

# Anti-VEGF Receptor 2 Picoband Antibody

Catalog # ABO12900

## Product Information

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|--------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Application</b>       | WB, IHC-P, E                                                                                                  |
| <b>Primary Accession</b> | <a href="#">P35918</a>                                                                                        |
| <b>Host</b>              | Rabbit                                                                                                        |
| <b>Reactivity</b>        | Mouse, Rat                                                                                                    |
| <b>Clonality</b>         | Polyclonal                                                                                                    |
| <b>Format</b>            | Lyophilized                                                                                                   |
| <b>Description</b>       | Rabbit IgG polyclonal antibody for VEGF Receptor 2 detection. Tested with WB, IHC-P, ELISA(Cap) in Mouse;Rat. |

**Reconstitution** Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

## Additional Information

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| <b>Gene ID</b>                  | 16542                                                                                                                                                                                                                                                                                                                                  |
| <b>Other Names</b>              | 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                                                                                                                                                             |
| <b>Calculated MW</b>            | 150462                                                                                                                                                                                                                                                                                                                                 |
| <b>Application Details</b>      | Western blot, 0.1-0.5 $\mu$ g/ml<br><br>Immunohistochemistry(Paraffin-embedded Section), 0.5-1 $\mu$ g/ml<br><br>ELISA(Cap), 0.1-0.5 $\mu$ g/ml                                                                                                                                                                                        |
| <b>Subcellular Localization</b> | Cell junction.                                                                                                                                                                                                                                                                                                                         |
| <b>Tissue Specificity</b>       | 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. |
| <b>Source</b>                   | Eukaryota                                                                                                                                                                                                                                                                                                                              |
| <b>Contents</b>                 | Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na <sub>2</sub> HPO <sub>4</sub> , 0.05mg NaN <sub>3</sub> .                                                                                                                                                                                                                       |
| <b>Immunogen</b>                | E. coli-derived mouse VEGF Receptor 2 recombinant protein (Position: A20-L244).                                                                                                                                                                                                                                                        |
| <b>Cross Reactivity</b>         | No cross reactivity with other proteins.                                                                                                                                                                                                                                                                                               |

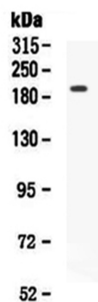
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| <b>Storage</b>             | At -20 °C; for one year. After r ° Constitution, at 4 °C; for one month. It ° Can also be aliquotted and stored frozen at -20 °C; for a longer time. Avoid repeated freezing and thawing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Protein Information</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Name</b>                | Kdr {ECO:0000312   MGI:MGI:96683}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Synonyms</b>            | Flk-1, Flk1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Function</b>            | 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. |
| <b>Cellular Location</b>   | Cell junction. Endoplasmic reticulum {ECO:0000250   UniProtKB:P35968}. Cell membrane {ECO:0000250   UniProtKB:P35968}. Note=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 {ECO:0000250   UniProtKB:P35968} [Isoform 2]: Secreted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Tissue Location</b>     | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Background

KDR (Kinase Insert Domain Receptor), also known as FLK1, VEGFR or VEGFR2, is a VEGF receptor. KDR is the human gene encoding it. Vascular endothelial growth factor (VEGF) is the only mitogen that specifically acts on endothelial cells. Its expression is upregulated by hypoxia, and its cell-surface receptor, known as fetal liver kinase-1 (Flk1) in mouse, is exclusively expressed in endothelial cells. Flk1 is the mouse homolog of KDR.

## Images

Figure 1. Western blot analysis of VEGF Receptor 2 using



anti-VEGF Receptor 2 antibody (ABO12900).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.

Lane 1: Recombinant mouse VEGFR2 Protein 1ng. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-VEGF Receptor 2 antigen affinity purified polyclonal antibody (Catalog # ABO12900) at 0.5  $\mu$ g/mL overnight at 4  $^{\circ}$ C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for VEGF Receptor 2 at approximately 166-200KD. The expected band size for VEGF Receptor 2 is at 153KD.

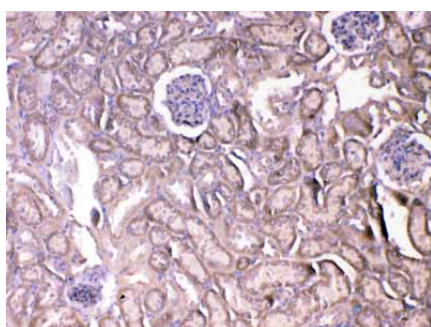


Figure 2. IHC analysis of VEGF Receptor 2 using anti-VEGF Receptor 2 antibody (ABO12900). VEGF Receptor 2 was detected in paraffin-embedded section of mouse kidney tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml rabbit anti-VEGF Receptor 2 Antibody (ABO12900) overnight at 4  $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37  $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

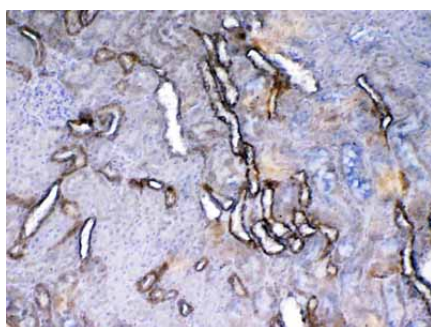


Figure 3. IHC analysis of VEGF Receptor 2 using anti-VEGF Receptor 2 antibody (ABO12900). VEGF Receptor 2 was detected in paraffin-embedded section of rat kidney tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml rabbit anti-VEGF Receptor 2 Antibody (ABO12900) overnight at 4  $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37  $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.