abcam

ab248657

Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] - BSA and Azide free

Recombinant | RabMAb

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	EPR2476
Purification technique	Affinity purification Protein A

Reactivity data

ICC/IF

Not recommended

Species	Mouse, Synthetic peptide
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Synthetic peptide
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Target data

See full target information PDGFRB pY1021

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	+4°C
Storage information	Do Not Freeze

Notes

ab248657 is the carrier-free version of ab134048.

Species reactivity

Human, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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 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

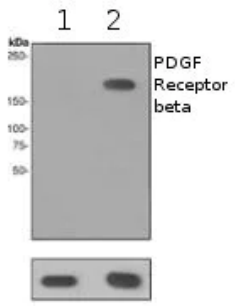
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images



Western blot - Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] - BSA and Azide free (ab248657)

PDGFR beta (phospho Y1021) Western blot staining using rabbit Anti-PDGFR beta (phospho Y1021) antibody

This data was developed using ab134048, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] (ab134048) at 1/50000 dilution

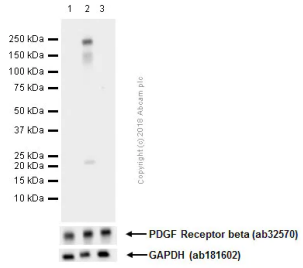
Lane 1:
NIH/3T3 untreated at 10 µg

Lane 2:
NIH/3T3 treated with Pervanadate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 123 kDa



Western blot - Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] - BSA and Azide free (ab248657)

PDGFR beta (phospho Y1021) Western blot staining using rabbit Anti-PDGFR beta (phospho Y1021) antibody

This data was developed using ab134048, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] (ab134048) at 1/5000 dilution

Lane 1:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Lane 2:
NIH/3T3 treated with 1mM pervanadate for 30 minutes whole cell lysate at 10 µg

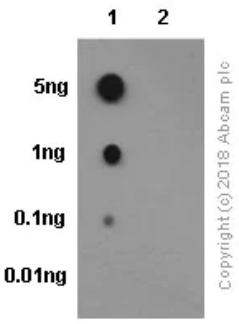
Lane 3:
NIH/3T3 treated with 1mM pervanadate for 30 minutes whole cell lysate. Then the membrane was incubated with alkaline phosphatase at 10 µg

Secondary

All lanes:

Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 123 kDa



Dot Blot - Anti-PDGFR beta (phospho Y1021) antibody [EPR2476] - BSA and Azide free (ab248657)

PDGFR beta (phospho Y1021) Dot Blot staining using rabbit Anti-PDGFR beta (phospho Y1021) antibody

This data was developed using ab134048, the same antibody clone in a different buffer formulation.
Dot blot analysis of PDGFR beta (phospho Y1021) phospho peptide (Lane 1) and PDGFR beta non-phospho peptide (Lane 2) labeling PDGFR beta (phospho Y1021) phospho peptide with ab134048 at a dilution of 1/1000 dilution (0.54ug/ml). A Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) was used as the secondary antibody at a dilution of 1/20,000 dilution.

Blocking buffer: 5% NFDM/TBST. Dilution buffer: 5% NFDM /TBST .

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