

## tPA Protein, Human, Recombinant (His)

### General Information

Synonyms:	TPA;T-PA;t-plasminogen activator;Tissue plasminogen activator
Protein Construction:	Ser36-Pro562
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P00750
Molecular Weight:	55-80 KDa (reducing condition)
AA Sequence:	Ser36-Pro562

### QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	Greater than 95% as determined by reducing SDS-PAGE. (QC verified)
Endotoxin:	< 0.1 ng/μg (1 EU/μg) as determined by LAL test.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Succinate, 4% Trehalose, 4% Mannitol, 0.2 mM CaCl <sub>2</sub> , 0.02% Tween 80, pH 4.5.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months.

Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Tissue-type plasminogen activator (PLAT) is a protein that secreted into extracellular space. PLAT contains five domains: EGF-like domain, fibronectin type-I domain, 2 kringle domains and peptidase S1 domain. It belongs to the peptidase S1 family. The main function of this protein is to convert plasminogen into biologically active plasmin. As a protease, PLAT plays a crucial role in regulating blood fibrinolysis, maintaining the homeostasis of extracellular matrix and in modulating the post-translational activation of growth factors. PLAT is found not only

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in the blood, where its primary function is as a thrombolytic enzyme, but also in the central nervous system (CNS). It participates in a number of physiological and pathological events in the CNS, as well as the role of neuroserpin as the natural regulator of PLAT's activity in these processes. Increased or decreased activity of PLAT leads to hyperfibrinolysis or hypofibrinolysis, respectively. In addition, as a cytokine, PLAT plays a pivotal role in the pathogenesis of renal interstitial fibrosis through diverse mechanisms. Thus, as a fibrogenic cytokine, it promotes the progression of kidney diseases.

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