

PANK3 (E-13): sc-82296

BACKGROUND

The pantothenate kinase (PANK) family of proteins catalyzes the first step in coenzyme A (CoA) biosynthesis. Coenzyme A 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. Pantothenate kinase 3 (PANK3) is a 370 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, PANK3 is regulated by feedback inhibition by CoA and its thioesters. PANK3 transfers a phosphate from ATP to pantothenate (Vitamin B5), resulting in formation of 4'-phosphopantothenate. Closely related to its family members, PANK1, PANK2 and PANK4, PANK3 is highly expressed in liver. Pantothenate kinase associated neurodegeneration (PKAN) results from mutations in the gene encoding PANK2, the only mitochondria targeted human PANK.

REFERENCES

1. Rock, C.O., Calder, R.B., Karim, M.A. and Jackowski, S. 2000. Pantothenate kinase regulation of the intracellular concentration of coenzyme A. *J. Biol. Chem.* 275: 1377-1383.
2. Zhou, B., Westaway, S.K., Levinson, B., Johnson, M.A., Gitschier, J. and Hayflick, S.J. 2001. A novel pantothenate kinase gene (PANK2) is defective in Hallervorden-Spatz syndrome. *Nat. Genet.* 28: 345-349.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606161. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Gordon, N. 2002. Pantothenate kinase-associated neurodegeneration (Hallervorden-Spatz syndrome). *Eur. J. Paediatr. Neurol.* 6: 243-247.
5. Zhang, Y.M., Rock, C.O. and Jackowski, S. 2005. Feedback regulation of murine pantothenate kinase 3 by coenzyme A and coenzyme A thioesters. *J. Biol. Chem.* 280: 32594-32601.
6. Leonardi, R., Zhang, Y.M., Rock, C.O. and Jackowski, S. 2005. Coenzyme A: back in action. *Prog. Lipid Res.* 44: 125-153.
7. Hong, B.S., Senisterra, G., Rabeh, W.M., Vedadi, M., Leonardi, R., Zhang, Y.M., Rock, C.O., Jackowski, S. and Park, H.W. 2007. Crystal structures of human pantothenate kinases. Insights into allosteric regulation and mutations linked to a neurodegeneration disorder. *J. Biol. Chem.* 282: 27984-27993.

CHROMOSOMAL LOCATION

Genetic locus: PANK3 (human) mapping to 5q35.1; Pank3 (mouse) mapping to 11 A4.

SOURCE

PANK3 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PANK3 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.

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-82296 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PANK3 (E-13) is recommended for detection of PANK3 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 PANK4.

PANK3 (E-13) is also recommended for detection of PANK3 in additional species, including bovine and porcine.

Suitable for use as control antibody for PANK3 siRNA (h): sc-76044, PANK3 siRNA (m): sc-76045, PANK3 shRNA Plasmid (h): sc-76044-SH, PANK3 shRNA Plasmid (m): sc-76045-SH, PANK3 shRNA (h) Lentiviral Particles: sc-76044-V and PANK3 shRNA (m) Lentiviral Particles: sc-76045-V.

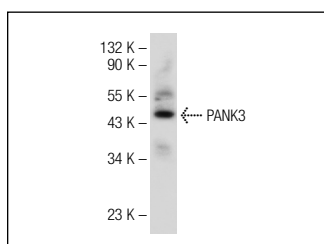
Molecular Weight of PANK3: 41 kDa

Positive Controls: IMR-32 cell lysate: sc-2409.

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



PANK3 (E-13): sc-82296. Western blot analysis of PANK3 expression in IMR-32 whole cell lysate.

RESEARCH USE

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