PRODUCT INFORMATION

Tissue Factor/CD142 Extracellular Domain (human, recombinant)

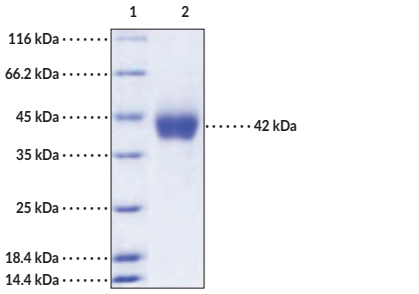
Item No. 43764

Overview and Properties

Synonyms:	CD142, Cluster of Differentiation 142, Coagulation Factor III, TF, TFA, Tissue Thromboplastin
Source:	Active recombinant human C-terminal His-tagged TF expressed in HEK293 cells
Amino Acids:	33-251
Uniprot No.:	P13726
Molecular Weight:	26.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥97% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

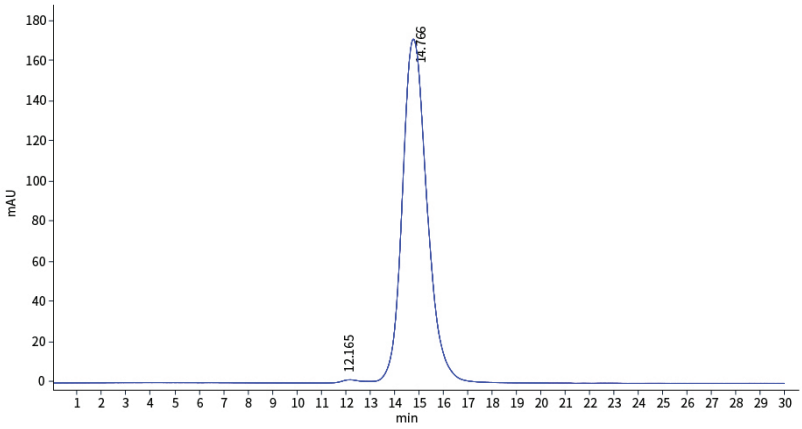
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

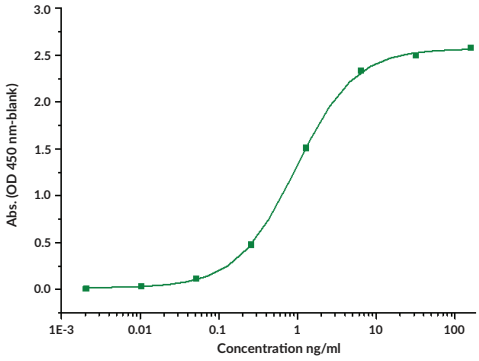
Images



Lane 1: MW Markers
Lane 2: Tissue Factor/CD142 Extracellular Domain

SDS-PAGE Analysis of Tissue Factor/CD142 Extracellular Domain. This protein has a predicted molar mass of 26.2 kDa. It has an apparent molecular weight of approximately 42 kDa by SDS-PAGE under reducing conditions.





Immobilized Tissue Factor/CD142 Extracellular Domain (human, recombinant) at 1 µg/ml (100 µl/well) binds to an anti-tissue factor/CD142 antibody EC_{50} value of 0.9 ng/ml (routinely tested).

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Description

Tissue factor (TF), also known as CD142, is a type I transmembrane single-chain glycoprotein and the primary activator of the exogenous coagulation pathway.[1,2] It is composed of an extracellular domain, which contains two fibronectin type III domains and interacts with factor VIIa (FVIIa), a transmembrane domain, and a cytoplasmic domain involved in signal transduction.[3] TF is expressed by perivascular cells, including pericytes, adventitial fibroblasts, and vascular smooth muscle cells (VSMCs) and localizes to the cell surface.[2] Vascular injury exposes pre-formed TF-FVIIa complexes to its substrates, FX and FIX, initiating coagulation.[2,3] TF levels and procoagulant activity are increased in atherosclerotic plaques isolated from patients with unstable coronary syndrome compared with those isolated from patients with stable coronary syndrome.[2] Overexpression of *F3*, the gene encoding TF, is positively correlated with tumor angiogenesis in advanced liver, breast, pancreatic, and lung cancers.[1] Cayman's Tissue Factor/CD142 Extracellular Domain (human, recombinant) protein can be used for binding assays. This protein consists of 230 amino acids, has a calculated molecular weight of 26.2 kDa, and a predicted N-terminus of Ser33 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 42 kDa.

References

1. Li, H., Yu, Y., Gao, L., *et al.* Tissue factor: A neglected role in cancer biology. *J. Thromb. Thrombolysis* **54(1)**, 97-108 (2022).
2. Grover, S.P. and Mackman, N. Tissue factor in atherosclerosis and atherothrombosis. *Atherosclerosis* **307**, 80-86 (2020).
3. Butenas, S. Tissue Factor Structure and Function. *Scientifica (Cairo)* **964862** (2012).

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