SANTA CRUZ BIOTECHNOLOGY, INC.

NRK1 (F-8): sc-398852

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nicotinamide adenine dinucleotide (NAD^+) is an essential cofactor involved in fundamental processes in cell metabolism. NRK1 (nicotinamide riboside kinase 1), also known as ribosylnicotinamide kinase 1, is a 199 amino acid enzyme is involved in the synthesis of NAD^+ through nicotinamide mononucleotide using nicotinamide riboside as the precursor. Nicotinamide riboside has been idenitifed as a nutrient in milk, suggesting that it is a useful compound for elevating the NAD^+ levels in humans. NRK1 also phosphorylates the anti-cancer drugs tiazofurin and 3-deazaguanosine, which converts them into toxic NAD^+ analogs and leads to the inhibition of guanine nucleotide biosynthesis. There are two isoforms of NRK1 that are produced as a result of alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: NMRK1 (human) mapping to 9q21.13; Nmrk1 (mouse) mapping to 19 B.

SOURCE

NRK1 (F-8) is a mouse monoclonal antibody raised against amino acids 38-77 mapping near the N-terminus of NRK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NRK1 (F-8) is available conjugated to agarose (sc-398852 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398852 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398852 PE), fluorescein (sc-398852 FITC), Alexa Fluor® 488 (sc-398852 AF488), Alexa Fluor® 546 (sc-398852 AF546), Alexa Fluor® 594 (sc-398852 AF594) or Alexa Fluor® 647 (sc-398852 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398852 AF680) or Alexa Fluor® 790 (sc-398852 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

NRK1 (F-8) is recommended for detection of NRK1 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 NRK1 siRNA (h): sc-92471, NRK1 siRNA (m): sc-150069, NRK1 shRNA Plasmid (h): sc-92471-SH, NRK1 shRNA Plasmid (m): sc-150069-SH, NRK1 shRNA (h) Lentiviral Particles: sc-92471-V and NRK1 shRNA (m) Lentiviral Particles: sc-150069-V.

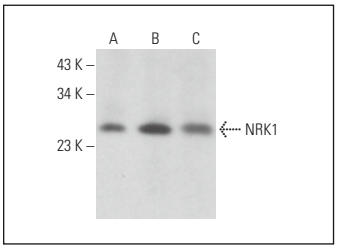
Molecular Weight of NRK1: 23 kDa.

Positive Controls: NRK1 (m): 293T Lysate: sc-122131, PC-12 cell lysate: sc-2250 or TK-1 whole cell lysate: sc-364798.

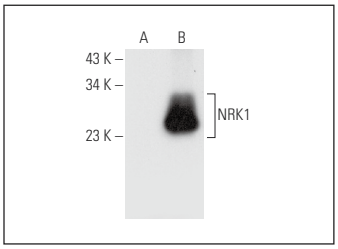
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NRK1 (F-8): sc-398852. Western blot analysis of NRK1 expression in TK-1 (**A**), PC-12 (**B**) and NIH/3T3 (**C**) whole cell lysates.



NRK1 (F-8): sc-398852. Western blot analysis of NRK1 expression in non-transfected: sc-117752 (**A**) and mouse NRK1 transfected: sc-122131 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dall, M., et al. 2018. Hepatic NAD^+ levels and NAMPT abundance are unaffected during prolonged high-fat diet consumption in C57BL/6JBomTac mice. Mol. Cell. Endocrinol. 473: 245-256.
2. Chowdhry, S., et al. 2019. NAD metabolic dependency in cancer is shaped by gene amplification and enhancer remodelling. Nature 569: 570-575.
3. De Guia, R.M., et al. 2019. Aerobic and resistance exercise training reverses age-dependent decline in NAD^+ salvage capacity in human skeletal muscle. Physiol. Rep. 7: e14139.
4. De Guia, R.M., et al. 2020. Fasting- and ghrelin-induced food intake is regulated by NAMPT in the hypothalamus. Acta Physiol. 228: e13437.
5. Carreira, A.S.A., et al. 2023. Mitochondrial rewiring drives metabolic adaptation to NAD(H) shortage in triple negative breast cancer cells. Neoplasia 41: 100903.
6. Peluso, A.A., et al. 2023. Oral supplementation of nicotinamide riboside alters intestinal microbial composition in rats and mice, but not humans. NPJ Aging 9: 7.
7. Gao, L., et al. 2023. Jian-Pi-Yi-Shen formula alleviates renal fibrosis by restoring NAD^+ biosynthesis *in vivo* and *in vitro*. Aging 16: 106-128.

STORAGE

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