



Catalog Number: 10157-H01H2

General Information

Gene Name Synonym:

T-PA; TPA

Protein Construction:

A DNA sequence encoding the β chain (Ile 311-Pro 562) of mature human tPA (NP_000921.1) was expressed with the fused Fc region of human IgG1 at the N-terminus.

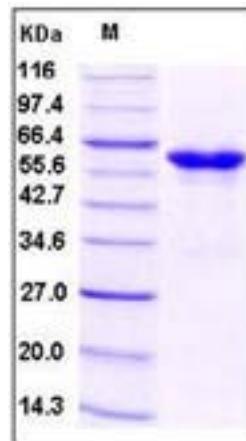
Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

SDS-PAGE:



Protein Description

Tissue plasminogen activator (abbreviated tPA or PLAT), is traditionally viewed as a simple serine protease whose main function is to convert plasminogen into biologically active plasmin. As a protease, tPA plays a crucial role in regulating blood fibrinolysis, in maintaining the homeostasis of extracellular matrix and in modulating the post-translational activation of growth factors. tPA is synthesized and secreted as a single chain polypeptide precursor which is cleaved in turn by plasmin. Proteolytic cleavage at the C-terminal side of Arg275 generates the enzyme composed of two subunits, designated as α and β chains which are held together by a single disulfide bond. Unlike the other members of the chymotrypsin family, tPA has one particular distinction in that the catalytic efficiency of the single-chain enzyme is only slightly lower than that of the proteolytically cleaved form and is therefore not a true zymogen. tPA is found not only 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 tPA's activity in these processes. Increased or decreased activity of tPA leads to hyperfibrinolysis or hypofibrinolysis, respectively. In addition, as a cytokine, tPA 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.

References

- 1.Yepes M, et al. (2004) New functions for an old enzyme: nonhemostatic roles for tissue-type plasminogen activator in the central nervous system. *Exp Biol Med (Maywood)*. 229(11): 1097-104.
- 2.Samson AL, et al. (2006) Tissue-type plasminogen activator: a multifaceted modulator of neurotransmission and synaptic plasticity. *Neuron*. 50(5): 673-8.
- 3.Skrzypiec AE, et al. (2008) Tissue plasminogen activator in the amygdala: a new role for an old protease. *J Physiol Pharmacol*. 59 Suppl 8: 135-46.

Usage Guide

Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.