abcam

ab233693

Anti-VEGF Receptor 2 antibody [EPR21884-236]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
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	EPR21884-236
Purification technique	Affinity purification Protein A
Concentration	0.504 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

I-ELISA

Tested

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human, Recombinant full length protein - Mouse

Dilution info	-
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, 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.

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

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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.

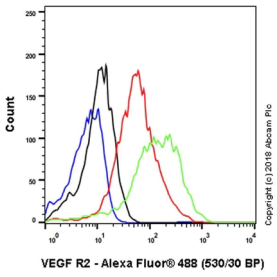
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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5 product images

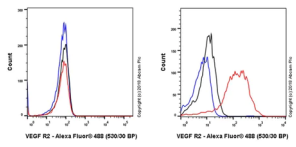


Flow Cytometry - Anti-VEGF Receptor 2 antibody [EPR21884-236] (ab233693)

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

Flow cytometric analysis of bEnd.3 (mouse brain endothelioma cell line) cell line treated with 1 µg/ml Brefeldin A for 3 hours (red) and an untreated control (green) labeling VEGF Receptor 2 with ab233693 at 1/500 dilution treated with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
BFA treatment reduced cell surface VEGF Receptor 2 [PMID: 21063020].

Gated on viable cells.



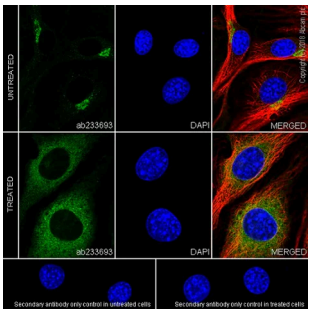
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VEGF Receptor 2 Flow Cytometry staining using rabbit Anti-VEGF Receptor 2 antibody

Flow cytometric analysis of bEnd.3 (mouse brain endothelioma cell line, right) and NIH/3T3 (mouse embryo fibroblast cell line, left) cell line labeling VEGF Receptor 2 with ab233693 at 1/500 dilution compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

Gated on viable cells.

Negative control: NIH/3T3 [PMID: 20978347].

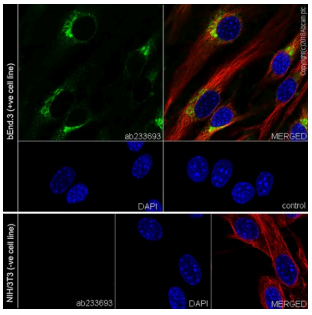


Immunocytochemistry/ Immunofluorescence - Anti-VEGF Receptor 2 antibody [EPR21884-236] (ab233693)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized bEnd.3 (mouse brain endothelioma) cells labeling VEGF Receptor 2 with ab233693 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Redistribution of the VEGF Receptor 2 from the perinuclear Golgi to vesicular structures throughout the cytosol after treatment with Brefeldin A (1 µg/ml, 3 hours) in bEnd.3. BFA treatment alters the subcellular localisation of VEGF Receptor 2 [PMID: 21063020]. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



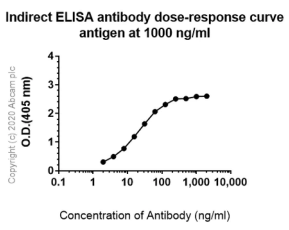
Immunocytochemistry/ Immunofluorescence - Anti-VEGF Receptor 2 antibody [EPR21884-236] (ab233693)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized bEnd.3 (mouse brain endothelioma cell line) and NIH/3T3 (mouse embryo fibroblast cell line) cells labeling VEGF Receptor 2 with ab233693 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing perinuclear staining in bEnd.3 cells.
Negative control: NIH/3T3 [PMID: 20978347].

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Indirect ELISA - Anti-VEGF Receptor 2 antibody [EPR21884-236] (ab233693)

ELISA analysis of Mouse VEGF R2 recombinant protein at 1000 ng/mL with ab233693. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1/2500 dilution was used as the secondary antibody.

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