SANTA CRUZ BIOTECHNOLOGY, INC.

Factor XII (C-8): sc-376770

SANTA CRUZ BIOTECHNOLOGY

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 leading to the formation of insoluble fibrin clots and the promotion of platelet aggregation. Coagulation factor VII (serum prothrombin conversion accelerator, proconvertin, F7, Factor VII) is a 406 amino acid, vitamin K-dependent, single chain serine protease that is synthesized in the liver and circulates as an inactive precursor. Factor IXa, factor Xa, Factor XIIa, or thrombin mediated proteolytic cleavage of Factor VII at Arg152-Ile153 generates Factor VIIa, an active serine protease composed of a catalytic heavy chain disulfide linked to a light chain, containing 2 EGF-like domains. Coagulation Factor XIII is a terminal effector in the blood coagulation cascade. Plasma Factor XIII is a heterotetramer composed of 2 A subunits and 2 B subunits. The A subunits have catalytic function, and the noncatalytic B subunits may serve as plasma carrier molecules.

REFERENCES

1. Davie, E.W., et al. 1975. Basic mechanisms in blood coagulation. Annu. Rev. Biochem. 44: 799-829.
2. Hagen, F.S., et al. 1986. Characterization of a cDNA coding for human factor VII. Proc. Natl. Acad. Sci. USA 83: 2412-2416.
3. O'Hara, P.J., et al. 1987. Nucleotide sequence of the gene coding for human Factor VII, a vitamin K-dependent protein participating in blood coagulation. Proc. Natl. Acad. Sci. USA 84: 5158-5162.
4. Davie, E.W., et al. 1991. The coagulation cascade: initiation, maintenance, and regulation. Biochemistry 30: 10363-10370.

CHROMOSOMAL LOCATION

Genetic locus: F12 (human) mapping to 5q35.3.

SOURCE

Factor XII (C-8) is a mouse monoclonal antibody raised against amino acids 76-130 mapping near the N-terminus of Factor XII of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Factor XII (C-8) is available conjugated to agarose (sc-376770 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376770 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376770 PE), fluorescein (sc-376770 FITC), Alexa Fluor® 488 (sc-376770 AF488), Alexa Fluor® 546 (sc-376770 AF546), Alexa Fluor® 594 (sc-376770 AF594) or Alexa Fluor® 647 (sc-376770 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376770 AF680) or Alexa Fluor® 790 (sc-376770 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Factor XII (C-8) is recommended for detection of Factor XII of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Factor XII siRNA (h): sc-62290, Factor XII shRNA Plasmid (h): sc-62290-SH and Factor XII shRNA (h) Lentiviral Particles: sc-62290-V.

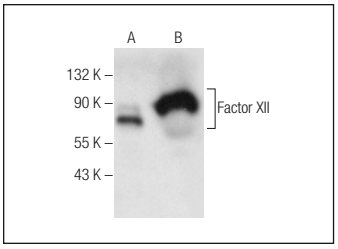
Molecular Weight of Factor XII isoforms: 28/50 kDa.

Positive Controls: human liver extract: sc-363766 or human plasma extract: sc-364374.

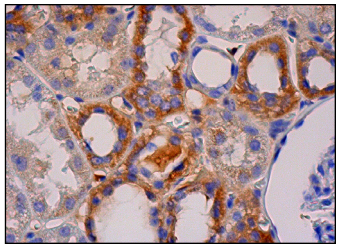
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Factor XII (C-8): sc-376770. Western blot analysis of Factor XII expression in human liver tissue extract (**A**) and of Factor XII in human plasma (**B**).



Factor XII (C-8): sc-376770. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Scheffel, J., et al. 2020. Cold-induced urticarial autoinflammatory syndrome related to Factor XII activation. Nat. Commun. 11: 179.
2. Reitsma, S.E., et al. 2021. Role of platelets in regulating activated coagulation Factor XI activity. Am. J. Physiol., Cell Physiol. 320: C365-C374.

STORAGE

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