

monoclonal antibody anti-human Factor VIIa IgG

REF 2282

Description

Factor VII is a vitamin K-dependent glycoprotein (Mr = 50,000) synthesized *in vivo* by the liver and circulates in the blood as a single chain protein. Factor VII (FVII) is the first zymogen of the extrinsic pathway of blood coagulation. Activation of FVII occurs via cleavage of the proenzyme by proteases (e.g. factors IXa, Xa, XIa and thrombin). Factor VII is also subject to auto-activation by Factor VIIa (FVIIa). The FVIIa molecule is the result of enzymatic cleavage at the Arg152-Ile153 bond. It consists of a 36,000 Dalton heavy chain and a 22,000 Dalton light chain held together by a disulfide bond. When FVIIa complexes with Tissue Factor, an enhanced enzymatic complex is formed that rapidly promotes coagulation. Tissue Factor Pathway Inhibitor (TFPI) negatively regulates the activity of the TF/FVIIa complex.

The normal level of fVII in human plasma is approximately 500 ng/mL. The amount of fVIIa in plasma is 1% that of fVII (5 ng/mL).

REF 2282 is a powerful inhibitor of Factor VIIa mediated coagulation in plasma as well as in a two stage chromogenic assay involving SPECTROZYME® FXa (100% of the activity is blocked at a 4:1 molar ratio of IgG to FVIIa).

The antibody does not cross-react with tissue factor or coagulation factors other than FVII/VIIa. It appears to interfere in the assembly of TF/FVIIa complex. In human plasma, REF 2282 exhibits some of the properties of the tissue factor monoclonal antibody clone TF9-5B7.

Preparation

REF 2282, clone IIH2, is a murine IgG₁ monoclonal antibody purified from cell culture via Protein G affinity chromatography. Purified human factor VIIa was used as the immunizing antigen.

Presentation

Screw-capped glass vial containing 200 µg of IgG lyophilized from 400 µL of PBS (10 mM sodium phosphate, 140 mM sodium chloride) with 100 mM mannitol, pH 7.4.

Reconstitution

Add 400 µL of deionized water to yield a 0.5 mg/mL solution in PBS pH 7.4, 100 mM mannitol. Note, further dilution requires the addition of 1% BSA (protease-free) to reduce loss of activity.

Storage

Store lyophilized antibody at 2°-8°C. Aliquot and store reconstituted antibody at -20°C or colder. Avoid freeze-thaw cycles.

Applications

REF 2282 is useful as a specific inhibitor in coagulation as well as in amidolytic assays. It may be used for inhibiting factor VIIa activity in human plasma (Reference 1). It may also be used for Western Blots at a concentration of 0.5 µg/mL, under non-reducing conditions, for FVII and FVIIa.

Warnings and Precautions

For Research Use Only.

References

- Goel, M. S. and Diamond, S. L. Neutrophil Enhancement of Fibrin Deposition Under Flow Through Platelet-Dependent and -Independent Mechanisms. *Arteriosclerosis, Thrombosis and Vascular Biology* 2001, **21**: 2093-2098.

Related Products

REF 407REC/N Recombinant human factor VIIa

REF 827 IMUBIND® Factor VIIa ELISA

Definition of Symbols

	Manufacturer
	Consult instructions for use
	Temperature Limitation
	Lot Number
	Refer to Safety Data Sheet
	Expiration Date
	Catalog Number