

human plasmin (lys-plasmin)

REF 411 Lot No. YYMMDD

Description

Human plasmin is a serine protease with a broad specificity cleaving fibrin and activating and degrading components of the coagulation and complement systems. It is converted from plasminogen by cleavage of the amino acid 560-561 bond by urokinase plasminogen activator (uPA), tissue plasminogen activator (tPA), and the streptokinase/plasmin complex. The molecule has a molecular weight of 83,000 D (lys-plasmin), consisting of a 57,000 D amino-terminal heavy chain (a-chain) and a 26,000 D carboxy-terminal light-chain (b-chain) covalently linked by 2 disulfide bonds. The light-chain (b-chain) possesses the catalytic site as well as the streptokinase binding site. The heavy-chain (a-chain) possesses five (5) kringle domains, one high affinity and 4 low affinity lysine binding sites. The ability of plasmin to bind to fibrin is mediated by these lysine binding sites.

Preparation

Human plasmin is prepared from human glu-plasminogen (molecular weight of 88,000 D) using urokinase plasminogen activator (uPA).¹ Protein content is determined spectrophotometrically using an extinction coefficient of 17.0 for a 1% solution at 280 nm. The protein is greater than 95% pure by SDS gel electrophoresis. The activity is determined by a chromogenic substrate assay.

Warning

The source material for this reagent has been found to be non-reactive for Hepatitis B Surface Antigen (HBsAg), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus Type 1 and Type 2 (HIV-1, HIV-2) using FDA Approved methods. As no known test method can provide complete assurance that products derived from human blood will not transmit HBsAg, HCV, HIV-1, HIV-2 or other blood-borne pathogens, this reagent should be handled as recommended for any potentially infectious human specimen.

Presentation

Plastic cryotube containing 2 mg of human plasmin, having greater than 95% active sites, in a buffer of 100 mM potassium citrate, pH 7.4 with 20% glycerol.

Activity

Lot No. YYMMDD has a specific activity of X.X units/mg. The activity has been measured using a chromogenic assay where 1 unit of plasmin activity hydrolyzes 1 μ mole of SPECTROZYME® PL per minute. Therefore the cryotube contains XX.X units of activity.

Concentration

Lot No. YYMMDD has a concentration of X.XX mg/mL. Therefore the cryotube contains XXX μ L of solution.

Storage

Store at -20°C. Plasmin may be stored at 2°-8°C for 12 hours but should be kept frozen until use and not subjected to repeated freeze-thaw cycles.

NOTE: When properly stored at -20°C, glycerol/water solutions are viscous. Fluid may adhere to the cap of the cryotube and material lost when opening the tube. It is highly recommended to centrifuge the tube to collect the solution at the bottom before opening to prevent loss of product.

References

1. Robbins, K. C. *Methods in Enzymology* 1976, **45**: 257.
2. *Biochimica et Biophysica Acta* 1983; **745**: 20-31.
3. Collen, D. *Blood Coagulation* 1986, Elsevier, 243-258.
4. Castellino, F. J. *et al. Methods in Enzymology* 1981, **80**: 365.
5. Barlow, G. H., *et al. Biochemistry* 1984, **23**: 2384.

Related Products

REF 400, human glu-plasminogen, 5 mg vial.
REF 410, human glu-plasminogen, 1 mg vial.
REF 416, bovine plasminogen, 1 mg vial
REF 251L, SPECTROZYME® PL, chromogenic substrate for plasmin, 50 μ mole vial.