abcam

ab99896

PE Anti-PDGFR beta antibody [18A2]

Anti-PDGFR beta antibody [18A2] conjugated to PE - suitable for flow cytometry, and reacts with human samples. Clone [18A2] is a mouse monoclonal antibody cited in 30 publications.

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Key facts

Isotype	IgG1
Host species	Mouse
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Clone number	18A2
Purification technique	Size-exclusion chromatography

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	20 µL for 10^6 Cells
Notes	ab91357 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

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	+4°C
Storage information	Do Not Freeze

Notes

The purified antibody is conjugated with R-Phycoerythrin (PE) under optimum conditions. The conjugate is adjusted for direct use.

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

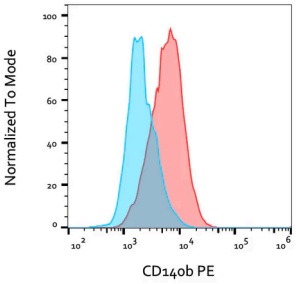
We do not recommend this combination. It is not covered by our product promise.

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1 product image



Flow Cytometry - PE Anti-PDGFR beta antibody [18A2] (ab99896)

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

Separation of PDGF-RB stable transfectants (red) from 3T3 cells (blue) in flow cytometry analysis (surface staining) stained using anti-human CD140b (18A2) PE antibody (20 µl reagent per milion cells in 100 µl of cell suspension).

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