

# PANK1 (P-17): sc-82284

## BACKGROUND

The pantothenate kinase (PANK) family of proteins catalyzes the first step in coenzyme A (CoA). Pantothenate kinase 1 (PANK1) is a 598 amino acid member of the pantothenate kinase family that plays a role in the physiological regulation of the intracellular CoA concentration. Localized to the cytoplasm, PANK1 is strongly inhibited by acetyl-CoA and manyl-CoA, as well as by high concentration of non-esterified CoA (CoASH). Four known isoforms of PANK1 exist as a result of alternative splicing events. Of these isoforms, PANK1 $\alpha$  and PANK1 $\beta$  have been identified as the catalytically active isoforms. Isoform PANK1 $\alpha$  is most highly expressed in brain, heart, kidney, liver, skeletal muscle and kidney. Isoform PANK1 $\beta$  is detected at much lower levels in kidney, liver, brain and testis and is not detected in heart or skeletal muscle.

## REFERENCES

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- Rock, C.O., et al. 2002. The murine pantothenate kinase (Pank1) gene encodes two differentially regulated pantothenate kinase isozymes. *Gene* 291: 35-43.
- Ni, X., et al. 2002. Cloning and characterization of a novel human pantothenate kinase gene. *Int. J. Biochem. Cell Biol.* 34: 109-115.
- Ramaswamy, G., et al. 2004. PPAR $\alpha$  controls the intracellular coenzyme A concentration via regulation of PANK1 $\alpha$  gene expression. *J. Lipid Res.* 45: 17-31.
- Tilton, G.B., et al. 2006. Plant coenzyme A biosynthesis: characterization of two pantothenate kinases from *Arabidopsis*. *Plant Mol. Biol.* 61: 629-642.
- Hong, B.S., et al. 2007. Crystal structures of human pantothenate kinases. Insights into allosteric regulation and mutations linked to a neurodegeneration disorder. *J. Biol. Chem.* 282: 27984-27993.
- Wu, Z., et al. 2009. Pantothenate kinase-associated neurodegeneration: insights from a *Drosophila* model. *Hum. Mol. Genet.* 18: 3659-3672.

## CHROMOSOMAL LOCATION

Genetic locus: PANK1 (human) mapping to 10q23.31.

## SOURCE

PANK1 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PANK1 of human origin.

## 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.

## PRODUCT

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

Blocking peptide available for competition studies, sc-82284 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PANK1 (P-17) is recommended for detection of PANK1 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with isoforms PANK1-2, PANK1-3 or PANK1-4.

Suitable for use as control antibody for PANK1 siRNA (h): sc-76040, PANK1 shRNA Plasmid (h): sc-76040-SH and PANK1 shRNA (h) Lentiviral Particles: sc-76040-V.

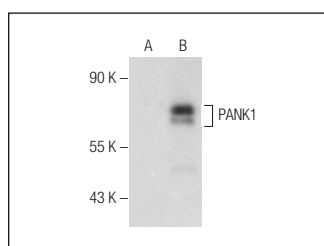
Molecular Weight of PANK1: 60 kDa.

Positive Controls: PANK1 (h): 293T Lysate: sc-372526.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotting 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 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<sup>™</sup> Mounting Medium: sc-24941.

## DATA



PANK1 (P-17): sc-82284. Western blot analysis of PANK1 expression in non-transfected: sc-117752 (A) and human PANK1 transfected: sc-372526 (B) 293T whole cell lysates.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.