

NMNAT-3 (D-10): sc-390433



The Power to Question

BACKGROUND

NMNAT proteins are essential cofactors involved in the fundamental processes of cell metabolism. They belong to the eukaryotic NMN adenylyltransferase family. NMNATs participate in the synthesis of NAD⁺ by catalyzing the condensation of nicotinamide mononucleotide and ATP. The presence of magnesium and other divalent cations increases their enzymatic activity. The interaction of NMNATs with nuclear proteins is likely to be modulated by phosphorylation. NMNAT proteins contain at least three potential phosphorylation sites and may act as substrates for nuclear kinases. NMNAT-3 (nicotinamide mononucleotide adenylyltransferase 3), also designated PNAT3, is a 252 amino acid protein that localizes to the mitochondria. Highly expressed in the spleen and lungs, NMNAT-3 is able to form homotetramers. Two isoforms exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: NMNAT3 (human) mapping to 3q23; Nmnat3 (mouse) mapping to 9 E3.3.

SOURCE

NMNAT-3 (D-10) is a mouse monoclonal antibody raised against amino acids 151-230 mapping near the C-terminus of NMNAT-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NMNAT-3 (D-10) is available conjugated to agarose (sc-390433 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390433 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390433 PE), fluorescein (sc-390433 FITC), Alexa Fluor® 488 (sc-390433 AF488), Alexa Fluor® 546 (sc-390433 AF546), Alexa Fluor® 594 (sc-390433 AF594) or Alexa Fluor® 647 (sc-390433 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390433 AF680) or Alexa Fluor® 790 (sc-390433 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

NMNAT-3 (D-10) is recommended for detection of NMNAT-3 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 NMNAT-3 siRNA (h): sc-62695, NMNAT-3 siRNA (m): sc-62696, NMNAT-3 shRNA Plasmid (h): sc-62695-SH, NMNAT-3 shRNA Plasmid (m): sc-62696-SH, NMNAT-3 shRNA (h) Lentiviral Particles: sc-62695-V and NMNAT-3 shRNA (m) Lentiviral Particles: sc-62696-V.

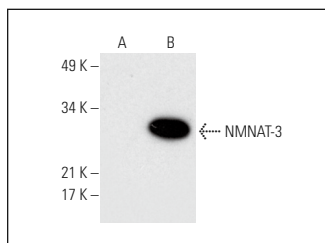
Molecular Weight of NMNAT-3: 28 kDa.

Positive Controls: NMNAT-3 (m): 293T Lysate: sc-122083 or T-47D cell lysate: sc-2293.

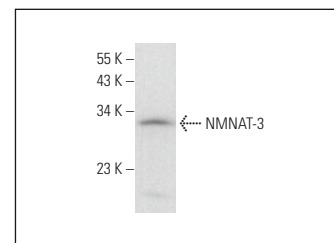
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BPFITC: sc-516140 or m-IgGκ BPP-E: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NMNAT-3 (D-10): sc-390433. Western blot analysis of NMNAT-3 expression in non-transfected: sc-117752 (A) and mouse NMNAT-3 transfected: sc-122083 (B) 293T whole cell lysates.



NMNAT-3 (D-10): sc-390433. Western blot analysis of NMNAT-3 expression in T-47D whole cell lysate.

SELECT PRODUCT CITATIONS

- VanLinden, M.R., et al. 2015. Subcellular distribution of NAD⁺ between cytosol and mitochondria determines the metabolic profile of human cells. *J. Biol. Chem.* 290: 27644-27659.
- Gambini, V., et al. 2018. *In vitro* and *in vivo* studies of gold(I) azolate/phosphane complexes for the treatment of basal like breast cancer. *Eur. J. Med. Chem.* 155: 418-427.
- Fan, M., et al. 2020. Overexpression of the histidine triad nucleotide-binding protein 2 protects cardiac function in the adult mice after acute myocardial infarction. *Acta Physiol.* 228: e13439.
- Yagi, M., et al. 2021. Mitochondrial translation deficiency impairs NAD⁺-mediated lysosomal acidification. *EMBO J.* 40: e105268.
- Hung, S.W., et al. 2021. An *in-silico*, *in-vitro* and *in-vivo* combined approach to identify NMNATs as potential protein targets of ProEGCG for treatment of endometriosis. *Front. Pharmacol.* 12: 714790.

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.