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# VEGFR2 (FLK1/KDR) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7643a

## Product Information

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| **Application** | WB, IF, FC, IHC-P, E |
| **Primary Accession** | P35968 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Clone Names** | RB01536 |
| **Calculated MW** | 151527 |
| **Antigen Region** | 1326-1356 |

## Additional Information

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| **Gene ID** | 3791 |
| **Other Names** | Vascular endothelial growth factor receptor 2, VEGFR-2, Fetal liver kinase 1, FLK-1, Kinase insert domain receptor, KDR, Protein-tyrosine kinase receptor flk-1, CD309, KDR, FLK1, VEGFR2 |
| **Target/Specificity** | This VEGFR2 (FLK1/KDR) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1326-1356 amino acids from the C-terminal region of human VEGFR2 (FLK1/KDR). |
| **Dilution** | WB~~1:1000 IF~~1:10~50 FC~~1:10~50 IHC-P~~1:100~500 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | VEGFR2 (FLK1/KDR) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | KDR ( HGNC:6307) |
| **Synonyms** | FLK1, VEGFR2 |

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| **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 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. |
| **Cellular Location** | Cell junction. Endoplasmic reticulum. Cell membrane. 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). {ECO:0000250, ECO:0000269\|PubMed:23529610} [Isoform 2]: Secreted. |
| **Tissue Location** | Detected in cornea (at protein level). Widely expressed. |

## Background

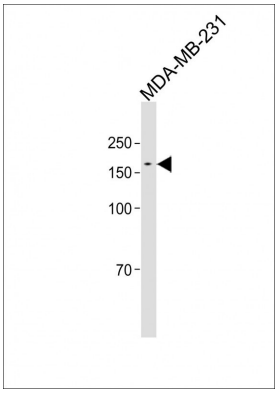
KDR (FLK1) is a receptor for VEGF or VEGFC. This protein has a tyrosine-protein kinase activity. The VEGF-kinase ligand/receptor signaling system plays a key role in vascular development and regulation of vascular permeability.

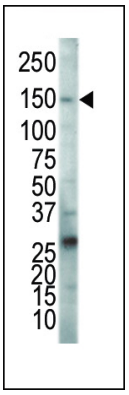
## References


Yilmaz, A., et al., Biochem. Biophys. Res. Commun. 306(3):730-736 (2003).
Zeng, H., et al., J. Biol. Chem. 278(23):20738-20745 (2003).
Kiba, A., et al., J. Biol. Chem. 278(15):13453-13461 (2003).
Elvert, G., et al., J. Biol. Chem. 278(9):7520-7530 (2003).
Yang, S., et al., Arterioscler. Thromb. Vasc. Biol. 22(11):1797-1803 (2002).

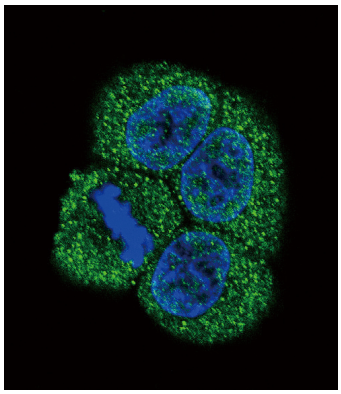

## Images

All lanes: Anti-VEGFR2 (FLK1/KDR) Antibody (C-term) at 1:1000 dilution + MDA-MB-231 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 180 KDa Blocking/Dilution buffer: 5% NFDM/TBST.

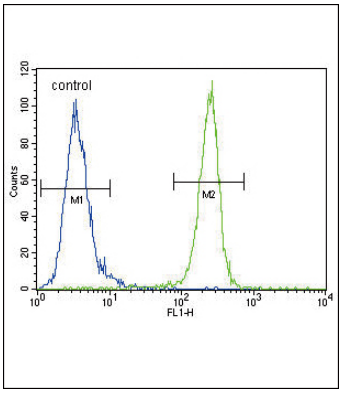



Western blot analysis of anti-KDR/FLK1 Pab (Cat. #AP7643a) in HeLa cell lysate. KDR (VEGFR2) (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

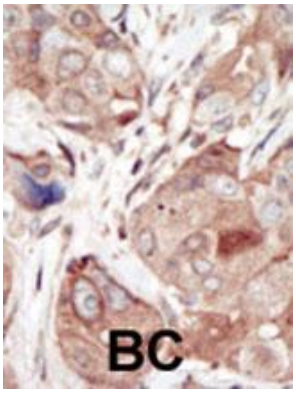


Confocal immunofluorescent analysis of VEGFR2 (FLK1/KDR) Antibody (C-term)(Cat#AP7643a) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).




VEGFR2 (FLK1/KDR) Antibody (C-term) (Cat. #AP7643a) flow cytometric analysis of MDA-MB435 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.




## Citations

- 2-Deoxy-Glucose Downregulates Endothelial AKT and ERK via Interference with N-Linked Glycosylation, Induction of Endoplasmic Reticulum Stress, and GSK3β Activation.