SANTA CRUZ BIOTECHNOLOGY, INC.

PANK3 (MDA-299-62A): sc-551231

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 2000. Pantothenate kinase regulation of the intracellular concentration of coenzyme A. J. Biol. Chem. 275: 1377-1383.
2. Zhou, B., et al. 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., et al. 2005. Feedback regulation of murine pantothenate kinase 3 by coenzyme A and coenzyme A thioesters. J. Biol. Chem. 280: 32594-32601.
6. Leonardi, R., et al. 2005. Coenzyme A: back in action. Prog. Lipid Res. 44: 125-153.

CHROMOSOMAL LOCATION

Genetic locus: PANK3 (human) mapping to 5q34.

SOURCE

PANK3 (MDA-299-62A) is a mouse monoclonal antibody raised against full length PANK3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PANK3 (MDA-299-62A) is available conjugated to agarose (sc-551231 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-551231 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-551231 PE), fluorescein (sc-551231 FITC), Alexa Fluor® 488 (sc-551231 AF488), Alexa Fluor® 546 (sc-551231 AF546), Alexa Fluor® 594 (sc-551231 AF594) or Alexa Fluor® 647 (sc-551231 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-551231 AF680) or Alexa Fluor® 790 (sc-551231 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PANK3 (MDA-299-62A) is recommended for detection of PANK3 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

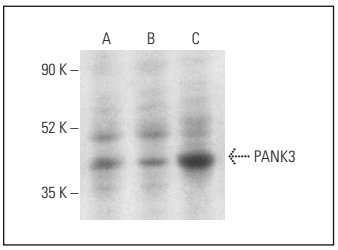
Molecular Weight of PANK3: 41 kDa.

Positive Controls: PANK3 (h): 293 Lysate: sc-113347, SK-MEL-28 cell lysate: sc-2236 or human liver extract: sc-363766.

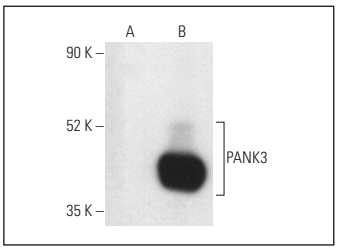
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



PANK3 (MDA-299-62A): sc-551231. Western blot analysis of PANK3 expression in SK-MEL-28 (**A**) and SH-SY5Y (**B**) whole cell lysates and human liver tissue extract (**C**).



PANK3 (MDA-299-62A): sc-551231. Western blot analysis of PANK3 expression in non-transfected: sc-110760 (**A**) and human PANK3 transfected: sc-113347 (**B**) 293 whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.

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.

PROTOCOLS

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