



Datasheet for ABIN1889306  
**VEGFR2/CD309 ELISA Kit**



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1 Image

Overview

Quantity:	96 tests
Target:	VEGFR2/CD309 (VEGFR2)
Binding Specificity:	AA 20-762
Reactivity:	Mouse
Method Type:	Sandwich ELISA
Detection Range:	62.5-4000 pg/mL
Minimum Detection Limit:	62.5 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Mouse VEGFR2/KDR
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: A20-E762
Specificity:	Expression system for standard: NSO Immunogen sequence: A20-E762
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

## Product Details

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Sensitivity: <2pg/mL

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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

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Target: VEGFR2/CD309 (VEGFR2)

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Alternative Name: KDR ([VEGFR2 Products](#))

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Background: Protein Function: Tyrosine-protein kinase that acts as a cell-surface receptor for VEGFA, VEGFC and VEGFD. Plays an essential role in the regulation of angiogenesis, vascular development, vascular permeability, and embryonic hematopoiesis. Promotes proliferation, survival, migration and differentiation of endothelial cells. Promotes reorganization of the actin cytoskeleton. Isoforms lacking a transmembrane domain, such as isoform 2, may function as decoy receptors for VEGFA, VEGFC and/or VEGFD. Isoform 2 plays an important role as a negative regulator of VEGFA- and VEGFC- mediated lymphangiogenesis by limiting the amount of free VEGFA and/or VEGFC and by preventing their binding to FLT4. Modulates FLT1 and FLT4 signaling by forming heterodimers. Binding of vascular growth factors to isoform 1 leads to the activation of several signaling cascades. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate and the activation of protein kinase C. Mediates activation of MAPK1/ERK2, MAPK3/ERK1 and the MAP kinase signaling pathway, as well as of the AKT1 signaling pathway. Mediates phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, reorganization of the actin cytoskeleton and activation of PTK2/FAK1. Required for VEGFA-mediated induction of NOS2 and NOS3, leading to the production of the signaling molecule nitric oxide (NO) by endothelial cells. Phosphorylates PLCG1. Promotes phosphorylation of FYN, NCK1, NOS3, PIK3R1, PTK2/FAK1 and SRC. .

Background: Vascular endothelial growth factor receptor 2(VEGFR-2) is a VEGF receptor. This receptor, known as kinase insert domain receptor, is a type III receptor tyrosine kinase. It is mapped to 4q12. This gene encodes one of the two receptors of the VEGF. It functions as the main mediator of VEGF-induced endothelial proliferation, survival, migration, tubular morphogenesis and sprouting. The signalling and trafficking of this receptor are regulated by multiple factors, including Rab GTPase, P2Y purine nucleotide receptor, integrin alphaVbeta3, T-cell protein tyrosine phosphatase, etc. VEGF receptor 2 and the adherens junction act as shear-

## Target Details

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stress cotransducers, mediating the transduction of shear-stress signals into vascular endothelial cells. In addition to those, VEGFR-2 is also a positive functional marker defining stem cells and distinguishing them from progenitors.

Synonyms: Vascular endothelial growth factor receptor 2, VEGFR-2, 2.7.10.1, Fetal liver kinase 1, FLK-1, Kinase NYK, Protein-tyrosine kinase receptor flk-1, CD309, Kdr, Flk-1, Flk1,

Full Gene Name: Vascular endothelial growth factor receptor 2

Cellular Localisation: Cell junction . Endoplasmic reticulum . Colocalizes with ERN1 and XBP1 in the endoplasmic reticulum in endothelial cells in a vascular endothelial growth factor (VEGF)-dependent manner (By similarity). Localized with RAP1A at cell-cell junctions..

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Gene ID: 16542

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UniProt: [P35918](#)

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Pathways: [RTK Signaling](#), [Glycosaminoglycan Metabolic Process](#), [Signaling Events mediated by VEGFR1 and VEGFR2](#), [Growth Factor Binding](#), [Regulation of long-term Neuronal Synaptic Plasticity](#), [VEGF Signaling](#)

## Application Details

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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.

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Comment: Sequence similarities: Belongs to the protein kinase superfamily. Tyr protein kinase family. CSF-1/PDGF receptor subfamily.

Tissue Specificity: Expressed in endothelial cells (at protein level). Detected in embryonic endothelial cells, as well as hematopoietic stem and progenitor cells. Detected in vascular endothelium. Expressed at high levels in adult heart, lung, kidney, brain and skeletal muscle, but is also expressed at lower levels in most other adult tissues. .

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Plate: Pre-coated

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Protocol: mouse VEGFR2 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from rat specific for VEGFR2 has been precoated onto 96-well plates. Standards(NSO, A20-E762) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for VEGFR2 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

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## Application Details

yellow is proportional to the mouse VEGFR2 amount of sample captured in plate.

**Assay Procedure:** Aliquot 0.1 mL per well of the 4000pg/mL, 2000pg/mL, 1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL, 62.5pg/mL mouse VEGFR2 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 or serum to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each mouse VEGFR2 standard solution and each sample be measured in duplicate.

**Assay Precision:**

- Sample 1: n=16, Mean(pg/ml): 231, Standard deviation: 8.3, CV(%): 3.6
- Sample 2: n=16, Mean(pg/ml): 2125, Standard deviation: 87.1, CV(%): 4.1
- Sample 3: n=16, Mean(pg/ml): 3004, Standard deviation: 156.2, CV(%): 5.2,
- Sample 1: n=24, Mean(pg/ml): 342, Standard deviation: 14.7, CV(%): 4.3
- Sample 2: n=24, Mean(pg/ml): 2631, Standard deviation: 147.3, CV(%): 5.6
- Sample 3: n=24, Mean(pg/ml): 3180, Standard deviation: 200.3, CV(%): 6.3

**Restrictions:** For Research Use only

## Handling

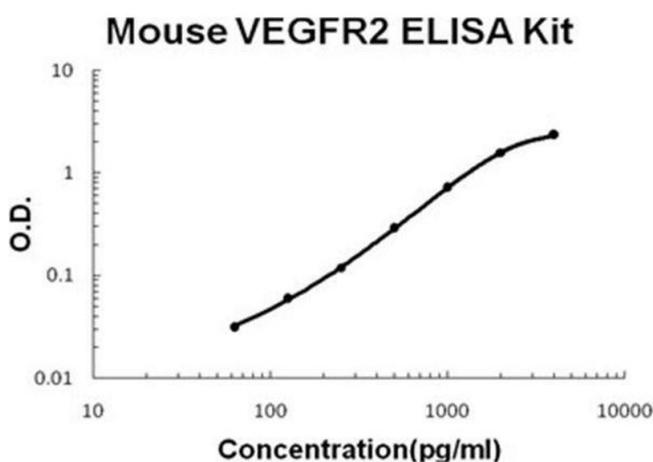
**Handling Advice:** Avoid multiple freeze-thaw cycles.

**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

## Images



### ELISA

**Image 1.** Mouse VEGFR2/KDR PicoKine ELISA Kit standard curve