SANTA CRUZ BIOTECHNOLOGY, INC.

PDC-E2 (B-2): sc-271534

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Primary biliary cirrhosis (PBC) is a chronic, destructive autoimmune liver disease characterized by the presence of antimitochondrial autoantibodies in patient's serum and T cell-mediated destruction of the biliary epithelial cells lining the small intrahepatic bile ducts. Patient sera are characterized by a high frequency (greater than 95%) of autoantibodies directed to a mitochondrial antigen, identified as the E2 component of the pyruvate dehydrogenase multienzyme complex (PDC-E2). PDC-E2 contains both an amino-terminal lipoyl-bearing domain and a carboxy-terminal catalytic domain. The human sequence preserves the Glu-Thr-Asp-Lys-Ala motif of the lipoyl-bearing site. Two conformationally alternative forms of the PDC-E2 protein have been revealed by immunoblotting. The immunodominant autoepitopes of the autoantigens correspond to the inner lipoyl domain. A significant number of asymptomatic patients found to have antibodies to PDC-E2 are at high risk of developing primary biliary cirrhosis.

CHROMOSOMAL LOCATION

Genetic locus: DLAT (human) mapping to 11q23.1; Dlat (mouse) mapping to 9 A5.3.

SOURCE

PDC-E2 (B-2) is a mouse monoclonal antibody raised against amino acids 231-390 mapping within an internal region of PDC-E2 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.

PDC-E2 (B-2) is available conjugated to agarose (sc-271534 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271534 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271534 PE), fluorescein (sc-271534 FITC), Alexa Fluor® 488 (sc-271534 AF488), Alexa Fluor® 546 (sc-271534 AF546), Alexa Fluor® 594 (sc-271534 AF594) or Alexa Fluor® 647 (sc-271534 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271534 AF680) or Alexa Fluor® 790 (sc-271534 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PDC-E2 (B-2) is recommended for detection of PDC-E2 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), immunohistochemistry (including paraffin-embedded sections) (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 PDC-E2 siRNA (h): sc-40813, PDC-E2 siRNA (m): sc-40814, PDC-E2 shRNA Plasmid (h): sc-40813-SH, PDC-E2 shRNA Plasmid (m): sc-40814-SH, PDC-E2 shRNA (h) Lentiviral Particles: sc-40813-V and PDC-E2 shRNA (m) Lentiviral Particles: sc-40814-V.

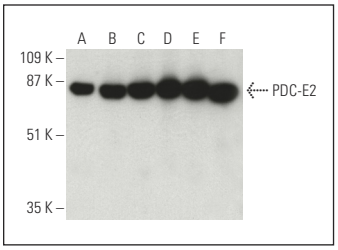
Molecular Weight of PDC-E2: 70 kDa.

Positive Controls: Caco-2 Cell Lysate: sc-2262 or Caki-1 cell lysate: sc-2224.

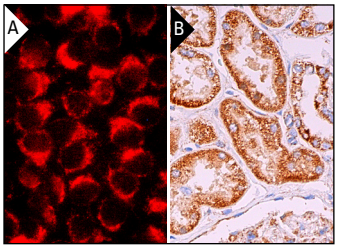
STORAGE

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

DATA



PDC-E2 (B-2) HRP: sc-271534 HRP. Direct western blot analysis of PDC-E2 expression in HeLa (**A**), Caki-1 (**B**), MDA-MB-231 (**C**), Caco-2 (**D**), K-562 (**E**) and RAW 264.7 (**F**) whole cell lysates.



PDC-E2 (B-2): sc-271534. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Goguet-Rubio, P., et al. 2016. E4F1-mediated control of pyruvate dehydrogenase activity is essential for skin homeostasis. Proc. Natl. Acad. Sci. USA 113: 11004-11009.
2. Richard, A.J., et al. 2017. Pyruvate dehydrogenase complex (PDC) subunits moonlight as interaction partners of phosphorylated Stat5 in adipocytes and adipose tissue. J. Biol. Chem. 292: 19733-19742.
3. Ni, M., et al. 2019. Functional assessment of lipoyltransferase-1 deficiency in cells, mice, and humans. Cell Rep. 27: 1376-1386.e6.
4. Kilanczyk, E., et al. 2020. S-adenosyl-L-methionine (SAMe) halts the autoimmune response in patients with primary biliary cholangitis (PBC) via antioxidant and S-glutathionylation processes in cholangiocytes. Biochim. Biophys. Acta Mol. Basis Dis. 1866: 165895.
5. Cai, Z., et al. 2020. Phosphorylation of PDHA by AMPK drives TCA cycle to promote cancer metastasis. Mol. Cell 80: 263-278.e7.
6. Lee, J., et al. 2020. The plasticity of the pyruvate dehydrogenase complex confers a labile structure that is associated with its catalytic activity. PLoS ONE 15: e0243489.
7. Fang, H., et al. 2021. Implementation of dietary methionine restriction using casein after selective, oxidative deletion of methionine. iScience 24: 102470.
8. Kilanczyk, E., et al. 2021. p-STAT3 is a PDC-E2 interacting partner in human cholangiocytes and hepatocytes with potential pathobiological implications. Sci. Rep. 11: 21649.

RESEARCH USE

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