abcam

ab69506

Anti-PDGFR beta antibody [42G12]

Anti-PDGFR beta antibody [42G12] (ab69506) is a mouse monoclonal antibody detecting PDGFR beta in **Western Blot, Flow Cytometry, IHC-P, ELISA**. Suitable for **Human, Mouse**.

- KO validated for confirmed specificity
- Over 40 publications
- Trusted since 2008

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human PDGFRB. Database link P09619
Clone number	42G12
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	When staining mouse tissue with a mouse monoclonal antibody, a Mouse-on-Mouse (MOM) staining protocol is recommended to help reduce background staining caused by endogenous mouse IgG and Fc receptors. When conducting experiments using secondary antibodies conjugated with fluorescent labels, it is recommended to add 1% BSA and a final concentration of 0.3M glycine to the blocking solution to quench the autofluorescence induced by aldehyde groups. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

Not recommended

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

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

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

I-ELISA

Tested

Species	Recombinant full length protein - Human
Dilution info	1-1000 ng/mL
Notes	-

Expected

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

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Not recommended

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

Target data

See full target information PDGFRB

Function	Tyrosine-protein kinase that acts as a cell-surface receptor for homodimeric PDGFB and PDGFD and for heterodimers formed by PDGFA and PDGFB, and plays an essential role in the regulation of embryonic development, cell proliferation, survival, differentiation, chemotaxis and migration. Plays an essential role in blood vessel development by promoting proliferation, migration and recruitment of pericytes and smooth muscle cells to endothelial cells. Plays a role in the migration of vascular smooth muscle cells and the formation of neointima at vascular injury sites. Required for normal development of the cardiovascular system. Required for normal recruitment of pericytes (mesangial cells) in the kidney glomerulus, and for normal formation of a branched network of capillaries in kidney glomeruli. Promotes rearrangement of the actin cytoskeleton and the formation of membrane ruffles. Binding of its cognate ligands - homodimeric PDGFB, heterodimers formed by PDGFA and PDGFB or homodimeric PDGFD -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 PLCG1, PIK3R1, PTPN11, RASA1/GAP, CBL, SHC1 and NCK1. 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. Phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, leads to the activation of the AKT1 signaling pathway. Phosphorylation of SHC1, or of the C-terminus of PTPN11, creates a binding site for GRB2, resulting in the activation of HRAS, RAF1 and down-stream MAP kinases, including MAPK1/ERK2 and/or MAPK3/ERK1. Promotes phosphorylation and activation of SRC family kinases. Promotes phosphorylation of PDCD6IP/ALIX and STAM. 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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 22nd May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Product Specifications
Anti-PDGFR beta antibody [42G12] (ab69506) is a mouse monoclonal antibody and is validated for use in Flow Cyt, I-

ELISA, IHC-P, WB in human, mouse samples.
Anti-PDGFR beta antibody [42G12] (ab69506) specifically detects PDGFR beta (UniProt ID: P09619; Molecular weight: 121kDa) and is sold in 100 µg selling sizes.

Quality and Validation
Abcam's high quality validation processes ensure Anti-PDGFR beta antibody [42G12] (ab69506) has high sensitivity and specificity.
The specificity of Anti-PDGFR beta antibody [42G12] (ab69506) has been confirmed by testing in knockout samples.
Anti-PDGFR beta antibody [42G12] (ab69506) has been cited over 44 times in peer reviewed journals and is trusted by the scientific community.
Anti-PDGFR beta antibody [42G12] (ab69506) has 4 independent reviews from customers.

Related Products
Conjugation-ready, carrier free format available for antibody clone 42G12 - ab202760.

Supplementary info

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

Activity summary	PDGFR beta also known as PDGFR-b or PDGFRB is a cell surface tyrosine kinase receptor with a molecular mass of about 180 kDa. It binds the PDGF (platelet-derived growth factor) family of ligands. PDGFR beta is commonly found in various tissues including blood vessels and connective tissues and is highly expressed in cells like pericytes and fibroblasts. The receptor plays a critical role in cell signaling mechanisms involving proliferation chemotaxis and survival.
Biological function summary	The receptor plays an essential role in the regulation of cell growth and development. PDGFR beta undergoes dimerization and autophosphorylation upon ligand binding initiating a series of downstream signaling cascades. This receptor is often part of a complex with other receptor proteins promoting interactions necessary for signal propagation. Its main biological functions include mediating cellular responses to environmental signals that contribute to tissue repair and angiogenesis.
Pathways	PDGFR beta is an important player within the PI3K-Akt and MAPK signaling pathways. It works alongside proteins such as PI3K and Ras to regulate cellular responses related to growth and survival. These pathways facilitate cross-talk with other cellular processes influencing various cellular outcomes. This receptor's activity regulates critical physiological functions by providing signals that maintain cellular homeostasis under various physiological conditions.
Associated diseases and disorders	PDGFR beta has significant implications in the progression of cancer and fibrotic diseases. Its overexpression or mutation can lead to anomalous signaling that contributes to tumorigenesis particularly in connective tissue tumors known as sarcomas. Additionally PDGFR beta's role in promoting fibroblast activity makes it relevant in fibrotic diseases such as pulmonary fibrosis. Abnormal activation of PDGFR beta can interact with related proteins like VEGF receptors enhancing pathogenic responses and contributing to disease severity.

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.

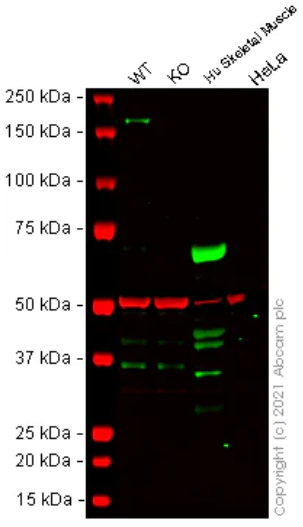
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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



Western blot - Anti-PDGFR beta antibody [42G12] (ab69506)

Lanes 1 - 4: Merged signal (red and green). Green - ab69506 observed at 170 kDa. Red - loading control ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) observed at 55 kDa.
ab69506 was shown to react with PDGFR beta in wild-type SH-SY5Y cells in Western blot with loss of signal observed in PDGFRB knockout cell line ab273749 (knockout cell lysate ab275523). Wild-type SH-SY5Y and PDGFRB knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab69506 and ab52866 (Rabbit anti-alpha Tubulin antibody [EP1332Y]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (ab216772) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed (ab216777) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-PDGFR beta antibody [42G12] (ab69506) at 1/1000 dilution

Lane 1:
Wild-type SH-SY5Y cell lysate at 30 µg

Lane 2:
PDGFRB knockout SH-SY5Y cell lysate at 30 µg

Lane 2:

Western blot - Human PDGFRB knockout SH-SY5Y cell line (ab273749)

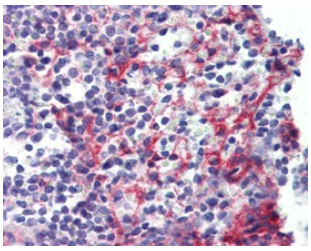
Lane 3:
Human Skeletal Muscle tissue lysate at 30 µg

Lane 4:
HeLa cell lysate at 30 µg

Performed under reducing conditions.

Predicted band size: 123 kDa

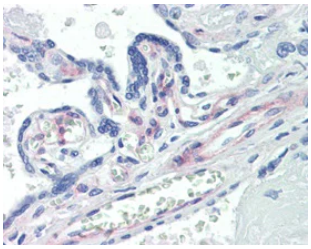
Observed band size: 170 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR beta antibody [42G12] (ab69506)

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

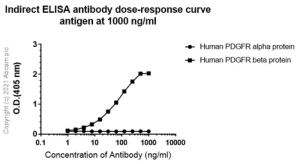
Immunohistochemistry analysis of human spleen tissue labeling PDGFR beta [42G12] with ab69506 at 20µg/ml.
This image was generated using the ascites version of the product.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PDGFR beta antibody [42G12] (ab69506)

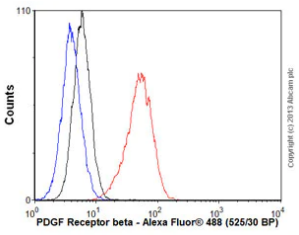
PDGFR beta Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PDGFR beta antibody

Immunohistochemistry analysis of human placenta tissue labeling PDGFR beta [42G12] with ab69506 at at 20µg/ml.
This image was generated using the ascites version of the product.



ELISA - Anti-PDGFR beta antibody [42G12] (ab69506)

ELISA using ab69506 at varying antibody concentrations (1000-0ng/ml). The antigens used were Human PDGFR alpha protein, Human PDGFR beta protein at a concentration of 1000 ng/ml. Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Mouse IgG(H+L) was used as the secondary antibody with a dilution of 1:1000. The substrate solution used was p-nitrophenyl phosphate(PNPP)



Flow Cytometry - Anti-PDGFR beta antibody [42G12] (ab69506)

PDGFR beta Flow Cytometry staining using mouse Anti-PDGFR beta antibody

Overlay histogram showing NIH 3T3 cells stained with ab69506 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab69506, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1]

(ab91353, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This image was generated using the ascites version of the product.

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