SANTA CRUZ BIOTECHNOLOGY, INC.

DLD (E-3): sc-376890

BACKGROUND

DLD (dihydrolipoyl dehyrogenase 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.

CHROMOSOMAL LOCATION

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

SOURCE

DLD (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 373-407 within an internal region of DLD of human origin.

PRODUCT

Each vial contains 200 µg IgM 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-376890 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

DLD (E-3) is recommended for detection of DLD 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).

DLD (E-3) is also recommended for detection of DLD in additional species, including equine, 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.

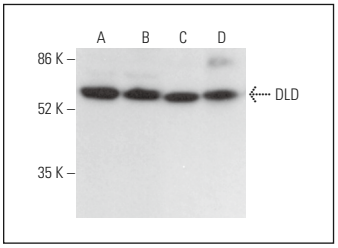
Molecular Weight of DLD homodimer: 100 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, mouse eye extract: sc-364241 or rat eye extract: sc-364805.

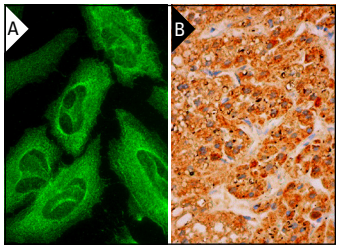
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



DLD (E-3): sc-376890. Western blot analysis of DLD expression in K-562 (**A**) and Jurkat (**B**) whole cell lysates and rat eye (**C**) and mouse eye (**D**) tissue extracts.



DLD (E-3): sc-376890. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhou, J., et al. 2016. Proteomics-based identification and analysis of proteins associated with *Helicobacter pylori* in gastric cancer. PLoS ONE 11: e0146521.
2. Chen, J., et al. 2018. Compartmentalized activities of the pyruvate dehydrogenase complex sustain lipogenesis in prostate cancer. Nat. Genet. 50: 219-228.
3. Sánchez, G., et al. 2020. Inhibition of chymotrypsin-like activity of the proteasome by ixazomib prevents mitochondrial dysfunction during myocardial ischemia. PLoS ONE 15: e0233591.

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.

PROTOCOLS

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