Recombinant Human
Tissue Plasminogen Activator (TPA)

Catalog No.: PA1227, PA12247, PA1227XC
Quantity/Conc.: PA1227: 20 µg, PA1227X: 100 µg, PA1227XC: 1 mg / 1 mg/ml (before lyophilisation)
Source: Chinese Hamster Ovary (CHO) Cells
Description: Recombinant Human Tissue Plasminogen Activator (TPA) is a single, glycosylated polypeptide chain containing 527 amino acids and having a molecular mass of 59008.71 Dalton. Human TPA is a serine protease enzyme that converts plasminogen to plasmin. Human TPA is purified by proprietary chromatographic techniques.

Gene Name: PLAT
Protein synonyms: Tissue-type plasminogen activator precursor (EC 3.4.21.68), tPA, t-PA, t-plasminogen activator, Alteplase, Retepase
Functional comp.: Tissue-type plasminogen activator chain A, Tissue-type plasminogen activator chain B.
Protein Family: Belongs to the peptidase S1 family.
Related proteins: •Porcine Enteropeptidase/Enterokinase •Recombinant Human Factor VIIa •Human Factor IX •Recombinant Bovine Trypsin •Recombinant Human Hepatocyte Growth Factor •Recombinant Human Angiostatin Kringles 1-3
Format: Recombinant Human TPA was lyophilized from a sterile filtered, concentrated (1mg/ml) solution containing 1.7gr L-arginine, 0.5gr phosphoric acid and 4mg tween 80. It is recommended to reconstitute the lyophilized Human TPA in sterile 18MO-cm H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Protein content: Protein quantitation was carried out by two independent methods:
1. UV spectroscopy at 280 nm.
Purity: Greater than 98.0% as determined by:
(a) Analysis by RP-HPLC.
(b) Anion-exchange FPLC.
(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained.

Amino Acid Seq.: The sequence of the first five N-terminal amino acids was determined and was found to be:Ser Tyr Gln Val Ile.
Dimers & aggreg.: Less than 1% as determined by silver-stained SDS-PAGE gel analysis.
Endotoxin: Less than 0.1 ng/µg (IEU/µg) of Recombinant Tissue Plasminogen Activator.
Biological activity: Human TPA is fully biologically active when compared to World Health Organization (WHO) reference standard which is 5.8x10⁵ IU/mg.
Storage: Lyophilized Human TPA although stable at room temperature for 3 weeks, should be stored desiccated below -20°C. Upon reconstitution Human TPA should be stored at 4°C between 2-7 days and for future use below -20°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles. Shelf life: one year from despatch.

References:

Klausner, A., Biotechnology 4, 706 (1986)

2. IV Tissue Plasminogen Activator for Stroke in the Community. What We Know and Don't Know 10 Years After FDA Approval. Stroke 2006 Jan 5;
3. An open-label study to evaluate the safety and efficacy of tissue plasminogen activator in treatment of severe frostbite. J Trauma 2005 Dec;59(6):1350-4; discussion 1354-5

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