SANTA CRUZ BIOTECHNOLOGY, INC.

# DCTD (22D12): sc-130367

## 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 (dTMP), an essential precursor for DNA biosynthesis. Due to its role in the synthesis of dUMP, DCTC 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/
5. Rush, J., et al. 2005. Immunoaffinity profiling of tyrosine phosphorylation in cancer cells. Nat. Biotechnol. 23: 94-101.
6. Gilbert, J.A., et al. 2006. Gemcitabine pharmacogenomics: cytidine deaminase and deoxycytidylate deaminase gene resequencing and functional genomics. Clin. Cancer Res. 12: 1794-1803.


## CHROMOSOMAL LOCATION

Genetic locus: DCTD (human) mapping to 4q35.1.

## SOURCE

DCTD (22D12) is a mouse monoclonal antibody raised against recombinant DCTD of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_3$ in 1.0 ml 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.

## RESEARCH USE

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

## APPLICATIONS

DCTD (22D12) is recommended for detection of DCTD of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

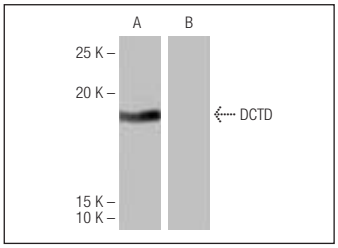
Molecular Weight of DCTD: 20 kDa.

Positive Controls: human placenta tissue extract.

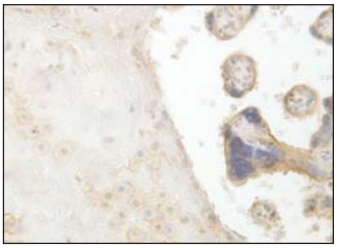
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## DATA




DCTD (22D12): sc-130367. Western blot analysis of DCTD expression in human DCTD transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.



DCTD (22D12): sc-130367. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane localization.

## PROTOCOLS

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