



# Recombinant Protein Technical Manual

## Recombinant Human TFPI Protein (His Tag)(Active)

RPES3735

### Product Data:

**Product SKU:** RPES3735

**Size:** 10µg

**Species:** Human

**Expression host:** HEK293 Cells

**Uniprot:** NP\_006278.1

### Protein Information:

**Molecular Mass:** 30.6 kDa

**AP Molecular Mass:** 42-45 kDa

**Tag:** C-His

**Bio-activity:** Measured by its ability to inhibit trypsin cleavage of a fluorogenic peptide substrate, Mca-RPKPVE-Nval-WRK(Dnp)-NH<sub>2</sub> (Anaspec, Catalog#27114). The IC<sub>50</sub> value is < 0.4 nM, as measured in 100µL reaction mixture containing 1.25 ng trypsin (Sigma, Catalog#T4799), 10 µM substrate, 50 mM Tris, 10 mM CaCl<sub>2</sub>, 0.15 M NaCl, 0.05% Brij-35, pH 7.5.

**Purity:** > 85 % as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile PBS, pH 7.4

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** EPI;LACI;TFI;TFPI1

## Immunogen Information:

**Sequence:** Met 1-Lys 282

## 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.