SANTA CRUZ BIOTECHNOLOGY, INC.

dNT-2 (E-20): sc-18020

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: NT5M (human) mapping to 17p11.2.

SOURCE

dNT-2 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of dNT-2 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.

Blocking peptide available for competition studies, sc-18020 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

dNT-2 (E-20) is recommended for detection of dNT-2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-2 siRNA (h): sc-38997, dNT-2 shRNA Plasmid (h): sc-38997-SH and dNT-2 shRNA (h) Lentiviral Particles: sc-38997-V.

Molecular Weight of dNT-2: 26 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.