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PDGFRA Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7666d

Product Information

Application	WB, IHC-P, E
Primary Accession	P16234
Other Accession	P26619, P20786, P26618, Q9PUF6, NP_006197
Reactivity	Human, Mouse, Rat
Predicted	Mouse, Rat, Chicken, Xenopus, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB11101
Calculated MW	122670
Antigen Region	698-727

Additional Information

Gene ID	5156
Other Names	Platelet-derived growth factor receptor alpha, PDGF-R-alpha, PDGFR-alpha, Alpha platelet-derived growth factor receptor, Alpha-type platelet-derived growth factor receptor, CD140 antigen-like family member A, CD140a antigen, Platelet-derived growth factor alpha receptor, Platelet-derived growth factor receptor 2, PDGFR-2, CD140a, PDGFRA, PDGFR2, RHEPDGFRA
Target/Specificity	This PDGFRA antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 698-727 amino acids from human PDGFRA.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. 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	PDGFRA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PDGFRA

Synonyms	PDGFR2, RHEPDGFRA
Function	Tyrosine-protein kinase that acts as a cell-surface receptor for PDGFA, PDGFB and PDGFC and plays an essential role in the regulation of embryonic development, cell proliferation, survival and chemotaxis. Depending on the context, promotes or inhibits cell proliferation and cell migration. Plays an important role in the differentiation of bone marrow-derived mesenchymal stem cells. Required for normal skeleton development and cephalic closure during embryonic development. Required for normal development of the mucosa lining the gastrointestinal tract, and for recruitment of mesenchymal cells and normal development of intestinal villi. Plays a role in cell migration and chemotaxis in wound healing. Plays a role in platelet activation, secretion of agonists from platelet granules, and in thrombin-induced platelet aggregation. Binding of its cognate ligands - homodimeric PDGFA, homodimeric PDGFB, heterodimers formed by PDGFA and PDGFB or homodimeric PDGFC -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 PIK3R1, PLCG1, and PTPN11. 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. Phosphorylates PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, and thereby mediates activation of the AKT1 signaling pathway. Mediates activation of HRAS and of the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Promotes activation of STAT family members STAT1, STAT3 and STAT5A and/or STAT5B. 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. Cell projection, cilium {ECO:0000250|UniProtKB:P26618}. Golgi apparatus {ECO:0000250|UniProtKB:P26618}
Tissue Location	Detected in platelets (at protein level). Widely expressed. Detected in brain, fibroblasts, smooth muscle, heart, and embryo. Expressed in primary and metastatic colon tumors and in normal colon tissue.

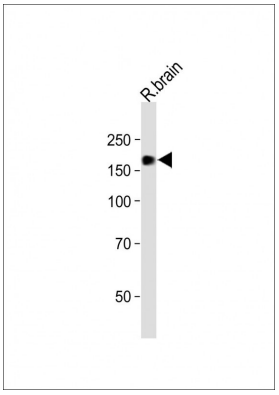
Background

PDGFRA 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. Studies in knockout mice, where homozygosity is lethal, indicate that the alpha form of the platelet-derived growth factor receptor is particularly important for kidney development since mice heterozygous for the receptor exhibit defective kidney phenotypes.

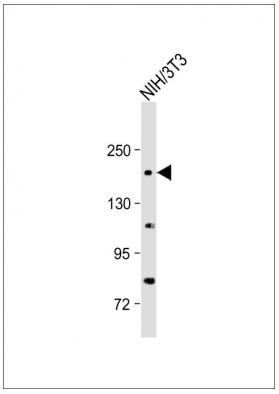
References

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Hiwatari, M., et al., Leukemia 19(3):476-477 (2005).
Debiec-Rychter, M., et al., Gastroenterology 128(2):270-279 (2005).
Sakurai, S., et al., Hum. Pathol. 35(10):1223-1230 (2004).
Subramanian, S., et al., Oncogene 23(47):7780-7790 (2004).

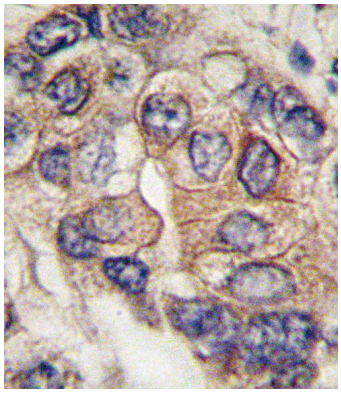
Images



All lanes : Anti-PDGFRA Antibody (Y720) at 1:2000 dilution Lane 1: rat brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 180kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Anti-PDGFRA Antibody (Y720) at 1:2000 dilution + NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 123 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with PDGFRA Antibody (Y720) (Cat.#AP7666d), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- Down-regulation of miR-218-2 and its host gene SLIT3 cooperate to promote invasion and progression of thyroid cancer.
- Glycosylation at Asn254 Is Required for the Activation of the PDGF-C Protein

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