

## Anti-PDGFR- $\beta$ antibody

Cat# NB-22-5001

### Description

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Rabbit Polyclonal to PDGFR- $\beta$

### Product Information

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<b>Code</b>	NB-22-5001
<b>Host</b>	Rabbit
<b>Reactivity</b>	Human, Mouse, Rat
<b>Applications</b>	WB, IHC, IF, ELISA
<b>Immunogen</b>	Synthesized peptide derived from human PDGFR- $\beta$ around the non-phosphorylation site of Y1021
<b>Immunogen Region</b>	960-1040aa
<b>Gene ID</b>	5159 (Human); 18596 (Mouse); 24629 (Rat)
<b>Dilution range</b>	WB 1:500-1:2000; IHC 1:100-1:300; IF 1:200-1:1000; ELISA 1:5000;
<b>Specificity</b>	PDGFR- $\beta$ Polyclonal Antibody detects endogenous levels of PDGFR- $\beta$ protein
<b>Purification</b>	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen
<b>Note</b>	For research use only
<b>Protein Name</b>	Platelet-derived growth factor receptor beta
<b>Clonality</b>	Polyclonal
<b>Conjugation</b>	Unconjugated
<b>Isotype</b>	IgG

<b>Formulation</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide
<b>Molecular Weight</b>	123 kDa
<b>Concentration</b>	1 mg/ml
<b>Storage Instruction</b>	Store at -20°C. Avoid repeated freeze/thaw cycles

## Target

**Database Links** Human UniProt/Swiss-Prot: [P09619](#);  
Mouse UniPort/Swiss-Prot: [P05622](#);  
Rat UniProt/Swiss-Port: [Q05030](#);  
Human Entrez Gene: [5159](#);

**Alternative names** PDGFRB / platelet derived growth factor receptor beta / A306\_14538 antibody, Anapl\_09330 antibody, AS27\_12015 antibody, AS28\_08141 antibody, beta platelet-derived growth factor receptor antibody, Beta-type platelet-derived growth factor receptor antibody, CB1\_000163034 antibody, CD140 antigen-like family member B antibody, CD140b antibody, D623\_10034748 antibody, H920\_06574 antibody, hypothetical protein antibody, I79\_013660 antibody, IBGC4 antibody, IMF1 antibody, JTK12 antibody, KOGS antibody, M91\_17980 antibody, M959\_08431 antibody, MDA\_GLEAN10025666 antibody, N300\_10590 antibody, N301\_12177 antibody, N302\_05239 antibody, N303\_03213 antibody, N305\_02871 antibody, N306\_11962 antibody, N307\_10123 antibody, N308\_14881 antibody, N309\_08873 antibody, N310\_00567 antibody, N311\_08148 antibody, N312\_05880 antibody, N320\_05946 antibody, N321\_02517 antibody, N322\_05112 antibody, N324\_05557 antibody, N325\_05015 antibody, N326\_10381 antibody, N327\_04637 antibody, N328\_02987 antibody, N329\_12517 antibody, N330\_03168 antibody, N331\_03122 antibody, N332\_00934 antibody, N333\_13057 antibody, N334\_04470 antibody, N335\_04511 antibody, N336\_11647 antibody, N339\_03569 antibody, N340\_00791 antibody, N341\_10438 antibody, PAL\_GLEAN10018752 antibody, PANDA\_006596 antibody, PDGF-beta antibody, PDGF beta chain antibody, Pdgfr antibody, PDGFR1 antibody, PDGFR-1 antibody, pdgfrba antibody, PDGFRbeta antibody, PDGF-R-beta antibody, PDGFR-beta antibody, PENTT antibody, PGF-Rb antibody, platelet-derived growth factor receptor 1 antibody, Platelet-derived growth factor receptor beta antibody, Platelet-derived growth factor receptor, beta antibody, platelet-derived growth factor receptor beta 2 antibody, platelet-derived growth factor receptor beta a antibody, platelet derived growth factor receptor, beta polypeptide antibody, platelet-derived growth factor receptor, beta polypeptide antibody, platelet-derived growth factor receptor beta variant 1 antibody, protein tyrosin kinase antibody, TREES\_T100010698 antibody, UY3\_18240 antibody, Y1Q\_019421 antibody, Y956\_02342 antibody, Z169\_06186 antibody

## Function

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<sup>2+</sup> 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. / ATP + a [protein]-L-tyrosine = ADP + a [protein]-L-tyrosine phosphate. / Present in an inactive conformation in the absence of bound ligand. Binding of PDGFB and/or PDGFD leads to dimerization and activation by autophosphorylation on tyrosine residues. Inhibited by imatinib

## Sequence and Domain Family

Belongs to the protein kinase superfamily. Tyr protein kinase family. CSF-1/PDGF receptor subfamily. / Contains 5 Ig-like C2-type (immunoglobulin-like) domains. / Contains 1 protein kinase domain

## Post-translational Modifications

Autophosphorylated on tyrosine residues upon ligand binding. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit. Phosphorylation at Tyr-579, and to a lesser degree, at Tyr-581, is important for interaction with SRC family kinases. Phosphorylation at Tyr-740 and Tyr-751 is important for interaction with PIK3R1. Phosphorylation at Tyr-751 is important for interaction with NCK1. Phosphorylation at Tyr-771 and Tyr-857 is important for interaction with RASA1/GAP. Phosphorylation at Tyr-857 is important for efficient phosphorylation of PLCG1 and PTPN11, resulting in increased

phosphorylation of AKT1, MAPK1/ERK2 and/or MAPK3/ERK1, PDCD6IP/ALIX and STAM, and in increased cell proliferation. Phosphorylation at Tyr-1009 is important for interaction with PTPN11. Phosphorylation at Tyr-1009 and Tyr-1021 is important for interaction with PLCG1. Phosphorylation at Tyr-1021 is important for interaction with CBL; PLCG1 and CBL compete for the same binding site. Dephosphorylated by PTPRJ at Tyr-751, Tyr-857, Tyr-1009 and Tyr-1021. Dephosphorylated by PTPN2 at Tyr-579 and Tyr-1021. / N-glycosylated. / Ubiquitinated. After autophosphorylation, the receptor is polyubiquitinated, leading to its degradation

## Cellular Localization

Cell membrane; Single-pass type I membrane protein / Cytoplasmic vesicle / Lysosome lumen

*For reference only*

*Not for Diagnostic or Therapeutic Use.*