

Sheep anti-human Factor VII (F.VII)

Whole IgG from antiserum

10 mg

Product #: SAFVII-IG

Lot #: XXXX

Expiry date: XXXX

Store at -10 to -20°C

For Research Use Only.

Not for use in diagnostic procedures.

Description of Factor VII (F.VII)

Factor VII (F.VII, also known as Stable Factor and Proconvertin) is a vitamin K-dependent glycoprotein produced in the liver. Plasma concentration of F.VII is normally ~0.5 µg/ml (10 nM) in plasma. A deficiency of F.VII 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 F.VII function. In its zymogen form F.VII 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 F.VII to bind divalent metal ions and participate in calcium-dependent binding interactions. F.VII and activated F.VII (F.VIIa) bind to tissue factor exposed at the site of vascular injury. F.IXa, F.Xa or F.VIIa rapidly activate tissue factor-bound F.VII to F.VIIa in the presence of calcium and phospholipid. Thrombin and F.XIIa are able to activate F.VII in the fluid phase in the absence of cofactors. The activation of the single chain zymogen F.VII occurs by proteolysis after residue Arg¹⁵², 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, F.VIIa is able to activate F.X and F.IX. Free F.VIIa in plasma is remarkably stable, but the activity of F.VIIa/TF complex is regulated by Tissue Factor Pathway Inhibitor (TFPI) in the presence of F.Xa, and also by Antithrombin (ATIII) in the presence of heparin¹⁻³.

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.

Product Specifications

Description:

Vial containing XXXX ml of whole IgG representing approximately 1 ml of antiserum. Total protein is 10 mg.

Format:

Whole IgG, clear liquid.

Host Animal:

Sheep

Immunogen:

Human F.VII purified from plasma.

Concentration:

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

Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

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.

Specificity:

This antibody is specific for factor VII as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable as a source of antibodies to human factor VII.

Neutralizing activity:

Not determined.

Species Cross Reactivity:

Not determined.