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Plasminogen, bovine

REF 416

Description

Plasminogen is a single chain glycoprotein synthesized in the liver and has a concentration in plasma of approximately 0.21 mg/mL (21 mg/dL). The molecule is comprised of 790 amino acids and has a molecular weight of 88,000 D (glu-plasminogen). Plasminogen possesses five (5) kringle regions between amino acids 77 aand 560, in which reside one high affinity and four low affinity lysine binding sites. The interaction of plasminogen with fibrin and alpha-2- antiplasmin is mediated by these lysine binding sites.

Glu-plasminogen is readily converted to lys-plasminogen (aa 77-790) by plasmin and is converted to plasmin by cleavage of the amino acid 560-561 bond by urokinase (uPA), tissue plasminogen activation (tPA), and the streptokinase/plasmin complex. Plasmin is a two chain molecule covalently linked by a disulfide bond with the catalytic site located on the B-chain of the molecule. Bovine plasminogen is not activated by streptokinase alone. tPA activation is stimulated several hundredfold by poly D-lysine and CNBr digested fibrinogen fragments. uPA activation is upregulated approximately 10-fold in the presence of 6-aminohexanoic acid (EACA) or poly-D-lysine.

Plasminogen is insoluble in distilled/deionized water alone but is completely soluble up to at least 5 mg/mL in buffers with ionic strength greater than 0.1.

Preparation

REF 416 was prepared from fresh frozen bovine plasma via a combination of gel filtration and affinity chromatography. 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 under both reducing and non-reducing conditions. The preparation contains less than 100 ppm of plasmin activity.

Presentation

Screw-capped glass vial containing 1.0 mg of bovine plasminogen lyophilized from a 1 mL solution of 10 mM Sodium Phosphate, 140 mM Sodium Chloride, 100 mM Mannitol, pH 7.4.

Reconstitution

Add 1.0 mL of filtered deionized or sterile water to generate a 1.0 mg/mL stock solution.

Storage

Store lyophilized product at 2°-8°C. Once reconstituted, aliquot and store at or below -70°C. Avoid repeated freeze-thaw cycles.

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

human glu-plasminogen - REF 400, 410
Urokinase, human - REF 128
ACTICHROME® PLG, plasminogen activity assay - REF 851
SPECTROZYME® PL, plasmin chromogenic substrate -REF 251

Warnings and Precautions

For Research Use Only. Use appropriate safety precautions as with any biological product.

Definition of Symbols

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