

## Product datasheet

# Recombinant human TIE2 protein ab42613

### 製品の概要

製品名	Recombinant human TIE2 protein
タンパク質長	Protein fragment

### 法規制情報

### カルタヘナ法

### 製品の詳細

由来	Recombinant
由来	Baculovirus infected Sf9 cells
アミノ酸配列	
アクセッション番号	<a href="#">NM_000459</a>
生物種	Human
領域	771 to 1124

### 特性

Our [Abpromise guarantee](#) covers the use of **ab42613** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

生理活性	140 U/μg. One unit is defined as the amount of enzyme that will phosphorylate 1 pmol of Tyr substrate per minute at pH 7.4 and 30°C. Assay buffer: 50 mM HEPES, pH 7.4, 3 mM MgCl <sub>2</sub> , 3 mM MnCl <sub>2</sub> , 1 mM DTT, 3 μM Na-orthovanadate, 0.5 mM ATP, 30 μg/ml Poly (Glu:Tyr)4:1 substrate and 2 μg/ml recombinant TIE2.
アプリケーション	Inhibition Assay
製品の状態	Liquid
備考	This protein was expressed using a Baculovirus infected Sf9 cell expression system.

### 前処理および保存

保存方法および安定性	Shipped on Dry Ice. Upon delivery aliquot. Store at -80°C. Avoid freeze / thaw cycle.
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Preservative: None

Constituents: 50% Glycerol, 0.05% Tween 20, 3mM DTT, 25mM Tris HCl, 100mM Sodium chloride, pH 8

This product is an active protein and may elicit a biological response in vivo, handle with caution.

## 関連情報

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<b>機能</b>	<p>Tyrosine-protein kinase that acts as cell-surface receptor for ANGPT1, ANGPT2 and ANGPT4 and regulates angiogenesis, endothelial cell survival, proliferation, migration, adhesion and cell spreading, reorganization of the actin cytoskeleton, but also maintenance of vascular quiescence. Has anti-inflammatory effects by preventing the leakage of proinflammatory plasma proteins and leukocytes from blood vessels. Required for normal angiogenesis and heart development during embryogenesis. Required for post-natal hematopoiesis. After birth, activates or inhibits angiogenesis, depending on the context. Inhibits angiogenesis and promotes vascular stability in quiescent vessels, where endothelial cells have tight contacts. In quiescent vessels, ANGPT1 oligomers recruit TEK to cell-cell contacts, forming complexes with TEK molecules from adjoining cells, and this leads to preferential activation of phosphatidylinositol 3-kinase and the AKT1 signaling cascades. In migrating endothelial cells that lack cell-cell adhesions, ANGPT1 recruits TEK to contacts with the extracellular matrix, leading to the formation of focal adhesion complexes, activation of PTK2/FAK and of the downstream kinases MAPK1/ERK2 and MAPK3/ERK1, and ultimately to the stimulation of sprouting angiogenesis. ANGPT1 signaling triggers receptor dimerization and autophosphorylation at specific tyrosine residues that then serve as binding sites for scaffold proteins and effectors. Signaling is modulated by ANGPT2 that has lower affinity for TEK, can promote TEK autophosphorylation in the absence of ANGPT1, but inhibits ANGPT1-mediated signaling by competing for the same binding site. Signaling is also modulated by formation of heterodimers with TIE1, and by proteolytic processing that gives rise to a soluble TEK extracellular domain. The soluble extracellular domain modulates signaling by functioning as decoy receptor for angiopoietins. TEK phosphorylates DOK2, GRB7, GRB14, PIK3R1; SHC1 and TIE1.</p>
<b>組織特異性</b>	<p>Detected in umbilical vein endothelial cells. Proteolytic processing gives rise to a soluble extracellular domain that is detected in blood plasma (at protein level). Predominantly expressed in endothelial cells and their progenitors, the angioblasts. Has been directly found in placenta and lung, with a lower level in umbilical vein endothelial cells, brain and kidney.</p>
<b>関連疾患</b>	<p>Dominantly inherited venous malformations May play a role in a range of diseases with a vascular component, including neovascularization of tumors, psoriasis and inflammation.</p>
<b>配列類似性</b>	<p>Belongs to the protein kinase superfamily. Tyr protein kinase family. Tie subfamily. Contains 3 EGF-like domains. Contains 3 fibronectin type-III domains. Contains 2 Ig-like C2-type (immunoglobulin-like) domains. Contains 1 protein kinase domain.</p>
<b>ドメイン</b>	<p>The soluble extracellular domain is functionally active in angiopoietin binding and can modulate the activity of the membrane-bound form by competing for angiopoietins.</p>
<b>翻訳後修飾</b>	<p>Proteolytic processing leads to the shedding of the extracellular domain (soluble TIE-2 alias sTIE-2). Autophosphorylated on tyrosine residues in response to ligand binding. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit. Autophosphorylation occurs in a sequential manner, where Tyr-992 in the kinase</p>

activation loop is phosphorylated first, followed by autophosphorylation at Tyr-1108 and at additional tyrosine residues. ANGPT1-induced phosphorylation is impaired during hypoxia, due to increased expression of ANGPT2. Phosphorylation is important for interaction with GRB14, PIK3R1 and PTPN11. Phosphorylation at Tyr-1102 is important for interaction with SHC1, GRB2 and GRB7. Phosphorylation at Tyr-1108 is important for interaction with DOK2 and for coupling to downstream signal transduction pathways in endothelial cells. Dephosphorylated by PTPRB. Ubiquitinated. The phosphorylated receptor is ubiquitinated and internalized, leading to its degradation.

#### 細胞内局在

Cell membrane. Cell junction. Cell junction, focal adhesion. Cytoplasm, cytoskeleton. Secreted. Recruited to cell-cell contacts in quiescent endothelial cells. Colocalizes with the actin cytoskeleton and at actin stress fibers during cell spreading. Recruited to the lower surface of migrating cells, especially the rear end of the cell. Proteolytic processing gives rise to a soluble extracellular domain that is secreted.

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