

Recombinant Human TFPI Protein

Catalog No.: RP01434 **Recombinant**

Sequence Information

Species	Gene ID	Swiss Prot
Human	7035	P10646

Tags

C-His

Synonyms

EPI; LACI; TFI; TFPI1;TFPI;LACI;TFI;TFPI1

Product Information

Source	Purification
HEK293 cells	> 95% by SDS-PAGE.

Endotoxin

<0.1EU/μg

Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Tissue factor pathway inhibitor (TFPI) is the natural inhibitor of TF coagulant and signaling activities. It is a Kunitz-type serine proteinase inhibitor that down-regulates tissue factor-initiated blood coagulation. With its Kunitz domains, TFPI exhibits significant homology with human inter-alpha-trypsin inhibitor and bovin basic pancreatic trypsin inhibitor. TFPI is the natural inhibitor of TF coagulant and signaling activities. The importance of TFPI in the regulation of blood coagulation is emphasized by how its activity is modulated in human disease. In a factor (F) Xa-dependent feedback system, TFPI binds directly and inhibits the TF-FVII/FVIIa complex. Normally, TFPI exists in plasma both as a full-length molecule and as variably carboxy-terminal truncated forms. TFPI also circulates in complex with plasma lipoproteins. The levels and the dual inhibitor effect of TFPI on FXa and TF-FVII/FVIIa complex offers insight into the mechanisms of various pathological conditions triggered by TF. TFPI may play an important role in modulating TF-induced thrombogenesis and it may also provide a unique therapeutic approach for prophylaxis and/or treatment of various diseases. In addition, studies have shown that TFPI exhibits antiangiogenic and antimetastatic effects in vitro and in vivo. In animal models of experimental metastasis, both circulating and tumor cell-associated TFPI are shown to significantly reduce tumor cell-induced coagulation activation and lung metastasis.

Basic Information

Description

Recombinant Human TFPI Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Asp29-Lys282) of human TFPI1 (Accession #NP_006278.1) fused with a 6×His tag at the C-terminus.

Bio-Activity

Measured by its ability to inhibit trypsin cleavage of a fluorogenic peptide substrate, Mca-RPKPVE-Nval-WRK(Dnp)-NH₂. The IC₅₀ value is <0.41 nM.

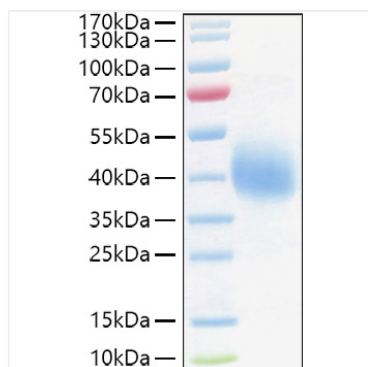
Storage

Store the lyophilized protein at -20°C to -80°C for long term.

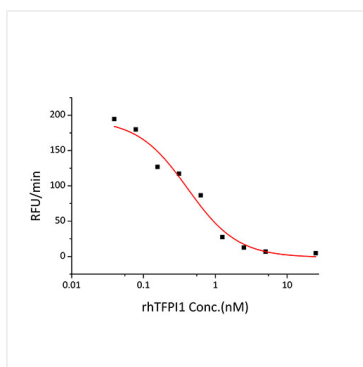
After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.

Avoid repeated freeze/thaw cycles.

Validation Data



Recombinant Human TFPI Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 37-50kDa.



Recombinant human TFPI1 inhibits trypsin cleavage of a fluorogenic peptide substrate, Mca-RPKPVE-Nval-WRK(Dnp)-NH₂. The IC₅₀ value is <0.41nM.