

## human glu-plasminogen

### **REF** 410 and 400

#### Description

Human 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 and 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. 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-aminoheptanoic 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

Human glu-plasminogen ( $M_r = 88,000$  D) is prepared from fresh human citrated plasma by a combination of gel filtration and lysine-agarose affinity chromatography in the presence of aprotinin to minimize any plasmin contamination. Treatment with aprotinin-agarose is carried out prior to the gel filtration step to remove any traces of plasmin. The level of plasmin alpha-2-antiplasmin complex in this product is exceptionally low (see Nagel, A., *et al. Fibrinolysis* 1994; **8**, Suppl 2: 135-137.) 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

REF 410 - Screw-capped glass vial containing 1.0 mg of human glu-plasminogen lyophilized from a solution of 10 mM Sodium Phosphate, 140 mM Sodium Chloride, pH 7.4.

REF 400 - Screw-capped glass vial containing 5.0 mg of human glu-plasminogen lyophilized from a solution of 10 mM Sodium Phosphate, 140 mM Sodium Chloride, pH 7.4.

#### Reconstitution

REF 410 - Add 1.0 mL of filtered deionized or sterile water to generate a 1.0 mg/mL stock solution.

REF 400 - Add 2.0 mL of filtered deionized or sterile water to generate a 2.5 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.

#### Warnings and Precautions

For Research Use Only.

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.



#### Warning

|                                  |                                                                                                                                                    |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hazard Statement:</b>         | H319 Causes serious eye irritation.                                                                                                                |
| <b>Precautionary Statements:</b> | P264 Wash thoroughly after handling.                                                                                                               |
|                                  | P280 Wear protective gloves/eye protection/face protection.                                                                                        |
|                                  | P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing |
|                                  | P337 + P313. If eye irritation persists: Get medical advice/attention.                                                                             |

## 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

|                     |         |
|---------------------|---------|
| Plasmin, human      | REF 411 |
| Plasminogen, bovine | REF 416 |
| ACTICHROME® PLG     | REF 851 |

## Definition of Symbols

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