

# PDC-E2 (15D3): sc-65244

## 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.

## REFERENCES

- Coppel, R.L., et al. 1988. Primary structure of the human M2 mitochondrial autoantigen of primary biliary cirrhosis: dihydrolipoamide acetyltransferase. *Proc. Natl. Acad. Sci. USA* 85: 7317-7321.
- Thekkumkara, T.J., et al. 1988. Nucleotide sequence of a cDNA for the dihydrolipoamide acetyltransferase component of human pyruvate dehydrogenase complex. *FEBS Lett.* 240: 45-48.
- Klein, R., et al. 1993. Sera from patients with tuberculosis recognize the M2a-epitope (E2 subunit of pyruvate dehydrogenase) specific for primary biliary cirrhosis. *Clin. Exp. Immunol.* 92: 308-316.
- Chen, Q.Y., et al. 1993. Antibody to two forms of dihydrolipoamide acetyltransferase (PDC-E2) in primary biliary cirrhosis. *Liver* 13: 130-135.
- Howard, M.J., et al. 1998. Three-dimensional structure of the major autoantigen in primary biliary cirrhosis. *Gastroenterology* 115: 139-146.
- Palmer, J.M., et al. 1999. T cell responses to the putative dominant autoepitope in primary biliary cirrhosis (PBC). *Clin. Exp. Immunol.* 116: 133-139.
- Quaranta, S., et al. 1999. The immunopathogenesis of primary biliary cirrhosis. *Hepatology* 46: 3041-3047.

## CHROMOSOMAL LOCATION

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

## SOURCE

PDC-E2 (15D3) is a mouse monoclonal antibody raised against PDC-E2.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

PDC-E2 (15D3) is recommended for detection of PDC-E2 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

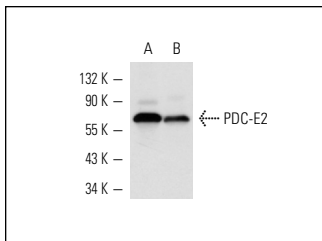
Molecular Weight of PDC-E2: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PDC-E2 (h): 293T Lysate: sc-114530 or mouse liver extract: sc-2256.

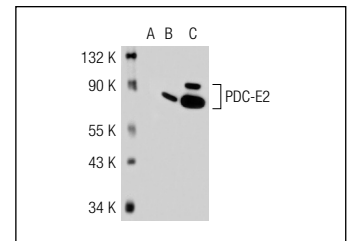
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PDC-E2 (15D3): sc-65244. Western blot analysis of PDC-E2 expression in human heart (A) and mouse liver (B) tissue extracts.



PDC-E2 (15D3): sc-65244. Western blot analysis of PDC-E2 expression in non-transfected 293T: sc-117752 (A), human PDC-E2 transfected 293T: sc-114530 (B) and HeLa (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Douguchi, J., et al. 2009. Construction of human monoclonal single-chain Fv antibodies against small-cell lung cancer by phage display libraries derived from cell-immunized SCID mice engrafted with human peripheral blood lymphocytes. *Proteomics Clin. Appl.* 3: 1265-1272.

## STORAGE

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