

# PDK (H-300): sc-28783

## BACKGROUND

Pyruvate dehydrogenase kinase family members (PDK1, 2, 3 and 4) are serine kinases that catalyze phosphorylation of the E1 $\alpha$  subunit of the pyruvate dehydrogenase complex (PDC). PDC activity is controlled through phosphorylation and dephosphorylation of the E1 $\alpha$  subunit, which leads to inactivation and reactivation, respectively. PDK3 binding to a free lipoyl domain (L2) in dihydrolypoyl acetyltransferase (E2), which comprises the core of PDC, leads to a large increase in E1 $\alpha$  phosphorylation. 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, in that both require histidine residues for activity. In mammals, transcripts for PDK3 are most abundant in testis and are moderately expressed in heart and skeletal muscle.

## SOURCE

PDK (H-300) is a rabbit polyclonal antibody raised against amino acids 137-436 mapping at the C-terminus of PDK1 of human origin.

## PRODUCT

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

## APPLICATIONS

PDK (H-300) is recommended for detection of PDK1, 2, 3 and 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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). PDK (H-300) is also recommended for detection of PDK1, 2, 3 and 4 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of PDK: 49/46/47 kDa.

Positive Controls: PDK1 (h): 293T Lysate: sc-113873.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

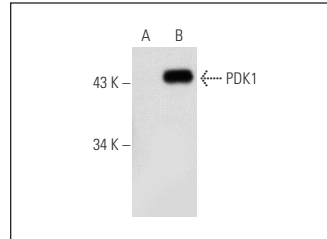
## RESEARCH USE

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

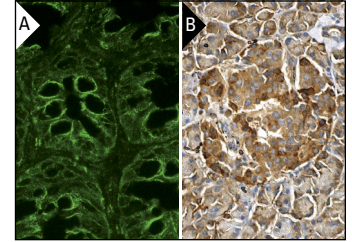
## STORAGE

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

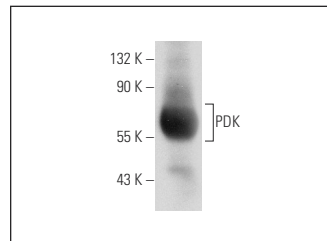
## DATA



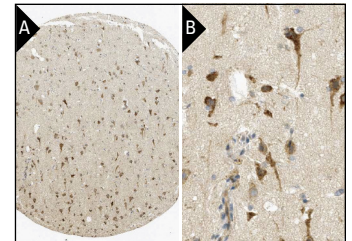
PDK (H-300): sc-28783. Western blot analysis of PDK1 expression in non-transfected: sc-117752 (A) and human PDK1 transfected: sc-113873 (B) 293T whole cell lysates.



PDK (H-300): sc-28783. Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells (B).



PDK (H-300): sc-28783. Western blot analysis of PDK expression in mouse heart tissue extract.



PDK (H-300): sc-28783. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal and glial cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

## SELECT PRODUCT CITATIONS

1. Arduini, A., et al. 2011. Mitochondrial biogenesis fails in secondary biliary cirrhosis in rats leading to mitochondrial DNA depletion and deletions. *Am. J. Physiol. Gastrointest. Liver Physiol.* 301: G119-G127.
2. Monleon, D., et al. 2014. Metabolomic analysis of long-term spontaneous exercise in mice suggests increased lipolysis and altered glucose metabolism when animals are at rest. *J. Appl. Physiol.* 117: 1110-1119.
3. Zhao, K., et al. 2014. Wogonin suppresses melanoma cell B16-F10 invasion and migration by inhibiting Ras-mediated pathways. *PLoS ONE* 9: e106458.


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Try **PDK1 (4A11F5): sc-293160** or **PDK2 (S-15): sc-100534**, our highly recommended monoclonal alternatives to PDK (H-300).