

NADK (N-14): sc-103647



The Power to Question

BACKGROUND

NADK (NAD kinase) is a 446 amino acid protein that belongs to the NAD kinase family. Expressed at high levels in placenta and at moderate levels in colon, kidney, brain, heart, liver, spleen, lung, testis and stomach, NADK functions to catalyze the transfer of a phosphate group from ATP to NAD⁺, thereby generating NADP⁺. Once formed, NADP⁺ can be reduced to NADPH, which can subsequently act as an electron donor in biosynthetic reactions. Through its ability to catalyze the formation of NADP⁺, NADK is able to control the concentration of NADPH within the cell. NADK uses divalent metal cations (such as zinc and manganese) as cofactors and exhibits the highest rate of enzymatic activity at a pH of 7.5.

REFERENCES

- Lerner, F., et al. 2001. Structural and functional characterization of human NAD kinase. *Biochem. Biophys. Res. Commun.* 288: 69-74.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611616. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Turner, W.L., et al. 2004. Cloning and characterization of two NAD kinases from *Arabidopsis* identification of a calmodulin binding isoform. *Plant Physiol.* 135: 1243-1255.
- Grose, J.H., et al. 2006. Evidence that feedback inhibition of NAD kinase controls responses to oxidative stress. *Proc. Natl. Acad. Sci. USA* 103: 7601-7606.
- Pollak, N., et al. 2007. NAD kinase levels control the NADPH concentration in human cells. *J. Biol. Chem.* 282: 33562-33571.
- Singh, R., et al. 2007. Oxidative stress evokes a metabolic adaptation that favors increased NADPH synthesis and decreased NADH production in *Pseudomonas fluorescens*. *J. Bacteriol.* 189: 6665-6675.

CHROMOSOMAL LOCATION

Genetic locus: NADK (human) mapping to 1p36.33; Nadk (mouse) mapping to 4 E2.

SOURCE

NADK (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of NADK 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-103647 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.

APPLICATIONS

NADK (N-14) is recommended for detection of NADK 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).

Suitable for use as control antibody for NADK siRNA (h): sc-88094, NADK siRNA (m): sc-106280, NADK shRNA Plasmid (h): sc-88094-SH, NADK shRNA Plasmid (m): sc-106280-SH, NADK shRNA (h) Lentiviral Particles: sc-88094-V and NADK shRNA (m) Lentiviral Particles: sc-106280-V.

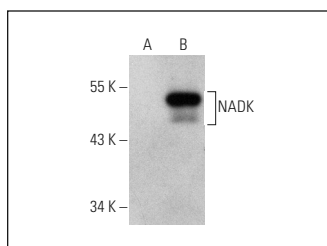
Molecular Weight of NADK: 49 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or NADK (m): 293T Lysate: sc-125682.

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



NADK (N-14): sc-103647. Western blot analysis of NADK expression in non-transfected: sc-117752 (A) and mouse NADK transfected: sc-125682 (B) 293T whole cell lysates.

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **NADK (J-07): sc-100347**, our highly recommended monoclonal alternative to NADK (N-14).