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KDR Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1324a

Product Information

Application	WB, FC, ICC, E
Primary Accession	P35968
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	4B4
Isotype	IgG1
Calculated MW	151527
Description	KDR has also been designated as VEFR-2 (Vascular endothelial growth factor receptor 2), CD309 (cluster of differentiation 309) and Flk1 (fetal liver kinase 1). Vascular endothelial growth factor (VEGF) is a major growth factor for endothelial cells. KDR is one of the two receptors of the VEGF. This receptor, known as kinase insert domain receptor, is a type III receptor tyrosine kinase. 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.. Mutations of this gene are implicated in infantile capillary hemangiomas.
Immunogen	Purified recombinant extracellular fragment of human KDR (aa20-764) fused with hIgGFc tag expressed in HEK293 cells.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	3791
Other Names	Vascular endothelial growth factor receptor 2, VEGFR-2, 2.7.10.1, Fetal liver kinase 1, FLK-1, Kinase insert domain receptor, KDR, Protein-tyrosine kinase receptor flk-1, CD309, KDR, FLK1, VEGFR2
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	KDR Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KDR (HGNC:6307)
Synonyms	FLK1, VEGFR2
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.

References

1. Blood. 2004 Aug 1;104(3):788-94. 2. FEBS Lett. 2002 Feb 13;512(1-3):107-10. 3. EMBO J. 2001 Jun 1;20(11):2768-78.

Images

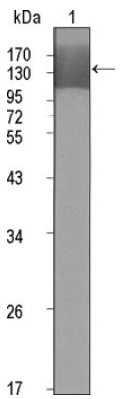


Figure 1: Western blot analysis using KDR mouse mAb against extracellular domain of human KDR (aa20-764).

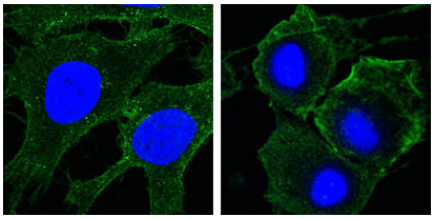


Figure 2: Confocal immunofluorescence analysis of Hela (left) and HepG2 (right) cells using KDR mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

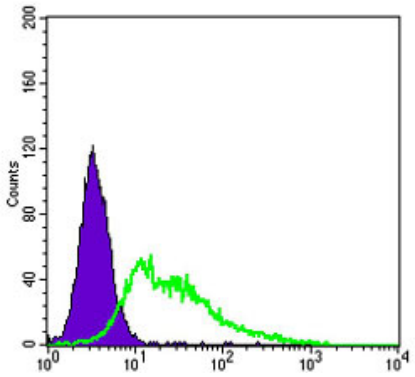


Figure 3: Flow cytometric analysis of HepG2 cells using KDR mouse mAb (green) and negative control (purple).

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