

PDPK1 (h): 293T Lysate: sc-159857

BACKGROUND

PDPK1 (3-phosphoinositide dependent protein kinase 1), also known as PDK1, PDPK2, PDPK2P or PR00461, is 556 amino acid ubiquitously expressed protein that localizes to the cell membrane, cytoplasm and nucleus. Acting as a master kinase, PDPK1 phosphorylates and activates a subgroup of the AGC family of protein kinases. PDPK1 is involved in mediating signal transduction for controlling proliferation, survival, and growth of developing pancreatic β cells, regulating Ca^{2+} uptake and Ca^{2+} -activated K^{+} channels of mast cells, regulation of chemotaxis and motility of vascular endothelial cells, cardiac homeostasis, and thymocyte development. Belonging to the protein kinase superfamily, PDPK1 contains a PH domain, which play an essential role in homodimerization, localization and nuclear import of PDPK1, and a protein kinase domain. PDPK1 exists as five alternatively spliced isoforms and is encoded by a gene located on human chromosome 16p13.3.

REFERENCES

1. Alessi, D.R., et al. 1997. 3-Phosphoinositide-dependent protein kinase-1 (PDK1): structural and functional homology with the *Drosophila* DSTPK61 kinase. *Curr. Biol.* 7: 776-789.
2. Stephens, L., et al. 1998. Protein kinase B kinases that mediate phosphatidylinositol 3,4,5-trisphosphate-dependent activation of protein kinase B. *Science* 279: 710-714.
3. Mora, A., et al. 2004. PDK1, the master regulator of AGC kinase signal transduction. *Semin. Cell Dev. Biol.* 15: 161-170.
4. Feldman, R.I., et al. 2005. Novel small molecule inhibitors of 3-phosphoinositide-dependent kinase-1. *J. Biol. Chem.* 280: 19867-19874.
5. Gao, X. and Harris, T.K. 2006. Role of the PH domain in regulating *in vitro* autophosphorylation events required for reconstitution of PDK1 catalytic activity. *Bioorg. Chem.* 34: 200-223.
6. Hashimoto, N., et al. 2006. Ablation of PDK1 in pancreatic beta cells induces diabetes as a result of loss of beta cell mass. *Nat. Genet.* 38: 589-593.
7. Primo, L., et al. 2007. Essential role of PDK1 in regulating endothelial cell migration. *J. Cell Biol.* 176: 1035-1047.
8. Yagi, M., et al. 2009. PDK1 regulates chemotaxis in human neutrophils. *J. Dent. Res.* 88: 1119-1124.
9. Uras, I.Z., et al. 2012. Ubiquitin-specific protease 4 inhibits mono-ubiquitination of the master growth factor signaling kinase PDK1. *PLoS ONE* 7: e31003.

STORAGE

Store at -20°C . Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: PDPK1 (human) mapping to 16p13.3.

PRODUCT

PDPK1 (h): 293T Lysate represents a lysate of human PDPK1 transfected 293T cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

APPLICATIONS

PDPK1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PDPK1 antibodies. Recommended use: 10-20 μl per lane.

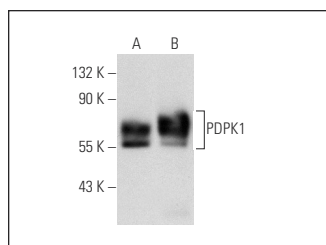
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PDPK1 (E-3): sc-17765 is recommended as a positive control antibody for Western Blot analysis of enhanced human PDPK1 expression in PDPK1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

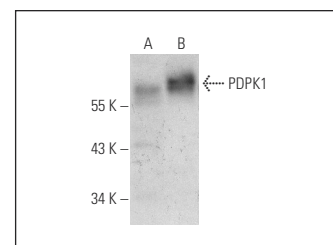
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



PDPK1 (E-3): sc-17765. Western blot analysis of PDPK1 expression in non-transfected: sc-117752 (A) and human PDPK1 transfected: sc-159857 (B) 293T whole cell lysates.



PDPK1 (A-10): sc-17766. Western blot analysis of PDPK1 expression in non-transfected: sc-117752 (A) and human PDPK1 transfected: sc-159857 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.