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Factor X heavy chain Rabbit pAb

Catalog # AP98895

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	P00742
Other Accession	P00742
Predicted	Rat, Human, Mouse, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	54732
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human factor Xa heavy chain
Epitope Specificity	351-448/488
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the peptidase S1 family. Contains 2 EGF-like domains. Contains 1 Gla (gamma-carboxy-glutamate) domain. Contains 1 peptidase S1 domain.
SUBUNIT	The two chains are formed from a single-chain precursor by the excision of two Arg residues and are held together by 1 or more disulfide bonds. Forms a heterodimer with SERPINA5.
Post-translational modifications	The vitamin K-dependent, enzymatic carboxylation of some glutamate residues allows the modified protein to bind calcium. [PTM] N- and O-glycosylated. O-glycosylated with core 1 or possibly core 8 glycans. [PTM] The activation peptide is cleaved by factor IXa (in the intrinsic pathway), or by factor VIIa (in the extrinsic pathway). The iron and 2-oxoglutarate dependent 3-hydroxylation of aspartate and asparagine is (R) stereospecific within EGF domains.
DISEASE	Defects in F10 are the cause of factor X deficiency (FA10D) [MIM:227600]. A hemorrhagic disease with variable presentation. Affected individuals can manifest prolonged nasal and mucosal hemorrhage, menorrhagia, hematuria, and occasionally hemarthrosis. Some patients do not have clinical bleeding diathesis.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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.

Additional Information

Gene ID	2159
Other Names	FX; FXA; FA10_HUMAN; F10; Stuart factor; Stuart-Prower factor; 3.4.21.6; coagulation factor X
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	F10
Function	Factor Xa is a vitamin K-dependent glycoprotein that converts prothrombin to thrombin in the presence of factor Va, calcium and phospholipid during blood clotting (PubMed:22409427, PubMed:39880037). Factor Xa activates pro-inflammatory signaling pathways in a protease- activated receptor (PAR)-dependent manner (PubMed:24041930, PubMed:30568593, PubMed:34831181, PubMed:18202198). Up-regulates expression of protease-activated receptors (PARs) F2R, F2RL1 and F2RL2 in dermal microvascular endothelial cells (PubMed:35738824). Triggers the production of pro-inflammatory cytokines, such as MCP-1/CCL2 and IL6, in cardiac fibroblasts and umbilical vein endothelial cells in PAR-1/F2R-dependent manner (PubMed:30568593, PubMed:34831181). Triggers the production of pro-inflammatory cytokines, such as MCP-1/CCL2, IL6, TNF/TNF, IL-1beta/IL1B, IL8/CXCL8 and IL18, in endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824, PubMed:9780208). Induces expression of adhesion molecules, such as ICAM1, VCAM1 and SELE, in endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824, PubMed:9780208). Increases expression of phosphorylated ERK1/2 in dermal microvascular endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824). Triggers activation of the transcription factor NF-kappa-B in dermal microvascular endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824). Activates pro-inflammatory and pro-fibrotic responses in dermal fibroblasts and enhances wound healing probably via PAR- 2/F2RL1-dependent mechanism (PubMed:18202198). Activates barrier protective signaling responses in endothelial cells in PAR-2/F2RL1- dependent manner; the activity depends on the cleavage of PAR-2/F2RL1 by factor Xa (PubMed:22409427). Up-regulates expression of plasminogen activator inhibitor 1 (SERPINE1) in atrial tissues (PubMed:24041930).
Cellular Location	Secreted.
Tissue Location	Plasma; synthesized in the liver.

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