Factor X (AMX-9050): sc-73462



The Power to Question

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 X (Stuart Prower factor, FX, F10) is a vitamin K-dependent, single chain serine protease that is synthesized in the liver and circulates as an inactive precursor. The mature form of Factor X (Factor X A) is generated by Factor IX A- or Factor VII A-mediated cleavage at the tripeptide sequence, Arg-Lys-Arg, to yield a disulfide linked dimer. Together with the cofactor Factor V A and Ca²⁺ on the surface of platelets or endothelial cells, Factor X A coordinates as part of the prothrombinase complex, which mediates proteolysis of Prothrombin into active Thrombin. Mutations at the Factor X locus resulting in Factor X deficiencies can contribute to hemorrhagic diathesis.

REFERENCES

- Davie, E.W. and Fujikawa, K. 1975. Basic mechanisms in blood coagulation. Annu. Rev. Biochem. 44: 799-829.
- Di Scipio, R.G., Hermodson, M.A., Yates, S.G. and Davie, E.W. 1977. A comparison of human Prothrombin, Factor IX (Christmas factor), Factor X (Stuart factor), and Protein S. Biochemistry 16: 698-706.
- 3. Davie, E.W., Fujikawa, K. and Kisiel, W. 1991. The coagulation cascade: initiation, maintenance, and regulation. Biochemistry 30: 10363-10370.
- 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.
- Chambers, R.C., Leoni, P., Blanc-Brude, O.P., Wembridge, D.E. and Laurent, G.J. 2000. Thrombin is a potent inducer of connective tissue growth factor production via proteolytic activation of Protease-activated Receptor-1. J. Biol. Chem. 275: 35584-35591.
- Todd, T., Perry, D.J., Hayman, E., Lawrence, K., Gattens, M. and Baglin, T. 2006. Severe Factor X deficiency due to a homozygous mutation (Cys364-Arg) that disrupts a disulphide bond in the catalytic domain. Haemophilia 12: 621-624.
- 7. Yang, Y.H., Hwang, K.K., FitzGerald, J., Grossman, J.M., Taylor, M., Hahn, B.H. and Chen, P.P. 2006. Antibodies against the activated coagulation Factor X (FXA) in the antiphospholipid syndrome that interfere with the FXA inactivation by antithrombin. J. Immunol. 177: 8219-8225.
- Ndonwi, M., Broze, G.J., Jr., Agah, S., Schmidt, A.E. and Bajaj, S.P. 2007. Substitution of the Gla domain in Factor X with that of Protein C impairs its interaction with Factor VII A/tissue factor: lack of comparable effect by similar substitution in Factor IX. J. Biol. Chem. 282: 15632-15644.
- 9. Al-Hilali, A., Wulff, K., Abdel-Razeq, H., Saud, K.A., Al-Gaili, F. and Herrmann, F.H. 2007. Analysis of the novel Factor X gene mutation Glu51Lys in two families with Factor X-Riyadh anomaly. Thromb. Haemost. 97: 542-545.

CHROMOSOMAL LOCATION

Genetic locus: F10 (mouse) mapping to 8 A1.1.

SOURCE

Factor X (AMX-9050) is a rat monoclonal antibody raised against Factor X of mouse origin.

PRODUCT

Each vial contains 100 μg lgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Factor X (AMX-9050) is recommended for detection of Factor X and Factor X A of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for Factor X siRNA (m): sc-40406, Factor X shRNA Plasmid (m): sc-40406-SH and Factor X shRNA (m) Lentiviral Particles: sc-40406-V.

Molecular Weight of Factor X: 61 kDa.

SELECT PRODUCT CITATIONS

 Karlström, E., Ek-Rylander, B., Wendel, M. and Andersson G. 2010. RANKL induces components of the extrinsic coagulation pathway in osteoclasts. Biochem. Biophys. Res. Commun. 394: 593-599.

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.

PROTOCOLS

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

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