abcam

ab234110

Anti-VEGF Receptor 2 antibody [EPR21231]

Recombinant | 20ul selling size

Key facts

Isotype	IgG1
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR21231
Purification technique	Affinity purification Protein A
Concentration	0.535 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

ICC

Tested

Species	Human
Dilution info	1/500
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 Conditional Ambient

Appropriate short-term storage duration	1-2 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

Notes

This product was made using synthetic libraries and phage display technology.

This antibody is a recombinant chimeric antibody. Rabbit chimeric monoclonal antibody (Human Fab/ Rabbit Fc).

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

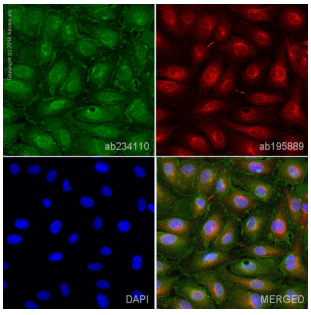
We do not recommend this combination. It is not covered by our product promise.

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.

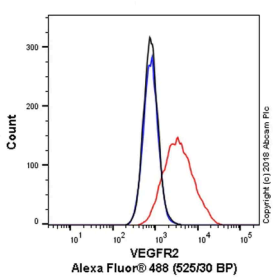
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-VEGF Receptor 2 antibody [EPR21231] (ab234110)

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

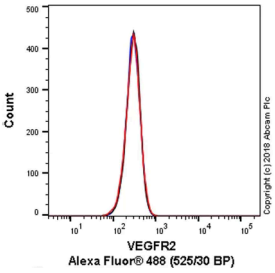
ab234110 staining VEGFR2 in HUVEC cells. The cells were fixed with 10% paraformaldeyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab234110 at 5ugml then detected with an Alexa Fluor® 488 goat anti-rabbit secondary antibody (ab150081) at a 1/1000 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue), and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at a 1/250 dilution (shown in red).



Flow Cytometry - Anti-VEGF Receptor 2 antibody [EPR21231] (ab234110)

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

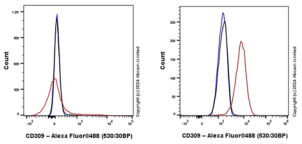
Overlay histogram showing HUVEC cells stained with ab234110 (red line).The cells were incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab234110, 1/10 dilution) for 30 min at 4°C. The secondary antibody (black line) used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150081) at 1/2000 dilution for 30 min at 4°C. Unlabelled sample (blue line) was also used as a control.
Acquisition of >30,000 total events were collected.



Flow Cytometry - Anti-VEGF Receptor 2 antibody [EPR21231] (ab234110)

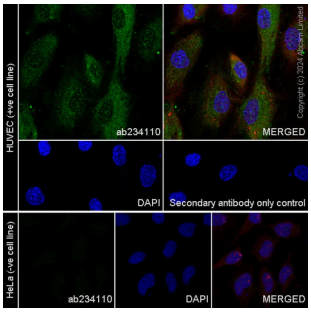
VEGF Receptor 2 Flow Cytometry staining using rabbit Anti-VEGF Receptor 2 antibody

Overlay histogram showing Jurkat cells stained with ab234110 (red line).The cells were incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab234110, 1/10 dilution) for 30 min at 4°C. The secondary antibody (black line) used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150081) at 1/2000 dilution for 30 min at 4°C. Unlabelled sample (blue line) was also used as a control.
Acquisition of >30,000 total events were collected.
Negative control: Jurkat cells.



Flow Cytometry - Anti-VEGF Receptor 2 antibody [EPR21231] (ab234110)

Flow cytometry analysis of Jurkat (human T cell leukemia T lymphocyte from peripheral blood, Left) / HUVEC (human umbilical vein endothelial cell, Right) cells staining with ab234110. Secondary used was Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution, and isotype control was Rabbit monoclonal IgG (ab172730) / Black. Gated on viable cell. Negative control: Jurkat



Immunocytochemistry - Anti-VEGF Receptor 2 antibody [EPR21231] (ab234110)

Immunocytochemistry analysis of 100% methanol-fixed 0.1% TritonX-100 permeabilized HUVEC (human umbilical vein endothelial cell) cells staining with ab234110 at 1/500 dilution. Counterstained with ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution. The secondary used was ab150097 Goat Anti-Rabbit IgG Fc (Alexa Fluor® 488) preadsorbed at 1/1000 dilution. Confocal image showing cytoplasmic and nuclear staining in HUVEC cell line (shown in green). The counterstain was observed in red. Nuclear DNA was labelled with DAPI (shown in blue). Negative control: HeLa Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

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