SANTA CRUZ BIOTECHNOLOGY, INC.

dNT-1 (m) 293T Lysate: sc-125261

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., Johansson, M., Gallinaro, L., Ferraro, P., Hellman, U., Karlsson, A., Reichard, P. and Bianchi, V. 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., Gallinaro, L., Milanesi, E., Frigimelica, E., Reichard, P. and Bianchi, V. 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., Ferraro, P., Moras, M., Reichard, P. and Bianchi, V. 2001. Cytosolic high K(m) 5'-nucleotidase and 5'(3')-deoxyribonucleotidase in substrate cycles involved in nucleotide metabolism. J. Biol. Chem. 276: 6185-6190.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605292. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. LocusLink Report (LocusID: 56953). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Nt5c (mouse) mapping to 11 E2.

PRODUCT

dNT-1 (m): 293T Lysate represents a lysate of mouse dNT-1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

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.

PROTOCOLS

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

APPLICATIONS

dNT-1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive dNT-1 antibodies. Recommended use: 10-20 µl per lane.

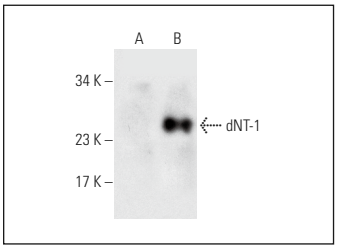
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

dNT-1 (F-9): sc-271972 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse dNT-1 expression in dNT-1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

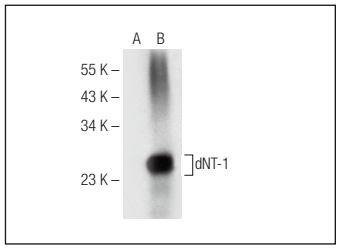
RECOMMENDED SUPPORT REAGENTS

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



dNT-1 (F-9): sc-271972. 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.



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.

RESEARCH USE

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