abcam

ab39378

Anti-VEGF Receptor 2 antibody [#4 (20I6)]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Constituents: PBS
Form	Lyophilized
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human KDR. Database link P35968
Clone number	#4 (20I6)
Purification technique	Affinity purification Protein G
Reconstitution	Centrifuge vial prior to opening. Please reconstitute this product to 0.1-1.0 mg/mL in sterile water.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	2-5 µg/mL
Notes	-

WB

Tested

Species	Human
Dilution info	2-5 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	2-10 µg/mL
Notes	-

Target data

See full target information KDR

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.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	A few weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	VEGF Receptor 2 also known as KDR or Flk-1 is a receptor tyrosine kinase important for mediating the effects of vascular endothelial growth factor (VEGF). This protein has a mass of approximately 150 kDa. It mostly expresses in vascular endothelial cells playing a primary role in the formation of blood vessels. The receptor can also be found in various non-endothelial tissues though in smaller amounts indicating its broad functional roles outside of the vascular system.
Biological function summary	VEGF Receptor 2 is important for angiogenesis and vascular permeability. It is part of the VEGF receptor family which also includes VEGF Receptors 1 and 3 forming a complex interaction network. Upon binding with VEGF it phosphorylates key proteins to initiate signals that regulate endothelial cell migration proliferation and survival. The receptor's function is critical for normal developmental processes and wound healing as well.
Pathways	VEGF Receptor 2 is especially important within the angiogenesis and vascular permeability pathways. It plays a central role in the VEGF signaling pathway alongside proteins like VEGF A which is the primary ligand for the receptor. The signaling through this receptor modulates various downstream proteins through phosphorylation linking it to pathways that control cellular responses essential for blood vessel formation and maintenance.
Associated diseases and disorders	VEGF Receptor 2 is significantly linked with cancer and age-related macular degeneration. In the context of cancer the overexpression or dysregulation of VEGF and its receptors including VEGF Receptor 2 often leads to enhanced tumor angiogenesis promoting tumor growth and metastasis. Additionally the receptor interacts with other proteins in pathological states such as CD309 in endothelial cell-based assays which are used for research like flow cytometry and ELISA to monitor VEGF Receptor 2 activity and its impact on diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

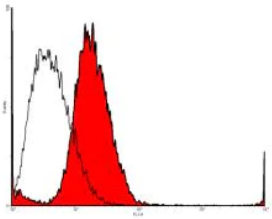
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

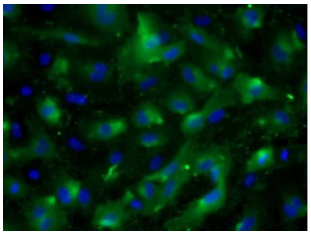
3 product images



Flow Cytometry - Anti-VEGF Receptor 2 antibody [#4 (20I6)] (ab39378)

VEGF Receptor 2 Flow Cytometry staining using mouse Anti-VEGF Receptor 2 antibody

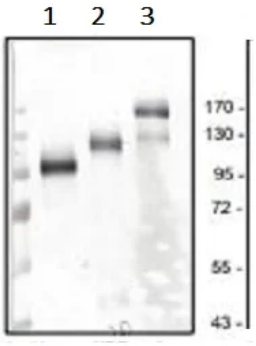
Flow cytometric analysis of HDLEC (primary human dermal lymphatic endothelial cells) labeling VEGF Receptor 2 using ab39378 at 5 µg/ml (red) compared to a negative control (unshaded).



Immunocytochemistry/ Immunofluorescence - Anti-VEGF Receptor 2 antibody [#4 (20I6)] (ab39378)

VEGF Receptor 2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-VEGF Receptor 2 antibody

HUVEC (human umbilical vein endothelial cell line) cells stained for VEGF Receptor 2 (green) using ab39378 at 7.5 µg/ml in ICC/IF. The nuclear counter stain is DAPI (blue).
A Goat anti-Mouse Alexa Fluor®488 conjugate was used as secondary antibody at 1/600 dilution.



Western blot - Anti-VEGF Receptor 2 antibody [#4 (20I6)] (ab39378)

10% SDS-PAGE gel under reducing conditions.
All lanes:
Western blot - Anti-VEGF Receptor 2 antibody [#4 (20I6)] (ab39378) at 5 µg/mL

Lane 1:
Recombinant human VEGF Receptor 2 protein

Lane 2:
Recombinant human VEGF Receptor 2 (aa 20-678) protein

Lane 3:
Recombinant human VEGF Receptor 2 (aa 20-678) protein-Fc

Predicted band size: 151 kDa

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