REPRESENTATIVE DATASHEET

Sheep anti-Factor XIII Subunit A (FXIII-A)

Biotinylated Affinity-Purified IgG
0.1 mg

Product #: SAF13A-APBIO
Lot #: XXXX
Expiry date: XXXX

Store at 2°C to 8°C

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

Description of Factor XIII (FXIII)

Factor XIII (FXIII, 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 FXIII 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, FXIII exists as a non-covalent tetrameric complex (320 kDa) of two A-subunits and two B-subunits (A_2B_2). The concentration of FXIII tetramer in plasma is ~25 µg/mL (~80 nM). An intracellular form of FXIII is found in platelets, megakaryocytes and monocytes. This form of FXIII 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 FXIII activity in platelet rich plasma. The activation of FXIII involves several steps. Thrombin cleaves after Arg^{37} of each A-subunit in the A_2B_2 tetramer, releasing a 4.5 kDa activation peptide. Additional conformational changes induced by the binding of calcium, and by dissociation of the B-subunits from the A-subunit dimer are required to obtain full enzyme activity. FXIIIa 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 FXIIIa include fibrinogen, $\alpha_2$antiplasmin, fibronectin, vitronectin and von Willebrand factor [1-3].

REFERENCES and REVIEWS

1. McDonagh J; Structure and Function of Factor XIII; in Hemostasis 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 **XXXX** mL of affinity-purified IgG conjugated to biotin. Total protein is 0.1 mg.

Format:
APIgG-biotin conjugate as a clear, colourless liquid.

Host Animal:
Sheep

Immunogen:
Human Factor XIII Subunit A (A_2) purified from plasma.

Concentration:
APIgG-biotin concentration is **XXXX** mg/mL, determined by absorbance using an extinction coefficient ($E^{1\%}_{280}$) of 14.

Buffer:
Phosphate-buffered saline containing 0.1 mg/mL bovine albumin and 0.1% sodium azide (w/v), pH 7.4.

Storage:
Store at 2°C to 8°C.

Specificity:
Prior to conjugation, this antibody was specific for Factor XIII subunit A as demonstrated by immunoelectrophoresis and ELISA.

Applications:
Suitable as a source of biotinylated antibodies to Factor XIII subunit A.

Incorporation of Biotin:
XXXX moles of biotin per mole of IgG as determined by HABA assay.