Datasheet for ABIN411357

TEK ELISA Kit

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Overview

Quantity:	96 tests
Target:	TEK
Binding Specificity:	AA 23-745
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	156-10000 pg/mL
Minimum Detection Limit:	156 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Human TIE2
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: A23-K745
Specificity:	Expression system for standard: NSO Immunogen sequence: A23-K745
Cross-Reactivity (Details):	There is cross-reactivity with human TIE1< 0.1 % .

Product Details

Sensitivity:	<5pg/mL
Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g Nacl

Target Details

Target:	TEK
Alternative Name:	TEK (TEK Products)
Background:	Protein Function: 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, ANGT1 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. . Background: Tyrosine kinase with Ig and EGF homology domain 2(Tie-2), also called TEK tyrosine kinase, endothelial(TEK). Tie-2 and tie-1 are expressed in early embryonic vascular

Target Details

	system and in maternal decidual vascular endothelial cells, where the vasculature undergoes an active angiogenesis. Tie-2, but not tie-1, expression was also detected in extraembryonic mesoderm of the amnion. Angiogenesis is coordinated with follicular cell growth in goitrogenesis. The angiopoietins, Ang-1 and Ang-2, are angiogenic growth factors acting through Tie-2. Tie-2 and Ang-1 are expressed in thyroid epithelial and endothelial cells, and Tie-2 is regulated by TSH and cAMP in follicular cells. And Tie-2 expression is increased in goiter in both humans and rats, consistent with a role in goitrogenesis. Tie2/Ang-1 signaling pathway plays a critical role in the maintenance of HSCs in a quiescent state in the BM niche. And the Tie-2 signaling pathway is also critical for endothelial cell-smooth muscle cell communication in venous morphogenesis. Synonyms: Angiopoietin-1 receptor,2.7.10.1,Endothelial tyrosine kinase,Tunica interna endothelial cell kinase,Tyrosine kinase with Ig and EGF homology domains-2,Tyrosine-protein kinase receptor TEK,Tyrosine-protein kinase receptor TIE-2,hTIE2,p140 TEK,CD202b,TEK,TIE2, VMCM, VMCM1, Full Gene Name: Angiopoietin-1 receptor Cellular Localisation: Cell membrane, Single-pass type I membrane protein. 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.
Gene ID:	7010
UniProt:	Q02763
Pathways:	RTK Signaling, Growth Factor Binding

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Comment:	Sequence similarities: Belongs to the protein kinase superfamily. Tyr protein kinase family. Tie subfamily. Tissue Specificity: 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. .

Application Details

Plate:	Pre-coated
Protocol:	human TIE2 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for TIE2 has been precoated onto 96-well plates. Standards(NSO, A23-K745) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for TIE2 is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the human TIE2 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 10000pg/mL, 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL, 312pg/mL, 156pg/mL human TIE2 standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of human cell culture supernates, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each human TIE2 standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(ng/ml): 0.87, Standard deviation: 0.048, CV(%): 5.5 • Sample 2: n=16, Mean(ng/ml): 2.75, Standard deviation: 0.132, CV(%): 4.8 • Sample 3: n=16, Mean(ng/ml): 6.3, Standard deviation: 0.334, CV(%): 5.3, • Sample 1: n=24, Mean(ng/ml): 1.01, Standard deviation: 0.088, CV(%): 8.7 • Sample 2: n=24, Mean(ng/ml): 2.88, Standard deviation: 0.19, CV(%): 6.6 • Sample 3: n=24, Mean(ng/ml): 7.2, Standard deviation: 0.422, CV(%): 5.7
Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C,4 °C
Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

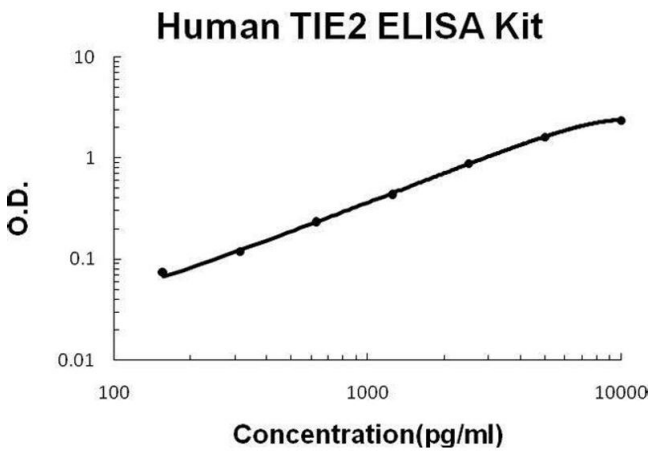
Product cited in:	Sancakdar, Guven, Uysal, Deveci, Gültürk: "Important of Angiopoietic System in Evaluation of Endothelial Damage in Children with Crimean-Congo Hemorrhagic Fever." in: **The Pediatric**

Publications

infectious disease journal, Vol. 34, Issue 8, pp. e200-5, (2015) (PubMed).

You, Zhuge, Zhu, Si et al.: "Effects of laser photocoagulation on serum angiopoietin-1, angiopoietin-2, angiopoietin-1/angiopoietin-2 ratio, and soluble angiopoietin receptor Tie-2 levels in type 2 diabetic patients with ..." in: **International journal of ophthalmology**, Vol. 7, Issue 4, pp. 648-53, (2014) (PubMed).

Images



ELISA

Image 1. Human TIE2 PicoKine ELISA Kit standard curve