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PDGFRB Recombinant Monoclonal Antibody

Product Code	CSB-RA213932A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P09619
Immunogen	A synthesized peptide derived from human PDGF Receptor beta
Species Reactivity	Human
Tested Applications	ELISA, IHC; Recommended dilution: IHC:1:50-1:200
Relevance	Tyrosine-protein kinase that acts as 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 downstream 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.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG

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Clonality	Monoclonal		
Product Type	Recombinant Antibody		
Immunogen Species	Homo sapiens (Human)		
Research Area	Cancer; Cardiovascular; Signal transduction		
Gene Names	PDGFRB		
Clone No.	2C11		
Image	IHC image of CSB-RA213932A0HU diluted at 1:100 and staining in paraffin-embedded human		



placenta tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.

Description

The PDGFRB recombinant monoclonal antibody is generated through protein and DNA recombinant technologies. The process starts with the immunization of mice with a synthesized peptide obtained from human PDGFRB protein. The spleen cells are harvested from the immunized mice after a specific period under sterile conditions, and their total RNA is extracted. cDNA synthesized by RNA reverse transcription serves as the template for PCR amplification of the PDGFRB antibody gene. Subsequently, the gene is inserted into a vector and then transfected into host cells for cultivation. The PDGFRB recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography and verified for its accuracy. It is highly reliable and applicable in ELISA and IHC experiments for detecting human PDGFRB protein.

The PDGFRB protein is a receptor tyrosine kinase that is involved in various cellular processes, including cell proliferation, differentiation, and survival. When PDGFRB is activated by binding to its ligand PDGF, it undergoes dimerization, autophosphorylation, and activation of downstream signaling pathways, such as the PI3K/AKT pathway, JAK/STAT pathway, and RAS/MAPK pathway, which regulate cell differentiation, proliferation, and survival. Dysregulation of PDGFRB signaling has been implicated in the pathogenesis of several diseases, including cancer, fibrosis, and atherosclerosis.