SANTA CRUZ BIOTECHNOLOGY, INC.

NMNAT-1 (N-17): sc-30841

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nicotinamide adenine dinucleotide (NMNAT) is an essential cofactor involved in fundamental processes in cell metabolism. NMNAT plays a key role in NAD^+ biosynthesis, catalyzing the condensation of nicotinamide mononucleotide and ATP, and yielding NAD^+ and pyrophosphate. NMNAT appears to be a substrate of nuclear kinases and contains at least three potential phosphorylation sites. The interaction of NMNAT with nuclear proteins is likely to be modulated by phosphorylation. NMNAT is widely expressed with highest levels in skeletal muscle, heart, liver and kidney.

REFERENCES

1. D'Angelo, I., et al. 2000. Structure of nicotinamide mononucleotide adenyl-yltransferase: a key enzyme in NAD^+ biosynthesis. Structure 8: 993-1004.
2. Schweiger, M., et al. 2001. Characterization of recombinant human nicotinamide mononucleotide adenylyl transferase (NMNAT), a nuclear enzyme essential for NAD synthesis. FEBS Lett. 492: 95-100.
3. Mack, T.G., et al. 2001. Wallerian degeneration of injured axons and synapses is delayed by a Ube4b/NMNAT chimeric gene. Nat. Neurosci. 4: 1199-1206.
4. Werner, E., et al. 2002. Crystallization and preliminary X-ray analysis of human nicotinamide mononucleotide adenylyltransferase (NMNAT). Acta Crystallogr. D Biol. Crystallogr. 58: 140-142.
5. Gillingwater, T.H., et al. 2002. Age-dependent synapse withdrawal at axotomised neuromuscular junctions in Wld(s) mutant and Ube4b/NMNAT transgenic mice. J. Physiol. 543: 739-755.

CHROMOSOMAL LOCATION

Genetic locus: NMNAT1 (human) mapping to 1p36.22, NMNAT3 (human) mapping to 3q23; Nmnat1 (mouse) mapping to 4 E2, Nmnat3 (mouse) mapping to 9 E3.3.

SOURCE

NMNAT-1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NMNAT-1 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-30841 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

NMNAT-1 (N-17) is recommended for detection of NMNAT-1 and, to a lesser extent, NMNAT-3 of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with UFD2/D4COLE1E (accession #10442019) fusion protein of mouse and rat origin.

NMNAT-1 (N-17) is also recommended for detection of NMNAT-1 and, to a lesser extent, NMNAT-3 in additional species, including equine, canine, bovine and avian.

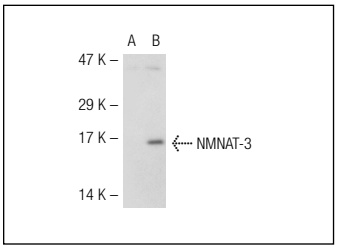
Molecular Weight of NMNAT-1: 33 kDa.

Positive Controls: NMNAT-3 (m): 293T Lysate: sc-122083, Hep G2 nuclear extract: sc-364819 or HeLa nuclear extract: sc-2120.

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



NMNAT-1 (N-17): sc-30841. Western blot analysis of NMNAT-3 expression in non-transfected: sc-117752 (**A**) and mouse transfected: sc-122083 (**B**) 293T whole cell lysates.

RESEARCH USE

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