

DCTD (F-9): sc-376659

BACKGROUND

DCTD (deoxycytidylate deaminase), also known as dCMP deaminase, is a 178 amino acid allosteric enzyme that exists as a homohexamer and belongs to the cytidine and deoxycytidylate deaminase protein family. Using zinc as a cofactor, DCTD catalyzes the deamination of dCMP to dUMP, thereby producing the nucleotide substrate (dUMP) that is used by thymidylate synthase (TS). TS uses 5,10-methyl-enetetrahydrofolate (methylene-THF) and dUMP in the synthesis of 2'-deoxythymidine-5'-monophosphate (dTTP), an essential precursor for DNA biosynthesis. Due to its role in the synthesis of dUMP, DCTD plays an important role in the creation of DNA. The activity of DCTD is regulated by the presence of dCTP and dTTP, two end products in the DCTD metabolic pathway. Multiple isoforms of DCTD are expressed due to alternative splicing events.

REFERENCES

1. Tyrsted, G., et al. 1987. Deoxycytidylate deaminase activity in non-stimulated and phytohemagglutinin-stimulated human lymphocytes, and in leukemic cells. *Mol. Cell. Biochem.* 76: 27-34.
2. Weiner, K.X., et al. 1993. Primary structure of human deoxycytidylate deaminase and overexpression of its functional protein in *Escherichia coli*. *J. Biol. Chem.* 268: 12983-12989.
3. Weiner, K.X., et al. 1995. Chromosomal location and structural organization of the human deoxycytidylate deaminase gene. *J. Biol. Chem.* 270: 18727-18729.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607638. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: DCTD (human) mapping to 4q35.1; Dctd (mouse) mapping to 8 B1.2.

SOURCE

DCTD (F-9) is a mouse monoclonal antibody raised against amino acids 1-178 representing full length DCTD of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DCTD (F-9) is available conjugated to agarose (sc-376659 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376659 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376659 PE), fluorescein (sc-376659 FITC), Alexa Fluor® 488 (sc-376659 AF488), Alexa Fluor® 546 (sc-376659 AF546), Alexa Fluor® 594 (sc-376659 AF594) or Alexa Fluor® 647 (sc-376659 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376659 AF680) or Alexa Fluor® 790 (sc-376659 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

DCTD (F-9) is recommended for detection of DCTD 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DCTD siRNA (h): sc-89286, DCTD siRNA (m): sc-142907, DCTD shRNA Plasmid (h): sc-89286-SH, DCTD shRNA Plasmid (m): sc-142907-SH, DCTD shRNA (h) Lentiviral Particles: sc-89286-V and DCTD shRNA (m) Lentiviral Particles: sc-142907-V.

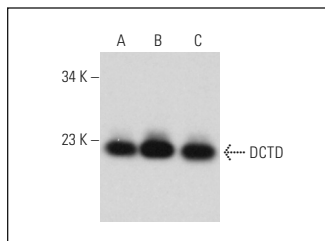
Molecular Weight of DCTD: 20 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, U-87 MG cell lysate: sc-2411 or WI-38 whole cell lysates.

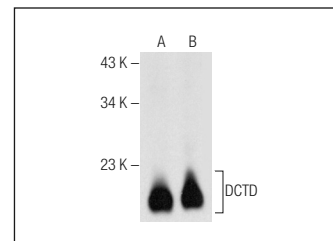
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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.

DATA



DCTD (F-9): sc-376659. Western blot analysis of DCTD expression in K-562 (A), HEL 92.1.7 (B) and U-87 MG (C) whole cell lysates.



DCTD (F-9): sc-376659. Western blot analysis of DCTD expression in WI-38 (A) and K-562 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Martínez-Arribas, B., et al. 2020. DCTPP1 prevents a mutator phenotype through the modulation of dCTP, dTTP and dUTP pools. *Cell. Mol. Life Sci.* 77: 1645-1660.

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.