abcam

ab278597

PE Anti-PDPK1 (phospho S241) antibody [PDK1S241-F7]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human PDPK1 pS241. The exact immunogen used to generate this antibody is proprietary information. Database link O15530
Clone number	PDK1S241-F7
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information PDPK1 pS241

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). Isoform 3. Catalytically inactive.

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	PDPK1 also known as 3-phosphoinositide-dependent protein kinase-1 or PDK1 is a protein kinase with a molecular mass of approximately 63 kDa. It plays an important mechanical role in the activation of other kinases through phosphorylation on threonine or serine residues. PDPK1 is widely expressed in various tissues including heart lung pancreas and liver reflecting its significant roles in cellular signalling.
Biological function summary	PDPK1 is a master regulator of several AGC kinase family enzymes. It functions as a docking station coordinating with other proteins for activation processes. For example PDPK1 helps in activating PKB/Akt which is required for cell survival and growth. PDPK1 forms part of signaling complexes that manage processes like metabolism growth and survival.
Pathways	PDPK1 plays an essential role in the PI3K/AKT pathway which is an important signaling pathway for cellular growth and survival. This pathway begins with the activation of PI3K leading to the production of PIP3 which creates a binding site for PDPK1 at the plasma membrane where it activates PKB/Akt. Also PDPK1 interacts with NF-κB pathway components linking it to processes in immune response regulation and inflammation.

Associated diseases and disorders	PDPK1 has associations with cancer and Type 2 diabetes. Abnormal activity of PDPK1 is observed in several cancer types indicating its role in uncontrolled cell growth. In Type 2 diabetes PDPK1 influences insulin signaling disruptions and glucose metabolism. PDPK1 connects these conditions through interactions with proteins like mTOR which influences cell growth and metabolism further exemplifying its importance in disease mechanisms.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

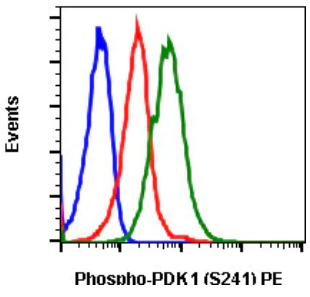
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Flow Cytometry - PE Anti-PDPK1 (phospho S241) antibody [PDK1S241-F7] (ab278597)

PDPK1 (phospho S241) Flow Cytometry staining using rabbit Anti-PDPK1 (phospho S241) antibody

Flow cytometric analysis of 293T cells unstained K252a treated cells (blue) or stained treated with K252a (red) or with pervanadate (green) using ab278597.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.