SANTA CRUZ BIOTECHNOLOGY, INC.

DNC (Q-15): sc-161536

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the mitochondrial carrier family transport a variety of metabolites across the inner mitochondrial membrane. DNC, also known as SLC25A19 (solute carrier family 25 member 19) or MUP1 (mitochondrial uncoupling protein 1), is a 320 amino acid member of the mitochondrial carrier protein family. DNC acts as a mitochondrial transporter which mediates the uptake of thiamine pyrophosphate (ThPP) into the mitochondria. DNC contains three Solcar repeats and is expressed in all tissue except placenta. Highest levels of DNC are found in spleen, lung, testis, brain, colon and kidney. Defects in the gene that encodes DNC are the cause of microcephaly Amish type (MCPHA). MCPHA is an autosomal recessive metabolic disorder characterized by extreme 2-ketoglutaric aciduria, severe congenital microcephaly and death within the first year of life.

REFERENCES

1. Iacobazzi, V., et al. 2001. Genomic organization and mapping of the gene (SLC25A19) encoding the human mitochondrial deoxynucleotide carrier (DNC). Cytogenet. Cell Genet. 93: 40-42.
2. Dolce, V., et al. 2001. The human mitochondrial deoxynucleotide carrier and its role in the toxicity of nucleoside antivirals. Proc. Natl. Acad. Sci. USA 98: 2284-2288.
3. Rosenberg, M.J., et al. 2002. Mutant deoxynucleotide carrier is associated with congenital microcephaly. Nat. Genet. 32: 175-179.
4. Lam, W., et al. 2005. Expression of deoxynucleotide carrier is not associated with the mitochondrial DNA depletion caused by anti-HIV dideoxynucleoside analogs and mitochondrial dNTP uptake. Mol. Pharmacol. 67: 408-416.
5. Lindhurst, M.J., et al. 2006. Knockout of Slc25a19 causes mitochondrial thiamine pyrophosphate depletion, embryonic lethality, CNS malformations, and anemia. Proc. Natl. Acad. Sci. USA 103: 15927-15932.
6. Kang, J., et al. 2008. The evidence that the DNC (SLC25A19) is not the mitochondrial deoxyribonucleotide carrier. Mitochondrion 8: 103-108.
7. Spiegel, R., et al. 2009. SLC25A19 mutation as a cause of neuropathy and bilateral striatal necrosis. Ann. Neurol. 66: 419-424.

CHROMOSOMAL LOCATION

Genetic locus: Slc25a19 (mouse) mapping to 11 E2.

SOURCE

DNC (Q-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of DNC of mouse 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-161536 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DNC (Q-15) is recommended for detection of DNC of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DNC (Q-15) is also recommended for detection of DNC in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for DNC siRNA (m): sc-143119, DNC shRNA Plasmid (m): sc-143119-SH and DNC shRNA (m) Lentiviral Particles: sc-143119-V.

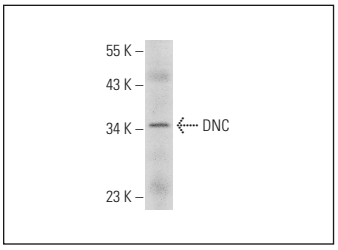
Molecular Weight of DNC: 36 kDa.

Positive Controls: mouse cerebellum extract: sc-2403.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



DNC (Q-15): sc-161536. Western blot analysis of DNC expression in mouse cerebellum tissue extract.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

RESEARCH USE

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