

# Factor XIa (Human)

## 0.10 mg

Ref#: HF11A  
Lot#: xxxxxx  
Exp. Date: xxxx-xx



Store at -10 to -20°C

For Research Use Only  
Not for Use in Diagnostic Procedures  
For *in vitro* use only

<b>Description:</b>	Factor XIa (Human)
<b>Format:</b>	Frozen, in 2 mM Sodium acetate-HCl / 0.075 M NaCl / pH 5.4 / 50% (v/v) Glycerol
<b>Host:</b>	Human
<b>Storage:</b>	Store between -10 and -20°C
<b>Volume:</b>	1 vial containing 0.164 mL
<b>Total Protein:</b>	0.10 mg
<b>Concentration:</b>	0.61 mg/mL before lyophilisation by Absorbance; Extinction Coefficient $E^{1\%}_{280} = 13.1$
<b>Activity:</b>	235.40 U/mg
<b>Molecular weight:</b>	160,000 daltons

Human Coagulation Factor XI (FXI) is a two-chain glycoprotein synthesized in the liver with a molecular weight of 160 kDa. The two chains are identical disulfide bonded polypeptides with molecular weights of 80 kDa. The normal FXI protease zymogen concentration in human plasma is about 5 µg/mL (30 nM).

Cleavage of FXI by activated Factor XII or Thrombin converts each subunit into a two-chain form and generates two active sites per FXIa molecule. The mass of FXIa is 160 kDa unreduced, but upon reduction FXIa migrates as a heavy chain of 50 kDa and a light chain of 30 kDa. The catalytic site of FXIa resides in the light chain. In plasma, FXI or FXIa circulates in non-covalent 1:1 complex with HMW Kininogen, which acts as a cofactor in the activation of FXI by activated Factor XII. The activity of FXIa is regulated by platelets and by several proteinase inhibitors including, in order of decreasing importance, C1-inhibitor,  $\alpha$ -2-antiplasmin,  $\alpha$ -1-antitrypsin and Antithrombin. Heparin has relatively little effect on the rate of inhibition of FXIa by Antithrombin. The only known natural substrate for activated FXIa is Factor IX (Christmas factor) and the only cofactor required for this reaction is ionized calcium.

The Human Factor XIa was activated from homogeneous Human Factor XI using Human Factor XIIa. This FXIa was removed using a Corn Trypsin Inhibitor column. The protein is >95% pure via SDS-PAGE.

The above protein was purified from Human plasma that was tested and found negative by FDA accepted methods for Anti-HIV 1/2, Anti-HTLV I & II, HBsAg, Anti-HCV, Syphilis, HBC Ab, HIV-1 p24 Ag or HIV-1 RNA, HCV RNA and HBV RNA. Donors are screened for CJD (Creutzfeld-Jakob Disease).