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

Phospho-PDGFRA(Y1018) Antibody Blocking peptide

Synthetic peptide
Catalog # BP3331a

Specification

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - Product Information

Primary Accession P16234

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - 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
The synthetic peptide sequence used to generate the antibody AP3331a was selected from the region of human Phospho-PDGFRA-Y1018. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - 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.

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - Images

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - 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.

Phospho-PDGFRA(Y1018) Antibody Blocking peptide - References

Cools, J., et al., Blood 103(7):2802-2805 (2004).Afink, G., et al., Biochem. Biophys. Res. Commun. 315(2):313-318 (2004).Zhu, H., et al., Mol. Genet. Metab. 81(2):127-132 (2004).Al-Ali, H.K., et al., Hematol. J. 5(1):55-60 (2004).Heinrich, M.C., et al., Science 299(5607):708-710 (2003).