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PDGFRβ Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1298a

Product Information

Application	WB, E
Primary Accession	P09619
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Clone Names	1A2
Isotype	IgG1
Calculated MW	123968
Description	Platelet-derived growth factor receptor, beta polypeptide, also known as PDGFRB, PDGFRβ or CD140B. It is a cell surface tyrosine kinase receptor for members of the platelet-derived growth factor family. This family exist as several disulphide-bonded, dimeric isoforms (PDGF AA, PDGF AB, PDGF BB, PDGF CC and PDGF DD) that bind in a specific pattern to two closely related receptor tyrosine kinases, PDGF receptor α (PDGFRα) and PDGF receptor β (PDGFRβ). These growth factors are mitogens for cells of mesenchymal origin. PDGFRB 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, ETV6, leukemia gene, results in chronic myeloproliferative disorder with eosinophilia.
Immunogen	Purified recombinant fragment of human PDGFRβ expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	5159
Other Names	Platelet-derived growth factor receptor beta, PDGF-R-beta, PDGFR-beta, 2.7.10.1, 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
Dilution	WB~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PDGFRβ Antibody is for research use only and not for use in diagnostic or

therapeutic procedures.

Protein Information

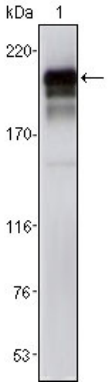
Name	PDGFRB
Synonyms	PDGFR, PDGFR1
Function	Tyrosine-protein kinase that acts as a cell-surface receptor for homodimeric PDGFB and PDGFD and for heterodimers formed by PDGFA and PDGFB, and plays an essential role in the regulation of embryonic development, cell proliferation, survival, differentiation, 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

References

1. Biochem Biophys Res Commun. 1997 Jun 27;235(3):455-60. 2. Hum Pathol. 2005 Mar;36(3):242-9. 3. J Virol. 2007 May;81(10):5112-20.

Images

Figure 1: Western blot analysis using PDGFRβ mouse mAb against NIH/3T3 cell lysate (1).



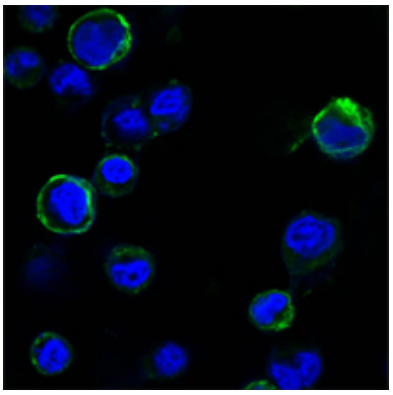


Figure 1: Confocal immunofluorescence analysis of HEK293 cells trasfected with extracellular ROR1 (aa30-406)-hIgGFc using ROR1 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

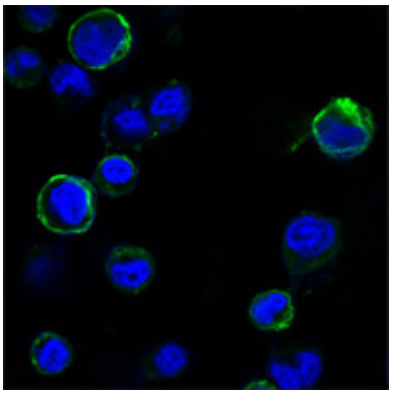


Figure 2: Confocal immunofluorescence analysis of HEK293 cells trasfected with extracellular ROR1 (aa30-406)-hIgGFc using ROR1 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

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