

**Sheep Anti-Human Factor XIII
Subunit A (F.XIII-A)
Whole IgG from antiserum 10 mg**

Catalogue: SAF13A-IG
Lot: SAMPLE
Expiry date: **/****
Store at -10 to -20°C.

For Research Use Only ~ Not for use in diagnostic procedures.

Description of Factor XIII (F.XIII)

Factor XIII (F.XIII, fibrin Stabilizing factor) is the proenzyme form of a transamidase that is essential for normal haemostasis and fibrinolysis, wound healing, female fertility and foetal development. Extracellular F.XIII consists of A subunits (83 kDa each) which contain the enzyme moiety, and B subunits (76 kDa) each) which act as a carrier protein for the A subunit in circulation. Both subunits are produced under separate genetic control. In plasma, F.XIII exists as a non-covalent tetrameric complex (320 kDa) of two A-subunits and two B-subunits (A₂B₂). The concentration of F.XIII tetramer in plasma is ~25 ug/ml (~80 nM). An intracellular form of F.XIII is found in platelets, megakaryocytes and monocytes. This form of F.XIII presents as a dimer of two A-subunits only and has a molecular weight of 160 kDa. The importance of these intracellular stores is demonstrated by the observation that platelets can contribute up to half of the F.XIII activity in platelet rich plasma. The activation of F.XIII involves several steps. Thrombin cleaves after Arg³⁷ of each A-subunit in the A₂B₂ tetramer, releasing a 4.5 kDa activation peptide. Additional conformational changes induced by the binding of calcium, and by dissociation of the B-subunits form the A-subunit dimer are required to obtain full enzyme activity. F.XIIIa is a cysteine protease that catalyses the formation of γ-glutamyl-ε-lysyl bonds between the γ and α chains of polymerised fibrin molecules. Other proteins found crosslinked into fibrin clots by F.XIIIa include fibrinogen, α₂antiplasmin, fibronectin, and vitronectin and von willebrand factor¹⁻³.

References and Reviews

1. McDonagh J; Structure and Function of Factor XIII; in Haemostasis and Thrombosis, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp 301-313, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
2. Inbal A, Muszbek L; Coagulation Factor Deficiencies and Pregnancy Loss; Seminars in Thrombosis and Haemostasis 29, pp

171-174, 2003.

3. Murdock PJ, Owens DL, Chitolie A, Hutton RA, Lee CA; Development and Evaluation of ELISAs for Factor XIIIa and XIIIb Subunits in Plasma; Thrombosis Research 67, pp 73-79, 1992.

Product Specifications

Description:

Vial containing 1.000 ml of whole IgG representing approximately 1.000 ml of antiserum. Total protein is 10 mg.

Format:

Whole IgG, clear liquid.

Host Animal:

Sheep

Immunogen:

Human Factor XIII Subunit A (A₂) purified from plasma.

Concentration:

IgG concentration is 10 mg/ml, determined by absorbance using an extinction coefficient (E^{1%₂₈₀}) of 13.4.

Buffer:

10 mM HEPES, 0.15 M NaCl, 50% (v/v) glycerol, pH 7.4.

Storage:

Store between -10 and -20 °C. Product will become viscous but will not freeze. Avoid storage in frost-free freezers. Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use. Avoid exposure to sodium azide as this is an inhibitor of peroxidase activity.

Specificity:

This antibody was specific for Factor XIII subunit A as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable as a source of antibodies to Factor XIII subunit A. Neutralizing activity and species cross reactivity not determined.

Related Products

SAF13A-AP Sheep Anti F.XIII subunit A, affinity purified IgG
SAF13A-HRP Sheep Anti-FXIII subunit A, peroxidase lab IgG
SAFXIII-IG Sheep anti-Human FXIII, whole IgG antiserum
SAFXIII-HRPSheep Anti-Human FXIII peroxidase labelled IgG
FXIII-EIA Paired antibody for ELISA of FXIII, 5 x 96 wells
FXIII-DP Human plasma deficient in FXIII, immune depleted

Visit our site (www.enzymeresearch.co.uk) for further details.

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