

human factor XIIa

REF 412HA

Lot No. YYMMDD, Exp. YYYY-MM-DD

Description

Factor XII, Hageman Factor, is a single chain glycoprotein zymogen ($M_r=80,000$) that circulates in plasma at a concentration of 40 mg/mL. Its activation to factor XIIa is key to initiation of the intrinsic coagulation pathway. FXIIa is the result of a single cleavage of factor XII by kallikrein at amino acids R353-Val354. This cleavage produces a two chain protease held together by disulfide bonds, also referred to as α -XIIa, consisting of a 28,000 D COOH-terminal light chain possessing the catalytic domain, and a 52,000 D NH_2 -terminal heavy chain possessing the anionic surface binding portion of the molecule.

Surface bound factor XIIa in turn activates factor XI to XIa. A secondary cleavage of factor XIIa by kallikrein yields the active light chain fragment, referred to as β -XIIa, which catalyzes solution phase activation of kallikrein, factor VII and the classical complement cascade. The light chain, while able to activate prekallikrein and factor VII in solution, demonstrates little procoagulant activity as it can not bind to anionic surfaces.

Preparation

Human factor XIIa was activated from human factor XII, itself purified from human plasma, using dextran sulfate. The dextran sulfate was removed following activation. Complete activation and purity was determined via SDS-PAGE analysis.

Presentation

Screw-capped plastic tube containing 0.5 mg of human factor XIIa in XXX μL of a buffer of 4 mM sodium acetate, 150 mM sodium chloride, pH 5.3. Protein content was determined by spectrophotometric analysis at a wavelength of 280 nm using an extinction coefficient of 1.41 for a 0.1% solution, 1 cm pathlength.

Specific Activity

Approximately XXX PEU/mg therefore the vial contains approximately XXX PEU of activity.

Storage

Store at -70°C or colder.

References

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