SANTA CRUZ BIOTECHNOLOGY, INC.

dNT-1 (C-10): sc-390041

BACKGROUND

Deoxyribonucleotidases are catabolic proteins that regulate intracellular deoxyribonucleoside triphosphate pools through substrate cycles. The various substrate specificities of deoxyribonucleotidases suggests that these enzymes have different functions in nucleotide metabolism. For example, dNT-2 is a mitochondrial specific enzyme that regulates a thymidine/dTMP substrate cycle by catalyzing the dephosphorylation of 5'- and 2'(3')-phosphates of uracil and thymine, thereby regulating the size of the intramitochondrial dTTP pool. Human dNT-1 is a cytosolic enzyme that regulates pyrimidine nucleotide pools. Human dNT-2 contains a mitochondrial leader peptide, providing the structural basis for two-step processing during import into the mitochondrial matrix. Mitochondrial dNT-2 is 52% identical to cytosolic deoxyribonucleotidase (dNT-1) and the two enzymes share many catalytic properties, however dNT-2 shows a more narrow substrate specificity. The human dNT-2 gene maps to chromosome 17p11.2, which is also a critical region for the Smith-Magenis syndrome, suggesting that dNT-2 may be involved in the etiology of this hereditary disease.

REFERENCES

1. Rampazzo, C., et al. 2000. Mammalian 5'(3')-deoxyribonucleotidase, cDNA cloning, and overexpression of the enzyme in *Escherichia coli* and mammalian cells. J. Biol. Chem. 275: 5409-5415.
2. Rampazzo, C., et al. 2000. A deoxyribonucleotidase in mitochondria: involvement in regulation of dNTP pools and possible link to genetic disease. Proc. Natl. Acad. Sci. USA 97: 8239-8244.
3. Gazziola, C., et al. 2001. Cytosolic high K_m 5'-nucleotidase and 5'(3')-deoxyribonucleotidase in substrate cycles involved in nucleotide metabolism. J. Biol. Chem. 276: 6185-6190.

CHROMOSOMAL LOCATION

Genetic locus: NT5C (human) mapping to 17q25.1; Nt5c (mouse) mapping to 11 E2.

SOURCE

dNT-1 (C-10) is a mouse monoclonal antibody raised against amino acids 129-176 mapping within an internal region of dNT-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

dNT-1 (C-10) is available conjugated to agarose (sc-390041 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390041 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390041 PE), fluorescein (sc-390041 FITC), Alexa Fluor® 488 (sc-390041 AF488), Alexa Fluor® 546 (sc-390041 AF546), Alexa Fluor® 594 (sc-390041 AF594) or Alexa Fluor® 647 (sc-390041 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390041 AF680) or Alexa Fluor® 790 (sc-390041 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

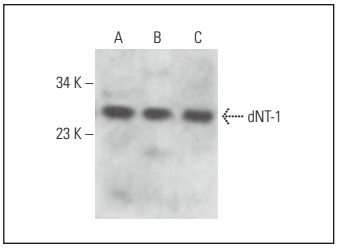
dNT-1 (C-10) is recommended for detection of dNT-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 dNT-1 siRNA (h): sc-38995, dNT-1 siRNA (m): sc-38996, dNT-1 shRNA Plasmid (h): sc-38995-SH, dNT-1 shRNA Plasmid (m): sc-38996-SH, dNT-1 shRNA (h) Lentiviral Particles: sc-38995-V and dNT-1 shRNA (m) Lentiviral Particles: sc-38996-V.

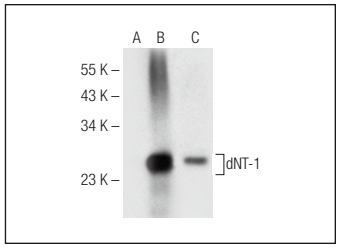
Molecular Weight of dNT-1 isoforms: 23/13 kDa.

Positive Controls: dNT-1 (m): 293T Lysate: sc-125261, HL-60 whole cell lysate: sc-2209 or Hep G2 cell lysate: sc-2227.

DATA



dNT-1 (C-10): sc-390041. Western blot analysis of dNT-1 expression in Hep G2 (**A**), HL-60 (**B**) and RAW 264.7 (**C**) whole cell lysates.



dNT-1 (C-10): sc-390041. Western blot analysis of dNT-1 expression in non-transfected: sc-117752 (**A**) and mouse dNT-1 transfected: sc-125261 (**B**) 293T whole cell lysates and human liver tissue extract (**C**).

SELECT PRODUCT CITATIONS

1. Mori, R., et al. 2019. The inhibition of thymidine phosphorylase can reverse acquired 5FU-resistance in gastric cancer cells. Gastric Cancer 22: 497-505.
2. Suetsugu, T., et al. 2021. Mechanism of acquired 5FU resistance and strategy for overcoming 5FU resistance focusing on 5FU metabolism in colon cancer cell lines. Oncol. Rep. 45: 27.
3. Mori, R., et al. 2022. The mechanism underlying resistance to 5-fluorouracil and its reversal by the inhibition of thymidine phosphorylase in breast cancer cells. Oncol. Lett. 24: 311.

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.