SANTA CRUZ BIOTECHNOLOGY, INC.

DHODH (H-300): sc-98570

BACKGROUND

DHODH (dihydroorotate dehydrogenase), also known as DHOdehase, is a 395 amino acid mitochondrial protein located on the outer surface of the inner mitochondrial membrane. It catalyzes the fourth enzymatic step in *de novo* pyrimidine biosynthesis. *De novo* pyrimidine synthesis is a critical metabolic pathway for nucleic acid synthesis and is a target for various cancer chemotherapy agents. Additionally, DHODH is functionally connected to the respiratory chain, delivering electrons to ubiquinone. DHODH contains a bipartite signal at the N-terminus that regulates passage into the mitochondrial inner membrane. The inhibition of COX (cytochrome c oxidase) by nitric oxide (NO) indirectly inhibits DHODH activity. The inhibition of DHODH has an immunosuppressive and an antiproliferative effect on diseases such as rheumatoid arthritis.

REFERENCES

1. Barnes, T., et al. 1993. Regional mapping of the gene encoding dihydroorotate dehydrogenase, an enzyme involved in UMP synthesis, electron transport, and superoxide generation, to human chromosome region 16q22. Somat. Cell Mol. Genet. 19: 405-411.
2. Copeland, R.A., et al. 1995. Recombinant human dihydroorotate dehydrogenase: expression, purification, and characterization of a catalytically functional truncated enzyme. Arch. Biochem. Biophys. 323: 79-86.
3. Knecht, W., et al. 1996. Functional expression of a fragment of human dihydroorotate dehydrogenase by means of the baculovirus expression vector system, and kinetic investigation of the purified recombinant enzyme. Eur. J. Biochem. 240: 292-301.
4. Beuneu, C., et al. 2000. Indirect inhibition of mitochondrial dihydroorotate dehydrogenase activity by nitric oxide. Free Radic. Biol. Med. 28: 1206-1213.
5. Dietz, C., et al. 2000. Immunocytochemical detection of mitochondrial dihydroorotate dehydrogenase in human spermatozoa. Int. J. Androl. 23: 294-299.

CHROMOSOMAL LOCATION

Genetic locus: DHODH (human) mapping to 16q22.2; Dhodh (mouse) mapping to 8 D3.

SOURCE

DHODH (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of DHODH 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.

STORAGE

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

APPLICATIONS

DHODH (H-300) is recommended for detection of DHODH 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). DHODH (H-300) is also recommended for detection of DHODH in additional species, including equine, canine and bovine.

Suitable for use as control antibody for DHODH siRNA (h): sc-77141, DHODH siRNA (m): sc-77142, DHODH shRNA Plasmid (h): sc-77141-SH, DHODH shRNA Plasmid (m): sc-77142-SH, DHODH shRNA (h) Lentiviral Particles: sc-77141-V and DHODH shRNA (m) Lentiviral Particles: sc-77142-V.

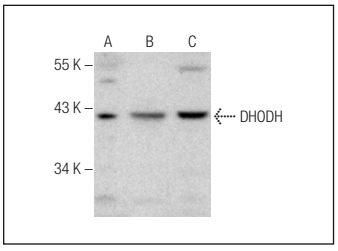
Molecular Weight of DHODH: 43 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, SK-BR-3 cell lysate: sc-2218 or human kidney extract: sc-363764.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



DHODH (H-300): sc-98570. Western blot analysis of DHODH expression in THP-1 (**A**) and SK-BR-3 (**B**) whole cell lysates and human kidney tissue extract (**C**).

RESEARCH USE

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