SANTA CRUZ BIOTECHNOLOGY, INC.

PDPK1 (E-3): sc-17765

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PDPK1 (3-phosphoinositide dependent protein kinase 1), also known as PDK1, PDPK2, PDPK2P or PRO0461, 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 beta 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.

CHROMOSOMAL LOCATION

Genetic locus: PDPK1 (human) mapping to 16p13.3; Pdpk1 (mouse) mapping to 17 A3.3.

SOURCE

PDPK1 (E-3) is a mouse monoclonal antibody raised against amino acids 229-556 of PDPK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PDPK1 (E-3) is available conjugated to agarose (sc-17765 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17765 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17765 PE), fluorescein (sc-17765 FITC), Alexa Fluor® 488 (sc-17765 AF488), Alexa Fluor® 546 (sc-17765 AF546), Alexa Fluor® 594 (sc-17765 AF594) or Alexa Fluor® 647 (sc-17765 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17765 AF680) or Alexa Fluor® 790 (sc-17765 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PDPK1 (E-3) is recommended for detection of PDPK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PDPK1 siRNA (h): sc-29448, PDPK1 siRNA (m): sc-36242, PDPK1 shRNA Plasmid (h): sc-29448-SH, PDPK1 shRNA Plasmid (m): sc-36242-SH, PDPK1 shRNA (h) Lentiviral Particles: sc-29448-V and PDPK1 shRNA (m) Lentiviral Particles: sc-36242-V.

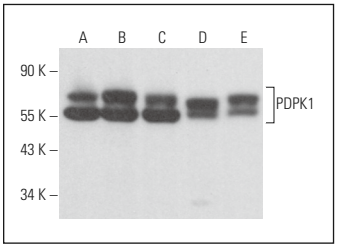
Molecular Weight of PDPK1: 68 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, MCF7 whole cell lysate: sc-2206 or F9 cell lysate: sc-2245.

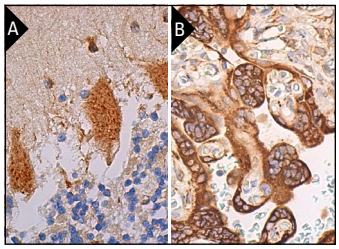
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



PDPK1 (E-3): sc-17765. Western blot analysis of PDPK1 expression in MCF7 (**A**), ZR-75-1 (**B**), SK-BR-3 (**C**), F9 (**D**) and NIH/3T3 (**E**) whole cell lysates.



PDPK1 (E-3): sc-17765. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of purkinje cells and cells in molecular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (**B**).

SELECT PRODUCT CITATONS

1. Tanaka, H., et al. 2005. 3-phosphoinositide-dependent protein kinase-1-mediated IκB kinase β (IkkB) phosphorylation activates NFκB signaling. J. Biol. Chem. 280: 40965-40973.
2. Maurer, M., et al. 2009. 3-phosphoinositide-dependent kinase 1 potentiates upstream lesions on the phosphatidylinositol 3-kinase pathway in breast carcinoma. Cancer Res. 69: 6299-6306.
3. Delekta, P.C., et al. 2010. Thrombin-dependent NFκB activation and monocyte/endothelial adhesion are mediated by the CARMA3·Bcl10·MALT1 signalosome. J. Biol. Chem. 285: 41432-41442.
4. Pollock C.B, et al. 2011. PPARδ activation acts cooperatively with 3-phosphoinositide-dependent protein kinase-1 to enhance mammary tumorigenesis. PLoS ONE 6: e16215.
5. Li, W., et al. 2012. SBF-1, a synthetic steroidal glycoside, inhibits melanoma growth and metastasis through blocking interaction between PDK1 and Akt3. Biochem. Pharmacol. 84: 172-181.
6. Yuan, H., et al. 2013. PPARδ induces estrogen receptor-positive mammary neoplasia through an inflammatory and metabolic phenotype linked to mTOR activation. Cancer Res. 73: 4349-4361.
7. García-Carracedo, D., et al. 2016. Impact of PI3K/Akt/mTOR pathway activation on the prognosis of patients with head and neck squamous cell carcinomas. Oncotarget 7: 29780-29793.
8. Hurtado, E., et al. 2017. Synaptic activity and muscle contraction increases PDK1 and PKCβI phosphorylation in the presynaptic membrane of the neuromuscular junction. Front. Mol. Neurosci. 10: 270.

RESEARCH USE

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