SANTA CRUZ BIOTECHNOLOGY, INC.

PANK4 (N-20): sc-82300

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Coenzyme A (CoA) is an important coenzyme involved in the synthesis and oxidation of fatty acids, as well as the oxidation of pyruvate in the citric acid (Krebs) cycle. The pantothenate kinase (PANK) family of proteins catalyzes the first step in coenzyme A biosynthesis. Pantothenate kinase 4 (PANK4) is a 773 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, PANK4 is regulated by feedback inhibition by CoA and its thioesters. PANK4 transfers a phosphate from ATP to pantothenate (vitamin B5), resulting in formation of 4'-phosphopantothenate. Like its closely related family members, PANK1, PANK2 and PANK3, PANK4 is present in all tissues though its highest expression is in skeletal muscle. Pantothenate kinase associated neurodegeneration (PKAN) results from mutations in the gene encoding PANK2, the only mitochondria-targeted human PANK.

REFERENCES

1. Zhou, B., et al. 2001. A novel pantothenate kinase gene (PANK2) is defective in Hallervorden-Spatz syndrome. Nat. Genet. 28: 345-349.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606162. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Li, Y., et al. 2005. High glucose upregulates pantothenate kinase 4 (PANK4) and thus affects M2-type pyruvate kinase (Pkm2). Mol. Cell. Biochem. 277: 117-125.
4. Li, Y., et al. 2005. Screening susceptibility genes of type 2 diabetes in Chinese population by single nucleotide polymorphism analysis. Zhongguo Yi Xue Ke Xue Yuan Xue Bao 27: 274-279.
5. Gregory, S.G., et al. 2006. The DNA sequence and bio-logical annotation of human chromosome 1. Nature 441: 315-321.
6. Xiang, R.L., et al. 2007. PanK4 inhibits pancreatic β cell apoptosis by decreasing the transcriptional level of pro-caspase-9. Cell Res. 17: 966-968.
7. Gauci, S., et al. 2009. Lys-N and trypsin cover complementary parts of the phosphoproteome in a refined SCX-based approach. Anal. Chem. 81: 4493-4501.

CHROMOSOMAL LOCATION

Genetic locus: PANK4 (human) mapping to 1p36.32; Pank4 (mouse) mapping to 4 E2.

SOURCE

PANK4 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PANK4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-82300 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PANK4 (N-20) is recommended for detection of PANK4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with family members PANK1, PANK2 or PANK3.

PANK4 (N-20) is also recommended for detection of PANK4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PANK4 siRNA (h): sc-76046, PANK4 siRNA (m): sc-76047, PANK4 shRNA Plasmid (h): sc-76046-SH, PANK4 shRNA Plasmid (m): sc-76047-SH, PANK4 shRNA (h) Lentiviral Particles: sc-76046-V and PANK4 shRNA (m) Lentiviral Particles: sc-76047-V.

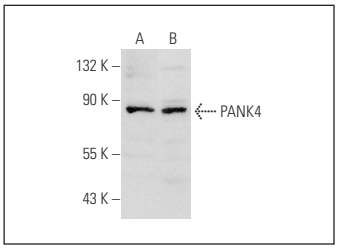
Molecular Weight of PANK4: 86 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136 or K-562 whole cell lysate: sc-2203.

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) 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™ Mounting Medium: sc-24941.

DATA



PANK4 (N-20): sc-82300. Western blot analysis of PANK4 expression in HEK293 (**A**) and K-562 (**B**) 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.