REPRESENTATIVE DATASHEET

Sheep anti-human Factor VII (FVII)

Biotinylated Affinity-Purified IgG
0.1 mg

Product #: SAF7-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 VII (FVII)

Factor VII (FVII, also known as Stable Factor and Proconvertin) is a vitamin K-dependent glycoprotein produced in the liver. Plasma concentration of FVII is normally ~0.5 µg/mL (10 nM) in plasma. A deficiency of FVII is associated with bleeding in a clinical pattern similar to haemophilia, but is inherited as an autosomal recessive trait. The deficiency can be characterized by a quantitative (low activity and low antigen) or a qualitative (low activity and normal antigen) defect in FVII function. In its zymogen form FVII is a single chain molecule of ~50 kDa. It contains two EGF-like domains and an amino-terminal domain containing 10 γ-carboxyglutamic acid (Gla) residues. These Gla residues allow FVII to bind divalent metal ions and participate in calcium-dependent binding interactions. FVII and activated FVII (FVIIa) bind to tissue factor exposed at the site of vascular injury. FIXa, FXa or FVIIa rapidly activate tissue factor-bound FVII to FVIIa in the presence of calcium and phospholipid. Thrombin and FXIIa are able to activate FVII in the fluid phase in the absence of cofactors. The activation of the single chain zymogen FVII occurs by proteolysis after residue Arg^{152}, resulting in a two-chain active serine protease consisting of a 30 kDa heavy chain and an 18 kDa light chain. In complex with tissue factor, phospholipid and calcium, FVIIa is able to activate FX and FIX. Free FVIIa in plasma is remarkably stable, but the activity of FVIIa/TF complex is regulated by Tissue Factor Pathway Inhibitor (TFPI) in the presence of FXa, and also by Antithrombin (ATIII) in the presence of heparin[1-3].

REFERENCES and REVIEWS

1. Rao LVM, Bajaj SP, Rapaport SI; Activation of Human Factor VII During Clotting in Vitro; Blood 65, pp 218-226, 1985.
2. Lawson, JH, Butenas S, Ribarik N, Mann KG; Complex-dependent Inhibition of Factor VIIa by Antithrombin III and Heparin; JBC 268 pp 767-770, 1993.
3. Nemerson Y, in Hemostasis and Thrombosis, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 81-93, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
4. Broze, GJ; Binding of Human Factor VII and VIIa to Monocytes. J. Clin. Invest, pp 526-535, 1982.

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 FVII 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 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 VII as demonstrated by immunoelectrophoresis and ELISA.

Applications:
Suitable as a source of biotinylated antibodies to Factor VII.

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