SANTA CRUZ BIOTECHNOLOGY, INC.

DLD (I-16): sc-55932

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

DLD (dihydrolipoyl dehydrogenase or dihydrolipoamide dehydrogenase), also known as GCSL (glycine cleavage system L protein), PHE3, DLDH or LAD, is a member of the class I pyridine nucleotide-disulfide oxidoreductase family. DLD is a flavin-dependent oxidoreductase and functions as a component of the α-keto acid dehydrogenase, the pyruvate dehydrogenase, the α-ketoglutarate dehydrogenase, the branched-chain α-keto acid dehydrogenase and as the L protein in the mitochondrial glycine cleavage system. DLD localizes to the mitochondrial matrix and exists as a monomer, homodimer or tetramer that is required for energy metabolism in all eukaryotes. More specifically, DLD generates NADH and lipoic acid from dihydrolipoic acid and NAD^+. The DLD homodimer catalyzes the opposite reaction. Mutations in the gene encoding DLD can result in MSUD (maple syrup urine disease) and congenital infantile lactic acidosis.

REFERENCES

1. Brown, A.M., et al. 2004. Association of the dihydrolipoamide dehydrogenase gene with Alzheimer's disease in an Ashkenazi Jewish population. Am. J. Med. Genet. B Neuropsychiatr. Genet. 131: 60-66.
2. Starkov, A.A., et al. 2004. Mitochondrial α-ketoglutarate dehydrogenase complex generates reactive oxygen species. J. Neurosci. 24: 7779-7788.
3. Nishimoto, E., et al. 2006. Thermal unfolding process of dihydrolipoamide dehydrogenase studied by fluorescence spectroscopy. J. Biochem. 140: 349-357.
4. Cameron, J.M., et al. 2006. Novel mutations in dihydrolipoamide dehydrogenase deficiency in two cousins with borderline-normal PDH complex activity. Am. J. Med. Genet. A 140A: 1542-1552.
5. Smolle, M., et al. 2006. A new level of architectural complexity in the human pyruvate dehydrogenase complex. J. Biol. Chem. 281: 19772-19780.
6. Kim, H. 2006. Activity of human dihydrolipoamide dehydrogenase is largely reduced by mutation at isoleucine-51 to alanine. J. Biochem. Mol. Biol. 39: 223-227.

CHROMOSOMAL LOCATION

Genetic locus: DLD (human) mapping to 7q31.1; Dld (mouse) mapping to 12 A3.

SOURCE

DLD (I-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DLD of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55932 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

DLD (I-16) is recommended for detection of DLD 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), 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).

DLD (I-16) is also recommended for detection of DLD in additional species, including equine, canine, bovine, porcine and avian.

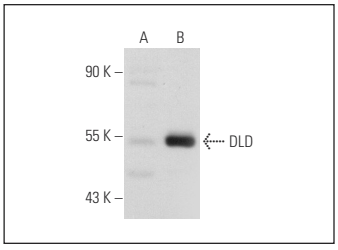
Suitable for use as control antibody for DLD siRNA (h): sc-62218, DLD siRNA (m): sc-62219, DLD shRNA Plasmid (h): sc-62218-SH, DLD shRNA Plasmid (m): sc-62219-SH, DLD shRNA (h) Lentiviral Particles: sc-62218-V and DLD shRNA (m) Lentiviral Particles: sc-62219-V.

Molecular Weight of DLD monomer: 50 kDa.

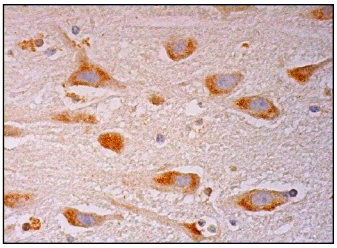
Molecular Weight of DLD homodimer: 100 kDa.

Positive Controls: mouse heart extract: sc-2254, DLD (m): 293T Lysate: sc-119779 or HeLa whole cell lysate: sc-2200.

DATA



DLD (I-16): sc-55932. Western blot analysis of DLD expression in non-transfected: sc-117752 (**A**) and mouse DLD transfected: sc-119779 (**B**) 293T whole cell lysates.



DLD (I-16): sc-55932. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells and glial cells.

STORAGE

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

PROTOCOLS

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

MONOS Satisfaction Guaranteed

Try **DLD (G-2): sc-365977** or **DLD (E-3): sc-376890**, our highly recommended monoclonal alternatives to DLD (I-16).