V, FV, proaccelerin, labile factor) is a 2,196 amino acid, single chain glycoprotein that is cleaved by Thrombin to yield an active, Ca<sup>2+</sup> dependent dimer. This dimer is essential to the blood coagulation cascade. Together with catalytic Factor Xa and Ca<sup>2+</sup> on the surface of platelets or endothelial cells, Factor Va coordinates in a prothrombinase complex, which mediates proteolysis of Prothrombin into active Thrombin. Due to both the procoagulant properties of Factor V in coordinating proteolytic activation of Thrombin, and anticoagulant properties as a cofactor to activated protein C (APC), which selectively destroys Factor Va and Factor Xa, alterations at the Factor V locus can contribute to hemorrhagic diathesis or thrombosis, respectively.

## REFERENCES

1. Davie, E.W. and Fujikawa, K. 1975. Basic mechanisms in blood coagulation. *Annu. Rev. Biochem.* 44: 799-829.
2. Kane, W.H. and Davie, E.W. 1986. Cloning of a cDNA coding for human Factor V, a blood coagulation factor homologous to Factor VIII and ceruloplasmin. *Proc. Natl. Acad. Sci. USA* 83: 6800-6804.
3. Jenny, R.J., Pittman, D.D., Toole, J.J., Kriz, R.W., Aldape, R.A., Hewick, R.M., Kaufman, R.J. and Mann, K.G. 1987. Complete cDNA and derived amino acid sequence of human Factor V. *Proc. Natl. Acad. Sci. USA* 84: 4846-4850.
4. Davie, E.W., Fujikawa, K. and Kisiel, W. 1991. The coagulation cascade: initiation, maintenance, and regulation. *Biochemistry* 30: 10363-10370.
5. Rand, M.D., Kalafatis, M. and Mann, K.G. 1994. Platelet coagulation Factor V A: the major secretory platelet phosphoprotein. *Blood* 83: 2180-2190.
6. Macedo-Ribeiro, S., Bode, W., Huber, R., Quinn-Allen, M.A., Kim, S.W., Ortel, T.L., Bourenkov, G.P., Bartunik, H.D., Stubbs, M.T., Kane, W.H. and Fuentes-Prior, P. 1999. Crystal structures of the membrane-binding C2 domain of human coagulation Factor V. *Nature* 402: 434-439.

## CHROMOSOMAL LOCATION

Genetic locus: F5 (human) mapping to 1q24.2.

## SOURCE

Factor V (6A5) is a mouse monoclonal antibody raised against the central portion of the B-Domain of Factor V light chain of human origin.

## STORAGE

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

## RESEARCH USE

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

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Factor V (6A5) is available conjugated to agarose (sc-13512 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13512 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13512 PE), fluorescein (sc-13512 FITC), Alexa Fluor® 488 (sc-13512 AF488), Alexa Fluor® 546 (sc-13512 AF546), Alexa Fluor® 594 (sc-13512 AF594) or Alexa Fluor® 647 (sc-13512 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13512 AF680) or Alexa Fluor® 790 (sc-13512 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Factor V (6A5) is recommended for detection of Factor V 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)].

Suitable for use as control antibody for Factor V siRNA (h): sc-40399, Factor V shRNA Plasmid (h): sc-40399-SH and Factor V shRNA (h) Lentiviral Particles: sc-40399-V.

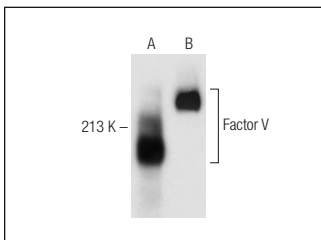
Molecular weight of Factor V: 330 kDa.

Positive Controls: human plasma extract: sc-364374, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

## 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



Factor V (6A5): sc-13512. Western blot analysis of Factor V expression in Hep G2 whole cell lysate (A) and Factor V in human plasma (B).

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.