SANTA CRUZ BIOTECHNOLOGY, INC.

PCB (E-5): sc-365672

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pyruvate carboxylase (PCB) is a biotinylated mitchondrial enzyme that catalyzes the synthesis of oxaloacetate from pyruvate in a tissue specific manner. In addition to covalently binding the biotin cofactor, PCB contains consensus sequences for the attachment of ATP and the substrate pyruvate. The PCB gene is located on the long arm of chromosome 11. Mutations in PCB metabolism (pyruvate carboxylase deficiency) are known to cause lactic acidosis, hypoglycemia and mental retardation.

REFERENCES

1. Freytag, S.O., et al. 1984. Molecular cloning of a cDNA for human pyruvate carboxylase. Structural relationship to other biotin-containing carboxylases and regulation of mRNA content in differentiating preadipocytes. J. Biol. Chem. 259: 12831-12837.
2. MacKay, N., et al. 1994. cDNA cloning of human kidney pyruvate carboxylase. Biochem. Biophys. Res. Commun. 202: 1009-1014.
3. Wexler, I.D., et al. 1998. Molecular characterization of pyruvate carboxylase deficiency in two consanguineous families. Pediatr. Res. 43: 579-584.
4. Innocenti, A., et al. 2004. Carbonic anhydrase inhibitors: inhibition of the membrane-bound human isozyme IV with anions. Bioorg. Med. Chem. Lett. 4: 5769-5773.
5. Karnik, D., et al. 2004. Hyperammonemia with citrullinemia. Indian Pediatr. 41: 842-844.
6. Hall, P.R., et al. 2004. Transcarboxylase 5S structures: assembly and catalytic mechanism of a multienzyme complex subunit. EMBO J. 23: 3621-3631.
7. Cline, G.W., et al. 2004. 13C NMR isotopomer analysis of anaplerotic pathways in INS-1 cells. J. Biol. Chem. 279: 44370-44375.
8. Hertz, L., et al. 2004. Intercellular metabolic compartmentation in the brain: past, present and future. Neurochem. Int. 45: 285-296.
9. Vlasova, T.I., et al. 2005. Biotin deficiency reduces expression of SLC19A3, a potential biotin transporter, in leukocytes from human blood. J. Nutr. 135: 42-47.

CHROMOSOMAL LOCATION

Genetic locus: PC (human) mapping to 11q13.2; Pcx (mouse) mapping to 19 A.

SOURCE

PCB (E-5) is a mouse monoclonal antibody raised against amino acids 879-1178 mapping at the C-terminus of PCB of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

PCB (E-5) is recommended for detection of PCB of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for PCB siRNA (h): sc-45531, PCB siRNA (m): sc-45532, PCB shRNA Plasmid (h): sc-45531-SH, PCB shRNA Plasmid (m): sc-45532-SH, PCB shRNA (h) Lentiviral Particles: sc-45531-V and PCB shRNA (m) Lentiviral Particles: sc-45532-V.

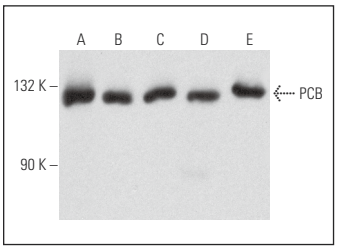
Molecular Weight of PCB: 130 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Neuro-2A whole cell lysate: sc-364185 or C6 whole cell lysate: sc-364373.

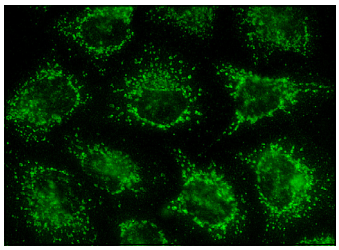
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PCB (E-5): sc-365672. Western blot analysis of PCB expression in Hep G2 (**A**), c4 (**B**), Neuro-2A (**C**), C6 (**D**) and NRK (**E**) whole cell lysates.



PCB (E-5): sc-365672. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Zhao, J., et al. 2020. Deamidation shunts RelA from mediating inflammation to aerobic glycolysis. Cell Metab. 31: 937-955.e7.

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.