

## Rabbit VEGFR2 Polyclonal Antibody | anti-VEGFR2 antibody

Phospho-VEGFR2 (Tyr996) Antibody

| CATALOG # | HOST   | REACTIVITY                                                                                         | APPLICATIONS                                                                       |
|-----------|--------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| AAA329628 | Rabbit | Human, Mouse, Rat, Monkey<br>Predicted Reactivity: Pig (88%), Bovine (88%), Sheep (88%), Dog (88%) | ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot |

### PRODUCT SYNONYMS

VEGFR2; Polyclonal Antibody; Phospho-VEGFR2 (Tyr996) Antibody; CD309; CD309 antigen; EC 2.7.10.1; Fetal liver kinase 1; FLK-1; FLK1; mouse; homolog of; KDR; Kinase insert domain receptor (a type III receptor tyrosine kinase); Kinase insert domain receptor; KRD1; Ly73; Protein tyrosine kinase receptor FLK1; Protein-tyrosine kinase receptor flk-1; soluble VEGFR2; Tyrosine kinase growth factor receptor; Vascular endothelial growth factor receptor 2; VEGFR 2; VEGFR; VEGFR-2; VGFR2\_HUMAN; anti-VEGFR2 antibody

### PRODUCT SPECIFICATIONS

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Host                                             | Rabbit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Reactivity                                       | Human, Mouse, Rat, Monkey<br>Predicted Reactivity: Pig (88%), Bovine (88%), Sheep (88%), Dog (88%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Clonality                                        | Polyclonal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Isotype                                          | Rabbit IgG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Specificity                                      | Phospho-VEGFR2 (Tyr996) Antibody detects endogenous levels of VEGFR2 only when phosphorylated at Tyr996. Tissue Specificity: Detected in cornea (at protein level). Widely expressed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Purity/Purification                              | The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Form/Format                                      | Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Concentration                                    | 1mg/ml (varies by lot)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Applicable Applications for anti-VEGFR2 antibody | ELISA (Peptide ELISA), ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Immunogen                                        | A synthesized peptide derived from human VEGFR2 around the phosphorylation site of Tyr996.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Conjugation                                      | Unconjugated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fragment                                         | Fab fragment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Post Translational Modifications                 | N-glycosylated. Ubiquitinated. Tyrosine phosphorylation of the receptor promotes its poly-ubiquitination, leading to its degradation via the proteasome or lysosomal proteases. Autophosphorylated on tyrosine residues upon ligand binding. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit. Phosphorylation at Tyr-951 is important for interaction with SH2D2A/TSAD and VEGFA-mediated reorganization of the actin cytoskeleton. Phosphorylation at Tyr-1175 is important for interaction with PLCG1 and SHB. Phosphorylation at Tyr-1214 is important for interaction with NCK1 and FYN. Dephosphorylated by PTPRB. Dephosphorylated by PTPRJ at Tyr-951, Tyr-996, Tyr-1054, Tyr-1059, Tyr-1175 and Tyr-1214. The inhibitory disulfide bond between Cys-1024 and Cys-1045 may serve as a specific molecular switch for H <sub>2</sub> S-induced modification that regulates KDR/VEGFR2 function. |

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| Subunit Structure       | Homodimer in the presence of bound dimeric VEGFA, VEGFC or VEGFD ligands; monomeric in the absence of bound ligands. Can also form heterodimers with FLT1/VEGFR1 and KDR/VEGFR2. Interacts (tyrosine phosphorylated) with LFN, NCK1, PLCG1. Interacts (tyrosine-phosphorylated active form preferentially) with DAB2IP (via C2 domain and active form preferentially); the interaction occurs at the late phase of VEGFA response and inhibits KDR/VEGFR2 activity. Interacts with SHB, SH2D2A/TSAD, GRB2, MYO, CBL and PDGFR. Interacts (via C-terminus domain) with ERN1 (via kinase domain); the interaction is facilitated in a XBP1 isoform 1- and vascular endothelial growth factor (VEGF)-dependent manner in endothelial cells. Interacts (via juxtamembrane region) with chaperone PDCL3 (via thioredoxin fold region); the interaction leads to increased KDR/VEGFR2 abundance through inhibition of its ubiquitination and degradation. Interacts (tyrosine phosphorylated) with CDC88A/GIV (via SH2-like region); binding requires autophosphorylation of the KDR/VEGFR2 C-terminal region. (Microbial infection) Interacts with HIV-1 Tat. |
| Similarity              | The second and third Ig-like C2-type (immunoglobulin-like) domains are sufficient for VEGFC binding. Belongs to the protein kinase superfamily. Tyr protein kinase family. CSF-1/PDGF receptor subfamily.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Subcellular Location    | Cell junction. Endoplasmic reticulum.<br>Note: Localized with RAP1A at cell-cell junctions (By similarity). Colocalizes with ERN1 and XBP1 in the endoplasmic reticulum in endothelial cells in a vascular endothelial growth factor (VEGF)-dependent manner (PubMed:23529610). Cell membrane>Single-pass type I membrane protein. Cytoplasm. Nucleus. Cytoplasmic vesicle. Early endosome.<br>Note: Detected on caveolae-enriched lipid rafts at the cell surface. Is recycled from the plasma membrane to endosomes and back again. Phosphorylation triggered by VEGFA binding promotes internalization and subsequent degradation. VEGFA binding triggers internalization and translocation to the nucleus. Secreted. Secreted.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Preparation and Storage | Store at -20 degree C. Stable for 12 months from date of receipt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## IMAGES



### Application Data

At 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



### IHC (Immunohistochemistry)

At 1/200 staining Human kidney tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



### IHC (Immunohistochemistry)

At 1/200 staining Mouse kidney tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



### IHC (Immunohistochemistry)

Staining Rat kidney tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



### WB (Western Blot)

Western blot analysis of VEGFR2 (Phospho-Tyr996) using serum treated COS7 whole cell lysates. -/+ means absence or presence of N peptide (non-phospho peptide) and P peptide (phospho peptide).

ADDITIONAL INFORMATION

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|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Product Information for anti-VEGFR2 antibody | 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 and isoform 3, may function as decoy receptors for VEGFA, VEGFC and/or VEGFD. Isoform 2 plays an important role as negative regulator of VEGFA- and VEGFC-mediated lymphangiogenesis by limiting the amount of free VEGFA and/or VEGFC and 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. |
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NCBI AND UNIPROT INFORMATION

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|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NCBI GI #                        | 11321597                                                                                                                                                                                  |
| NCBI GeneID                      | 3791                                                                                                                                                                                      |
| NCBI Accession #                 | NP_002244.1                                                                                                                                                                               |
| NCBI GenBank Nucleotide #        | NM_002253.2                                                                                                                                                                               |
| UniProt Accession #              | P35968; O60723; Q14178; A2RRS0; B5A925; C5IFA0                                                                                                                                            |
| Molecular Weight                 | 151,527 Da                                                                                                                                                                                |
| NCBI Official Full Name          | vascular endothelial growth factor receptor 2                                                                                                                                             |
| NCBI Official Synonym Full Names | kinase insert domain receptor (a type III receptor tyrosine kinase)                                                                                                                       |
| NCBI Official Symbol             | KDR                                                                                                                                                                                       |
| NCBI Official Synonym Symbols    | FLK1; CD309; VEGFR; VEGFR2                                                                                                                                                                |
| NCBI Protein Information         | vascular endothelial growth factor receptor 2; soluble VEGFR2; fetal liver kinase 1; fetal liver kinase-1; protein-tyrosine kinase receptor Flk-1; tyrosine kinase growth factor receptor |
| UniProt Protein Name             | Vascular endothelial growth factor receptor 2                                                                                                                                             |
| UniProt Gene Name                | KDR                                                                                                                                                                                       |
| UniProt Synonym Gene Names       | FLK1; VEGFR2; VEGFR-2; FLK-1; KDR                                                                                                                                                         |
| UniProt Entry Name               | VGFR2_HUMAN                                                                                                                                                                               |

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.