Datasheet for ABIN1672877

TEK ELISA Kit

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Overview

Quantity:	96 tests
Target:	TEK
Binding Specificity:	AA 23-744
Reactivity:	Mouse
Method Type:	Sandwich ELISA
Detection Range:	125-8000 pg/mL
Minimum Detection Limit:	125 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Mouse TEK/TIE2
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Tissue Homogenate, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: A23-K744
Specificity:	Expression system for standard: NSO Immunogen sequence: A23-K744
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<10pg/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: Angiopoietin-1 receptor, also called TEK or TIE2 is a protein that in humans is encoded by the TEK gene. This gene is mapped to 9p21.2. The TEK receptor tyrosine kinase is

Target Details

	expressed almost exclusively in endothelial cells in mice, rats, and humans. This receptor possesses a unique extracellular domain containing 2 immunoglobulin-like loops separated by 3 epidermal growth factor-like repeats that are connected to 3 fibronectin type III-like repeats. The ligand for the receptor is angiopoietin-1. Defects in TEK are associated with inherited venous malformations, the TEK signaling pathway appears to be critical for endothelial cell-smooth muscle cell communication in venous morphogenesis. TEK is closely related to the TIE receptor tyrosine kinase. Synonyms: Angiopoietin-1 receptor,2.7.10.1,Endothelial tyrosine kinase,HYK,STK1,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,mTIE2,p140 TEK,CD202b,Tek,Hyk, Tie-2, Tie2, 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 (By similarity)..
Gene ID:	21687
UniProt:	Q02858
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: Specifically expressed in developing vascular endothelial cells. Abundantly expressed in lung and heart, moderately in brain, liver and kidney, and weakly in thymus, spleen and testis. .
Plate:	Pre-coated
Protocol:	mouse TEK ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. Monoclonal antibody from rat specific for TEK has been precoated onto 96-well

Application Details

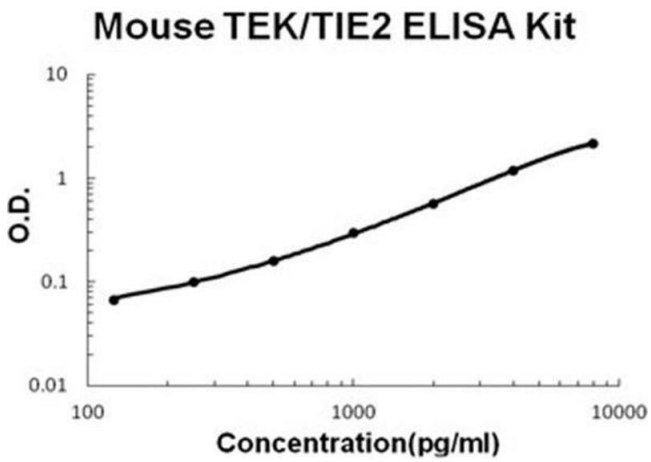
	plates. Standards(NSO, A23-K744) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for TEK is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away 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 mouse TEK amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 8000pg/mL, 4000pg/mL, 2000pg/mL, 1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL mouse TEK 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 mouse cell culture supernates, serum, tissue homogenates or plasma (heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each mouse TEK standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 454, Standard deviation: 30.9, CV(%): 6.8 • Sample 2: n=16, Mean(pg/ml): 1225, Standard deviation: 77.2, CV(%): 6.3 • Sample 3: n=16, Mean(pg/ml): 4837, Standard deviation: 285.4, CV(%): 5.9, • Sample 1: n=24, Mean(pg/ml): 632, Standard deviation: 46.14, CV(%): 7.3 • Sample 2: n=24, Mean(pg/ml): 1586, Standard deviation: 103.1, CV(%): 6.5 • Sample 3: n=24, Mean(pg/ml): 5124, Standard deviation: 312.6, CV(%): 6.1
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 infectious disease journal**, Vol. 34, Issue 8, pp. e200-5, (2015) (PubMed).



ELISA

Image 1. Mouse TEK/TIE2 PicoKine ELISA Kit standard curve

