

PDPK1 Antibody
Mouse Monoclonal Antibody (Mab)
Catalog # AM1954b

Specification

PDPK1 Antibody - Product Information

Application	WB,E
Primary Accession	O15530
Other Accession	NP_112558.2 , NP_002604.1
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgM,k
Calculated MW	63152

PDPK1 Antibody - Additional Information

Gene ID 5170

Other Names

3-phosphoinositide-dependent protein kinase 1, hPDK1, PDPK1, PDK1

Target/Specificity

This PDPK1 monoclonal antibody is generated from mouse immunized with PDPK1 recombinant protein.

Dilution

WB~~1:500~1000

Format

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Euglobin precipitation followed by dialysis against PBS.

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

PDPK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

PDPK1 Antibody - Protein Information

Name PDPK1

Synonyms PDK1

Function Serine/threonine kinase which acts as a master kinase, phosphorylating and activating a subgroup of the AGC family of protein kinases (PubMed:[10226025](#), PubMed:[10480933](#),

PubMed:[10995762](#), PubMed:[12167717](#), PubMed:[14585963](#), PubMed:[14604990](#), PubMed:[16207722](#), PubMed:[16251192](#), PubMed:[17327236](#), PubMed:[17371830](#), PubMed:[18835241](#), PubMed:[9094314](#), PubMed:[9368760](#), PubMed:[9445476](#), PubMed:[9445477](#), PubMed:[9707564](#), PubMed:[9768361](#)). Its targets include: protein kinase B (PKB/AKT1, PKB/AKT2, PKB/AKT3), p70 ribosomal protein S6 kinase (RPS6KB1), p90 ribosomal protein S6 kinase (RPS6KA1, RPS6KA2 and RPS6KA3), cyclic AMP-dependent protein kinase (PRKACA), protein kinase C (PRKCD and PRKCZ), serum and glucocorticoid-inducible kinase (SGK1, SGK2 and SGK3), p21-activated kinase-1 (PAK1), TSSK3, protein kinase PKN (PKN1 and PKN2) (PubMed:[10226025](#), PubMed:[10480933](#), PubMed:[10995762](#), PubMed:[12167717](#), PubMed:[14585963](#), PubMed:[14604990](#), PubMed:[16207722](#), PubMed:[16251192](#), PubMed:[17327236](#), PubMed:[17371830](#), PubMed:[18835241](#), PubMed:[9094314](#), PubMed:[9368760](#), PubMed:[9445476](#), PubMed:[9707564](#), PubMed:[9768361](#)). Plays a central role in the transduction of signals from insulin by providing the activating phosphorylation to PKB/AKT1, thus propagating the signal to downstream targets controlling cell proliferation and survival, as well as glucose and amino acid uptake and storage (PubMed:[10226025](#), PubMed:[12167717](#), PubMed:[9094314](#)). Negatively regulates the TGF-beta-induced signaling by: modulating the association of SMAD3 and SMAD7 with TGF-beta receptor, phosphorylating SMAD2, SMAD3, SMAD4 and SMAD7, preventing the nuclear translocation of SMAD3 and SMAD4 and the translocation of SMAD7 from the nucleus to the cytoplasm in response to TGF-beta (PubMed:[17327236](#)). Activates PPARG transcriptional activity and promotes adipocyte differentiation (By similarity). Activates the NF-kappa-B pathway via phosphorylation of IKKB (PubMed:[16207722](#)). The tyrosine phosphorylated form is crucial for the regulation of focal adhesions by angiotensin II (PubMed:[14585963](#)). Controls proliferation, survival, and growth of developing pancreatic cells (By similarity). Participates in the regulation of Ca(2+) entry and Ca(2+)-activated K(+) channels of mast cells (By similarity). Essential for the motility of vascular endothelial cells (ECs) and is involved in the regulation of their chemotaxis (PubMed:[17371830](#)). Plays a critical role in cardiac homeostasis by serving as a dual effector for cell survival and beta-adrenergic response (By similarity). Plays an important role during thymocyte development by regulating the expression of key nutrient receptors on the surface of pre-T cells and mediating Notch-induced cell growth and proliferative responses (By similarity). Provides negative feedback inhibition to toll-like receptor-mediated NF-kappa-B activation in macrophages (By similarity).

Cellular Location

Cytoplasm. Nucleus. Cell membrane; Peripheral membrane protein. Cell junction, focal adhesion. Note=Tyrosine phosphorylation seems to occur only at the cell membrane. Translocates to the cell membrane following insulin stimulation by a mechanism that involves binding to GRB14 and INSR. SRC and HSP90 promote its localization to the cell membrane. Its nuclear localization is dependent on its association with PTPN6 and its phosphorylation at Ser- 396. Restricted to the nucleus in neuronal cells while in non-neuronal cells it is found in the cytoplasm. The Ser-241 phosphorylated form is distributed along the perinuclear region in neuronal cells while in non-neuronal cells it is found in both the nucleus and the cytoplasm IGF1 transiently increases phosphorylation at Ser-241 of neuronal PDK1, resulting in its translocation to other cellular compartments The tyrosine-phosphorylated form colocalizes with PTK2B in focal adhesions after angiotensin II stimulation

Tissue Location

Appears to be expressed ubiquitously. The Tyr-9 phosphorylated form is markedly increased in diseased tissue compared with normal tissue from lung, liver, colon and breast

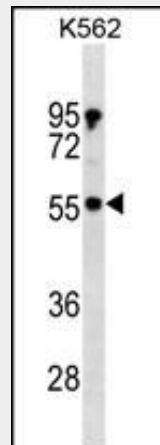
PDK1 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)

- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

PDPK1 Antibody - Images



PDPK1 Antibody (Cat. #AM1954b) western blot analysis in K562 cell line lysates (35µg/lane). This demonstrates the PDPK1 antibody detected the PDPK1 protein (arrow).

PDPK1 Antibody - Background

Phosphorylates and activates not only PKB/AKT, but also PKA, PKC-zeta, RPS6KA1 and RPS6KB1. May play a general role in signaling processes and in development (By similarity). Isoform 3 is catalytically inactive.

PDPK1 Antibody - References

Sozopoulos, E., et al. *Endocr. Pathol.* 21(2):90-100(2010)
Alberobello, A.T., et al. *J. Biol. Chem.* 285(9):6563-6572(2010)
Ericson, K., et al. *Proc. Natl. Acad. Sci. U.S.A.* 107(6):2598-2603(2010)
Sephton, C.F., et al. *Cell. Signal.* 21(11):1634-1644(2009)
Teft, W.A., et al. *BMC Immunol.* 10, 23 (2009) :