SANTA CRUZ BIOTECHNOLOGY, INC.

# DLD (m): 293T Lysate: sc-119779

## 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 140: 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 (mouse) mapping to 12 A3.

## PRODUCT

DLD (m): 293T Lysate represents a lysate of mouse DLD transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## APPLICATIONS

DLD (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive DLD antibodies. Recommended use: 10-20 µl per lane.

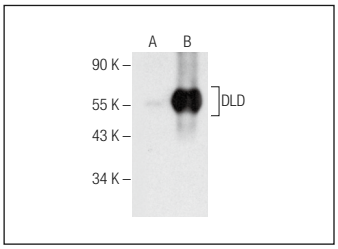
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DLD (E-3): sc-376890 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse DLD expression in DLD transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

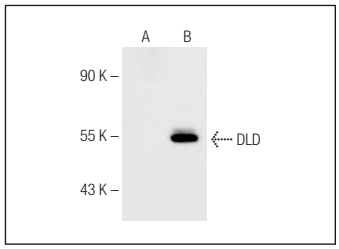
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA




DLD (E-3): sc-376890. Western blot analysis of DLD expression in non-transfected: sc-117752 (**A**) and mouse DLD transfected: sc-119779 (**B**) 293T whole cell lysates.




DLD (D-8): sc-271569. Western blot analysis of DLD expression in non-transfected: sc-117752 (**A**) and mouse DLD transfected: sc-119779 (**B**) 293T whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.