

PDK4 (B-1): sc-518061

BACKGROUND

Pyruvate dehydrogenase kinase family members (PDK1, 2, 3, 4) are serine kinases that catalyze phosphorylation of the E1 α subunit of the pyruvate dehydrogenase complex (PDC). PDC activity is controlled through phosphorylation and dephosphorylation of the E1 α subunit, which leads to inactivation and reactivation, respectively. Upregulation of PDK isoenzymes occurs during starvation conditions, where acetyl-CoA is alternatively generated through fatty acid oxidation. PDKs contain five conserved regions and are mechanistically similar to bacterial His-kinases since both require histidine residues for activity. In mammals, transcripts for PDK4 are most abundant in heart and skeletal muscle. PDK4 protein levels increase in starved or diabetic rat cardiac muscle and decrease upon re-feeding or Insulin exposure, suggesting that PDK4 protein levels are important for long-term regulation of PDC activity in heart.

REFERENCES

1. Gudi, R., et al. 1995. Diversity of the pyruvate dehydrogenase kinase gene family in humans. *J. Biol. Chem.* 270: 28989-28994.
2. Bowker-Kinley, M.M., et al. 1998. Evidence for existence of tissue-specific regulation of the mammalian pyruvate dehydrogenase complex. *Biochem. J.* 329: 191-196.
3. Sugden, M.C., et al. 2000. Selective modification of the pyruvate dehydrogenase kinase isoform profile in skeletal muscle in hyperthyroidism: implications for the regulatory impact of glucose on fatty acid oxidation. *J. Endocrinol.* 167: 339-345.
4. Mooney, B.P., et al. 2000. Histidine modifying agents abolish pyruvate dehydrogenase kinase activity. *Biochem. Biophys. Res. Commun.* 267: 500-503.
5. Baker, J.C., et al. 2000. Marked differences between two isoforms of human pyruvate dehydrogenase kinase. *J. Biol. Chem.* 275: 15773-15781.

CHROMOSOMAL LOCATION

Genetic locus: PDK4 (human) mapping to 7q21.3.

SOURCE

PDK4 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 14-38 near the N-terminus of PDK4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PDK4 (B-1) is available conjugated to agarose (sc-518061 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518061 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518061 PE), fluorescein (sc-518061 FITC), Alexa Fluor[®] 488 (sc-518061 AF488), Alexa Fluor[®] 546 (sc-518061 AF546), Alexa Fluor[®] 594 (sc-518061 AF594) or Alexa Fluor[®] 647 (sc-518061 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-518061 AF680) or Alexa Fluor[®] 790 (sc-518061 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PDK4 (B-1) is recommended for detection of PDK4 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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 PDK4 siRNA (h): sc-39030, PDK4 shRNA Plasmid (h): sc-39030-SH and PDK4 shRNA (h) Lentiviral Particles: sc-39030-V.

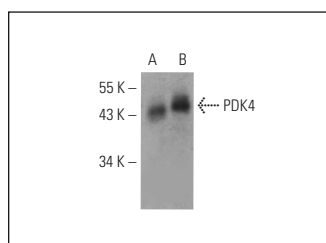
Molecular Weight of PDK4: 47 kDa.

Positive Controls: PDK4 (h3): 293T Lysate: sc-173512, human skeletal muscle extract: sc-363776 or human heart extract: sc-363763.

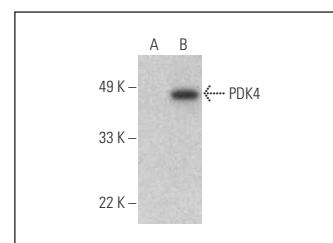
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



PDK4 (B-1): sc-518061. Western blot analysis of PDK4 expression in human heart (A) and human skeletal muscle (B) tissue extracts



PDK4 (B-1): sc-518061. Western blot analysis of PDK4 expression in non-transfected: sc-117752 (A) and human PDK4 transfected: sc-173512 (B) 293T whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

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