

PDK1 (V-17): sc-30691

BACKGROUND

Mitochondrial pyruvate dehydrogenase (PDH) catalyzes the oxidative decarboxylation of pyruvate and plays a central role in the regulation of homeostasis of carbohydrate fuels in mammals. PDH activity is controlled by a phosphorylation/dephosphorylation cycle, phosphorylation leading to inactivation and dephosphorylation leading to reactivation of PDH. The phosphorylation of PDH is catalyzed by pyruvate dehydrogenase kinase (PDK), the activity of which is stimulated by the products of PDH catalysis. PDK1 consists of α and β subunits; the kinase activity resides in the α subunit. Three PDK isoenzymes have been identified in humans (PDK1, 2 and 3) and two have been identified in rodent (PDK1 and 2).

REFERENCES

1. Linn, T.C., et al. 1969. α -keto acid dehydrogenase complexes. X. Regulation of the activity of the pyruvate dehydrogenase complex from beef kidney mitochondria by phosphorylation and dephosphorylation. *Proc. Natl. Acad. Sci. USA* 62: 234-241.
2. Hucho, F., et al. 1972. α -keto acid dehydrogenase complexes. XVII. Kinetic and regulatory properties of pyruvate dehydrogenase kinase and pyruvate dehydrogenase phosphatase from bovine kidney and heart. *Arch. Biochem. Biophys.* 151: 328-340.
3. Cate, R.L., et al. 1978. A unifying mechanism for stimulation of mammalian pyruvate dehydrogenase(a) kinase by reduced nicotinamide adenine dinucleotide, dihydrolipamide, acetyl coenzyme A, or pyruvate. *J. Biol. Chem.* 253: 496-503.
4. Stepp, L.R., et al. 1983. Purification and properties of pyruvate dehydrogenase kinase from bovine kidney. *J. Biol. Chem.* 258: 9454-9458.

CHROMOSOMAL LOCATION

Genetic locus: PDK1 (human) mapping to 2q31.1; Pdk1 (mouse) mapping to 2 C3.

SOURCE

PDK1 (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PDK1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-30691 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

PDK1 (V-17) is recommended for detection of precursor and mature PDK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PDK1 (V-17) is also recommended for detection of precursor and mature PDK1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PDK1 siRNA (h): sc-36203, PDK1 siRNA (m): sc-36204, PDK1 shRNA Plasmid (h): sc-36203-SH, PDK1 shRNA Plasmid (m): sc-36204-SH, PDK1 shRNA (h) Lentiviral Particles: sc-36203-V and PDK1 shRNA (m) Lentiviral Particles: sc-36204-V.

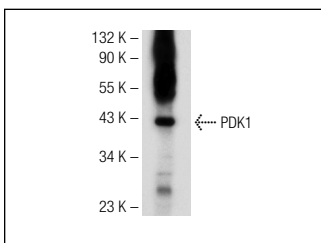
Molecular Weight of PDK1: 49 kDa.

Positive Controls: mouse heart extract: sc-2254, rat heart extract: sc-2393 or NIH/3T3 whole cell lysate: sc-2210.

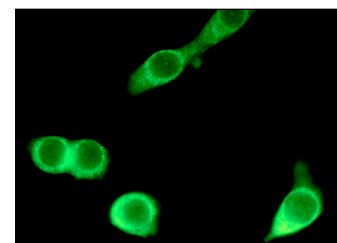
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PDK1 (V-17): sc-30691. Western blot analysis of PDK1 expression in mouse heart tissue extract.



PDK1 (V-17): sc-30691. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

RESEARCH USE

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



Try **PDK1 (4A11F5): sc-293160**, our highly recommended monoclonal alternative to PDK1 (V-17).