

PCB (F-3): sc-365491

BACKGROUND

Pyruvate carboxylase (PCB) is a biotinylated mitochondrial 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 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1015-1041 near the C-terminus of PCB of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365491 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PCB (F-3) is recommended for detection of PCB 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).

PCB (F-3) is also recommended for detection of PCB in additional species, including equine, canine and bovine.

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.

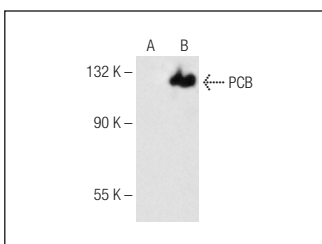
Molecular Weight of PCB: 130 kDa.

Positive Controls: rat kidney extract: sc-2394, mouse brain extract: sc-2253 or PCB (m): 293T Lysate: sc-122419.

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 (F-3): sc-365491. Western blot analysis of PCB expression in non-transfected: sc-117752 (A) and mouse PCB transfected: sc-122419 (B) 293T 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.