10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Phospho-PDGFR-Y579 Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3211a

Product Information

Application	WB, IHC-P, E
Primary Accession	P09619
Other Accession	Q05030, P05622, P26619, P20786, P26618, P16234, Q9DE49, Q9PUF6
Reactivity	Human
Predicted	Chicken, Zebrafish, Mouse, Rat, Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB5692
Calculated MW	123968

Additional Information

Gene ID	5159
Other Names	Platelet-derived growth factor receptor beta, PDGF-R-beta, PDGFR-beta, Beta platelet-derived growth factor receptor, Beta-type platelet-derived growth factor receptor, CD140 antigen-like family member B, Platelet-derived growth factor receptor 1, PDGFR-1, CD140b, PDGFRB, PDGFR, PDGFR1
Target/Specificity	This Phospho-PDGFR-Y579 antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding Y579 of human PDGFR.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Phospho-PDGFR-Y579 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PDGFRB
Synonyms	PDGFR, PDGFR1

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.
Cellular Location	Cell membrane; Single-pass type I membrane protein. Cytoplasmic vesicle. Lysosome lumen. Note=After ligand binding, the autophosphorylated receptor is ubiquitinated and internalized, leading to its degradation

Background

PDGFR is a cell surface tyrosine kinase receptor for members of the platelet-derived growth factor family. These growth factors are mitogens for cells of mesenchymal origin. The identity of the growth factor bound to a receptor monomer determines whether the functional receptor is a homodimer or a heterodimer, composed of both platelet-derived growth factor receptor alpha and beta polypeptides. The gene for this protein is flanked on chromosome 5 by the genes for granulocyte-macrophage colony-stimulating factor and macrophage-colony stimulating factor receptor; all three genes may be implicated in the 5-q syndrome. A translocation between chromosomes 5 and 12, that fuses this gene to that of the translocation, ETS, leukemia gene, results in chronic myelomonocytic leukemia.

References

Chen, J., et al., Blood 104(2):535-542 (2004).
Chiara, F., et al., J. Biol. Chem. 279(19):19732-19738 (2004).
Tamborini, E., et al., Clin. Cancer Res. 10(3):938-943 (2004).
Baudhuin, L.M., et al., FASEB J. 18(2):341-343 (2004).
Al-Ali, H.K., et al., Hematol. J. 5(1):55-60 (2004).

Citations

- An LXR agonist promotes glioblastoma cell death through inhibition of an EGFR/AKT/SREBP-1/LDLR-dependent

pathway.

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