abcam

ab248689

Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR5480
Purification technique	Affinity purification Protein A
Specificity	Mouse and rat species are recommended based on WB result. We do not guarantee IHC-P for mouse and rat.
Concentration	1.032 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

I-ELISA

Tested

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

Expected

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

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Not recommended

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

Flow Cyt (Intra)

Tested

Species	Rat, Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.

Notes	-

Not recommended

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

IHC-P

Tested

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

Not recommended

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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

Target data

See full target information PDGFRA

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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab248689 is the carrier-free version of ab134123.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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.

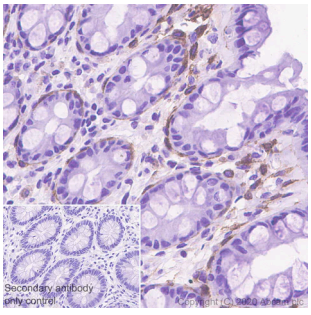
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

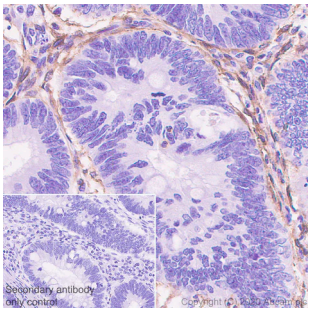
PDGFR alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PDGFR alpha antibody

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling PDGFR alpha with ab134123 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on stromal cells in human colon (PMID: 23429582). The section was incubated with ab134123 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

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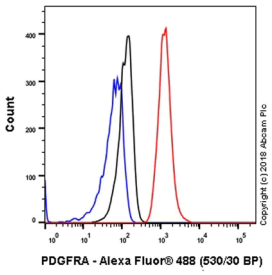
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

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

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human colonic carcinoma tissue labeling PDGFR alpha with ab134123 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on stromal cells in human colonic carcinoma. The section was incubated with ab134123 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 Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

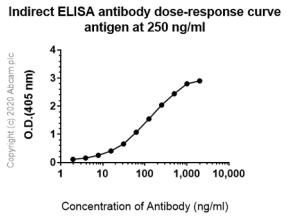
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

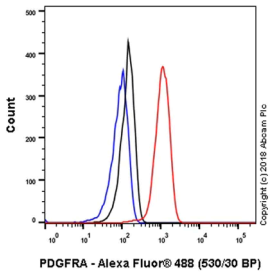
PDGFR alpha Flow Cytometry (Intracellular) staining using rabbit Anti-PDGFR alpha antibody

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of SH-SY5Y (Human neuroblastoma epithelial cell) cells labelling PDGFR alpha with ab134123 at 1/20 dilution (14.65 µg/ml) (Red). Cells were fixed with 4% paraformaldehyde . Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) (Black). Unlabeled control - Unlabelled cells (Blue).



Indirect ELISA - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

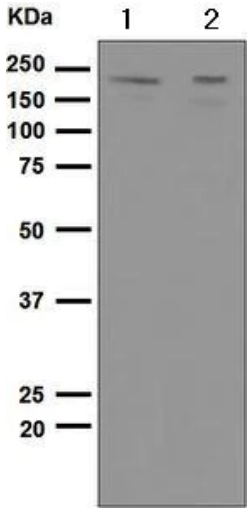
This data was developed using ab134123, the same antibody clone in a different buffer formulation.
ELISA analysis of Human PDGFR alpha recombinant protein at 250 ng/mL with ab134123. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1/2500 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

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

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of L6 (Rat skeletal muscle myoblast) cells labelling PDGFR alpha with ab134123 at 1/20 dilution (14.65 µg/ml) (Red). Cells were fixed with 4% paraformaldehyde . Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) (Black). Unlabeled control - Unlabelled cells (Blue).



Western blot - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

PDGFR alpha Western blot staining using rabbit Anti-PDGFR alpha antibody

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PDGFR alpha antibody [EPR5480] (ab134123) at 1/1000 dilution

Lane 1:
SH-SY5Y (human neuroblastoma cell line from bone marrow) cell lysate at 10 µg

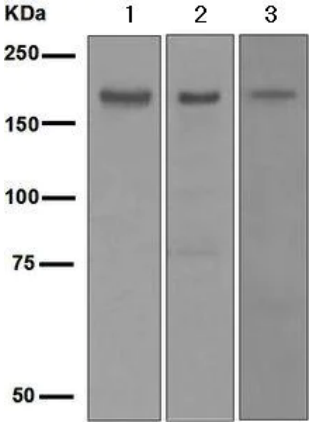
Lane 2:
C2C12 (mouse myoblast cell line) cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP conjugated antibody at 1/2000 dilution

Predicted band size: 122 kDa

Observed band size: 190 kDa



Western blot - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

PDGFR alpha Western blot staining using rabbit Anti-PDGFR alpha antibody

This data was developed using ab134123, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PDGFR alpha antibody [EPR5480] (ab134123) at 1/1000 dilution

Lane 1:
Human skeletal muscle lysate at 10 µg

Lane 2:
Human spleen lysate at 10 µg

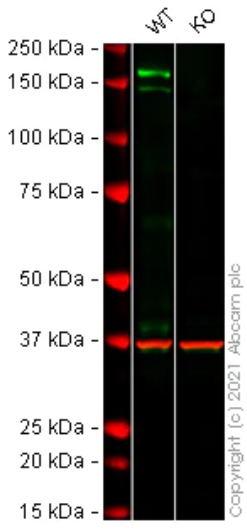
Lane 3:
Human fetal brain lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP conjugated antibody at 1/2000 dilution

Predicted band size: 122 kDa

Observed band size: 190 kDa



Western blot - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

This data was developed using the same antibody clone in a different buffer formulation (ab134123).
Lanes 1 - 2: Merged signal (red and green). Green - ab134123 observed at 180 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.

ab134123 was shown to react with PDGFR alpha in wild-type SH-SY5Y cells in Western blot with loss of signal observed in PDGFRA knockout sample. Wild-type SH-SY5Y and PDGFRA knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab134123 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-PDGFR alpha antibody [EPR5480] (ab134123) at 1/1000 dilution

Lane 1:
Wild-type SH-SY5Y cell lysate at 40 µg

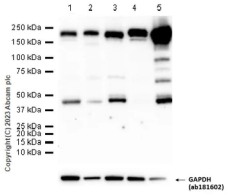
Lane 2:
PDGFRA knockout SH-SY5Y cell lysate at 40 µg

Lane 2:
Western blot - Human PDGFRA knockout SH-SY5Y cell line (ab275335)

Performed under reducing conditions.

Predicted band size: 122 kDa

Observed band size: 180 kDa



Western blot - Anti-PDGFR alpha antibody [EPR5480] - BSA and Azide free (ab248689)

This data was developed using the same antibody clone in a different buffer formulation (ab134123). Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PDGFR alpha antibody [EPR5480] (ab134123) at 1/1000 dilution

Lane 1:
Rat heart tissue lysate at 20 µg

Lane 2:
Rat lung tissue lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Mouse heart tissue lysate at 20 µg

Lane 5:
Mouse lung tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 122 kDa

Observed band size: 150 kDa

Exposure time: 80s

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