SANTA CRUZ BIOTECHNOLOGY, INC.

NIFK (18E148): sc-52904

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The structural proteins for the complex metalloenzyme nitrogenase include NIFK, NIFD and NIFH. These proteins are all necessary for archaeal and bacterial nitrogen fixation. The NIFK gene encodes the β subunit of the nitrogenase molybdenum-iron (MoFe) tetramer. NIFK localizes to the nucleolus where it interactes with the fork-head associated domain of the proliferation marker protein Ki-67 in a mitosis-specific and phosphorylation-dependent manner. NIFK is widely expressed in adult tissues, suggesting other functions in addition to its interaction with Ki-67, which is only expressed in proliferating cells.

REFERENCES

1. Steinbauer, J., Wenzel, W. and Hess, D. 1988. Nucleotide and deduced amino acid sequences of the *Klebsiella pneumoniae* NIFK gene coding for the β subunit of nitrogenase MoFe protein. Nucleic Acids Res. 16: 7199.
2. Ligon, J.M. and Nakas, J.P. 1989. Nucleotide sequence of NIFK and partial sequence of NIFD from *Frankia* species strain FaC1. Nucleic Acids Res. 16: 11843.
3. Li, J.G., Tal, S., Robinson, A.C., Dang, V. and Burgess, B.K. 1990. Analysis the NIFD and NIFK genes. J. Bacteriol. 172: 5884-5891.
4. White, T.C., Harris, G.S. and Orme-Johnson, W.H. 1992. Electrophoretic studies on the assembly of the nitrogenase molybdenum-iron protein from the *Klebsiella pneumoniae* NIFD and NIFK gene products. J. Biol. Chem. 267: 24007-24016.
5. Hirsch, A.M., McKhann, H.I., Reddy, A., Liao, J., Fang, Y. and Marshall, C.R. 1995. Assessing horizontal transfer of nifHDK genes in eubacteria: nucleotide sequence of NIFK from *Frankia* strain HFPCcl3. Mol. Biol. Evol. 12: 16-27.
6. Dominic, B., Chen, Y.B. and Zehr, J.P. 1998. Cloning and transcriptional analysis of the nifUHDK genes of *Trichodesmium sp.* IMS101 reveals stable NIFD, NIFDK and NIFK transcripts. Microbiology 144: 3359-3368.
7. Fani, R., Gallo, R. and Liò, P. 2000. Molecular evolution of nitrogen fixation: the evolutionary history of the NIFD, NIFK, NIFE, and NIFN genes. J. Mol. Evol. 51: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: NIFK (human) mapping to 2q14.3.

SOURCE

NIFK (18E148) is a mouse monoclonal antibody raised against amino acids 100-200 of NIFK of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

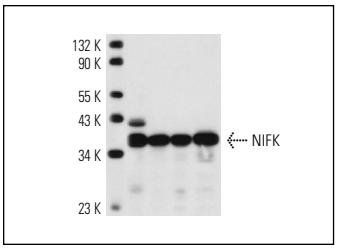
NIFK (18E148) is recommended for detection of NIFK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for NIFK siRNA (h): sc-72013, NIFK shRNA Plasmid (h): sc-72013-SH and NIFK shRNA (h) Lentiviral Particles: sc-72013-V.

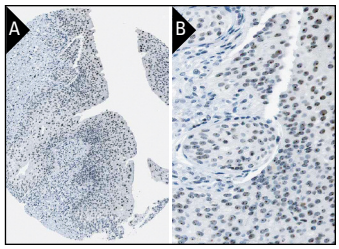
Molecular Weight of NIFK: 36 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, Ramos nuclear extract: sc-2153 or HeLa nuclear extract: sc-2120.

DATA



NIFK (18E148): sc-52904. Western blot analysis of NIFK expression in Raji whole cell lysate (**A**) and BJAB (**B**), Ramos (**C**) and HeLa (**D**) nuclear extracts.



NIFK (18E148): sc-52904. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nucleolar staining of urothelial cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

RESEARCH USE

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

PROTOCOLS

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