abcam

ab313771

Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280]

Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] is a Rabbit Monoclonal antibody that is used in PDGFR alpha (mutated D842V) Flow Cytometry (Intra), ICC/IF, IHC-P, IP, Western Blot. Suitable for Human samples.

PDGFRA is a receptor tyrosine kinase whose binding to the important family of platelet derived growth factors leads to activation of the PI3K/AKt pathway. Its importance in cancer is attested by the fact that all Gastrointstinal Stromal Tumors (GISTs) arise from activating mutations in either PDGFRA or c-KIT. Besides GISTS, PDGRA is well studied in neuronal cancers, lung cancers, breast cancers and osteosarcomas.

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	EPR26304-280
Purification technique	Affinity purification Protein A
Specificity	This antibody has not been validated in endogenous samples.
Concentration	0.519 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Transfected cell lysate - Human
Dilution info	1/1000
Notes	-

Predicted

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Transfected cell line - Human
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Predicted

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Transfected cell line - Human
Dilution info	1/500
Notes	-

Predicted

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Transfected cell line - Human
Dilution info	1/50
Notes	-

Predicted

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

IP

Tested

Species	Transfected cell lysate - Human
Dilution info	1/30
Notes	-

Predicted

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

Target data

See full target information PDGFRA D842V

Function	Tyrosine-protein kinase that acts as a cell-surface receptor for PDGFA, PDGFB and PDGFC and plays an essential role in the regulation of embryonic development, cell proliferation, survival and chemotaxis. Depending on the context, promotes or inhibits cell proliferation and cell migration. Plays an important role in the differentiation of bone marrow-derived mesenchymal stem cells. Required for normal skeleton development and cephalic closure during embryonic development. Required for normal development of the mucosa lining the

gastrointestinal tract, and for recruitment of mesenchymal cells and normal development of intestinal villi. Plays a role in cell migration and chemotaxis in wound healing. Plays a role in platelet activation, secretion of agonists from platelet granules, and in thrombin-induced platelet aggregation. Binding of its cognate ligands - homodimeric PDGFA, homodimeric PDGFB, heterodimers formed by PDGFA and PDGFB or homodimeric PDGFC -leads to the activation of several signaling cascades; the response depends on the nature of the bound ligand and is modulated by the formation of heterodimers between PDGFRA and PDGFRB. Phosphorylates PIK3R1, PLCG1, and PTPN11. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate, mobilization of cytosolic Ca(2+) and the activation of protein kinase C. Phosphorylates PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, and thereby mediates activation of the AKT1 signaling pathway. Mediates activation of HRAS and of the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Promotes activation of STAT family members STAT1, STAT3 and STAT5A and/or STAT5B. Receptor signaling is down-regulated by protein phosphatases that dephosphorylate the receptor and its down-stream effectors, and by rapid internalization of the activated receptor.

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	PDGFR alpha also known as platelet-derived growth factor receptor alpha is a cell surface receptor tyrosine kinase with a mass of approximately 123 kDa. It plays a mechanical role in transmitting signals across the cell membrane initiating cellular responses. PDGFR alpha is widely expressed in mesenchymal cells including fibroblasts and smooth muscle cells. Researchers frequently employ techniques such as PDGFRA IHC and PDGFRA staining to study the localization and expression levels in tissues.
Biological function summary	PDGFR alpha mediates cell proliferation survival and differentiation especially in embryonic development and wound healing. The receptor often forms a complex by dimerizing with itself or with PDGFR beta to activate intracellular signaling cascades. This process is initiated upon ligand binding which triggers autophosphorylation on tyrosine residues. The receptor is also recognized in the detection of PDGFRA with assays such as PDGFRA ELISA.
Pathways	PDGFR alpha significantly affects the MAPK and PI3K/AKT signaling pathways which regulate cellular growth and survival signals. Through these pathways PDGFR alpha interacts with related proteins like SHP-2 and PI3K contributing to signal transduction involved in cellular responses. This role links PDGFR alpha to important cellular processes via its kinase activity and signal integration.
Associated diseases and disorders	PDGFR alpha is implicated in conditions such as gastrointestinal stromal tumors (GISTs) and idiopathic pulmonary fibrosis (IPF). It connects to proteins such as KIT in GISTs where mutations cause aberrant receptor signaling leading to tumorigenesis. Aberrant PDGFR alpha signaling also associates with IPF a disorder characterized by increased fibroblast proliferation and fibrotic tissue formation. These connections make PDGFR alpha a significant target for research and therapeutic intervention.

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.

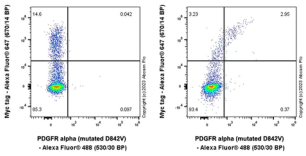
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

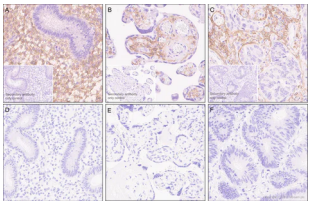
7 product images



Flow Cytometry (Intracellular) - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

PDGFR alpha (mutated D842V) Flow Cytometry (Intracellular) staining using rabbit Anti-PDGFR alpha (mutated D842V) antibody

Flow cytometric analysis of 293T (human embryonic kidney epithelial cell) transfected with a human wild-type PDGFRA expression vector containing a Myc tag (left); human PDGFRA (D842V) expression vector containing a Myc tag (right). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Cell labelling of PDGFRA (D842V) with ab313771 at 1/50 dilution. A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) was used at 1/5000 dilution. No cross-reactivity with human wild-type PDGFRA.



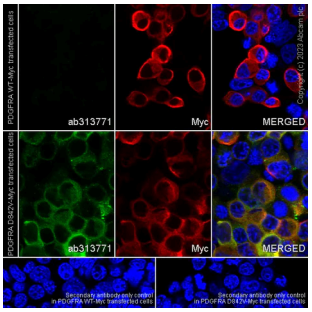
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

Immunohistochemical analysis of paraffin-embedded (A, D) human endometrial tissue; (B, E) human placenta; (C, F) human colon carcinoma.

A-C: Sections were incubated with anti-PDGFRA [EPR22059-270] (ab203491; 1:2000 [0.28µg/mL]) for 30 mins at room temperature. Positive staining on human endometrium (image A), placenta (image B), and colon carcinoma (image C). D-F: Sections were incubated with anti-PDGFRA D842V [EPR26304-280] (ab313771; 1:4000 [0.13µg/mL]) for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument counterstained with Hematoxylin. No staining on human endometrium (image D), placenta (image E), or colon carcinoma (image F). No cross-reactivity with human wild-type PDGFRA.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.

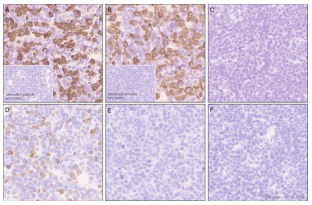


Immunocytochemistry/ Immunofluorescence - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized 293T (human embryonic kidney epithelial cell) labelling PDGFRA (D842V) with ab313771 at 1/500 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Cells were counterstained with anti-Myc tag Mouse mab [9E10] (Alexa Fluor® 594) at 1/100 dilution (Red). The Nuclear counterstain is DAPI (Blue).

Confocal image showing cytoplasmic and membrane staining in 293T overexpressing human PDGFRA (D842V). No staining in 293T cells overexpressing human wild-type PDGFRA. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

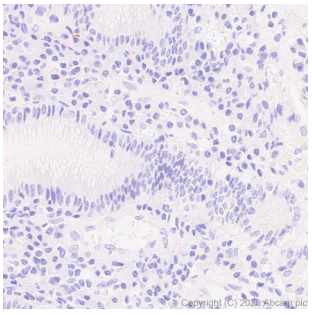
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 µg/mL) dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

PDGFR alpha (mutated D842V) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PDGFR alpha (mutated D842V) antibody

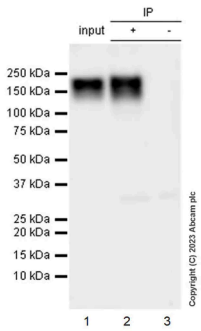
Immunohistochemical analysis of paraffin-embedded 293T (human embryonic kidney epithelial cell) transfected with (A & D) human PDGFRA (D842V) expression vector containing a His tag; (B & E) human wild-type PDGFRA expression vector containing a His tag; (C & F) empty vector containing a His tag. A-C: whole cell pellet labelling of human wild-type and mutated PDGFRA with ab203491 at 1/2000 dilution (0.28 µg/ml). D-F: whole cell pellet labelling of human PDGFRA (D842V) with ab313771 at 1/4000 dilution (0.13 µg/ml). Sections were incubated with ab203491or ab313771 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument counterstained with Hematoxylin This antibody recognizes human PDGFR (D842V) but not human wild-type PDGFRA. Positive staining on 293T overexpressing human PDGFR (D842V) (image D). No staining on 293T overexpressing human wild-type PDGFRA (image E) or the empty vector control (image F). Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

PDGFR alpha (mutated D842V) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human stomach using rabbit Anti-PDGFR alpha (mutated D842V) antibody

Immunohistochemical analysis of paraffin-embedded Human stomach tissue labeling PDGFR alpha (mutated D842V) with ab313771 at 1/4000 (0.13 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: No staining was observed in all normal tissues tested. The section was incubated with ab313771 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunoprecipitation - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

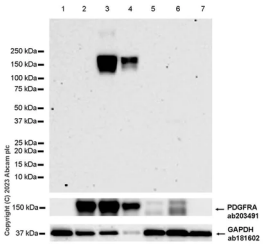
PDGFRA (D842V) was immunoprecipitated from 0.35 mg of 293T (human embryonic kidney epithelial cell) transfected with a human PDGFRA (D842V) expression vector containing a His tag using ab313771 at 1/30 dilution (2µg in 0.35mg whole cell lysate). Western blot was performed on the immunoprecipitate using ab313771 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP)(ab131366) was used at 1/5000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730). Lanes 1-3: 293T (human embryonic kidney epithelial cell) transfected with a human PDGFRA (D842V) expression vector containing a His tag Lane 1: whole cell lysate at 2µg Lane 2: IP with ab313771 Lane 3: IP with Isotype control (ab172730) Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 24 seconds
All lanes:
Immunoprecipitation - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771) at 1/30 dilution

All lanes:
293T cells transfected with a human PDGFRA (D842V) expression vector containing a His-tag whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 24s



Western blot - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771)

PDGFR alpha (mutated D842V) Western blot staining using rabbit Anti-PDGFR alpha (mutated D842V) antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST This antibody recognizes human PDGFR (D842V) but not human wild-type PDGFRA. In western blot, anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution and anti-PDGFRA antibody (ab203491) staining at 1/1000 dilution. A-172 cells are negative for wild-type PDGFRA (PMID:8425771).
All lanes:
Western blot - Anti-PDGFR alpha (mutated D842V) antibody [EPR26304-280] (ab313771) at 1/1000 dilution

Lane 1:
293T cells transfected with an empty vector containing a His-tag, whole cell lysate at 20 µg

Lane 2:
293T cells transfected with a human wild-type PDGFRA expression vector containing a His-tag, whole cell lysate at 2 µg

Lane 3:
293T cells transfected with a human PDGFRA (D842V) expression vector containing a His-tag, whole cell lysate at 2 µg

Lane 4:
293T cells transfected with a human PDGFRA (D842V) expression vector containing a His-tag, whole cell lysate at 0.4 µg

Lane 5:

MG-63 (human osteosarcoma fibroblast) whole cell lysate at 20 µg

Lane 6:
A-204 (human muscle rhabdomyosarcoma cell) whole cell lysate at 20 µg

Lane 7:
A-172 (human brain glioblastoma) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 160 kDa

Exposure time: 180s

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