SANTA CRUZ BIOTECHNOLOGY, INC.

Nek4 (2631C1a): sc-81332

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NIMA was originally shown in *Aspergillus nidulans* to be necessary for entry into mitosis. NIMA-related mammalian proteins have since been identified as Nek1, Nek2, Nek3 and Nek4 (also designated STK2 or NRK2). High expression of Nek1 is seen in male and female germ cell lines of mouse. Nek2 is the closest known mammalian relative to NIMA. Like NIMA, Nek2 expression peaks at the G_2 to M phase transition. Nek3 is a predominantly cytoplasmic enzyme that was detectable in all organs studied. Levels of Nek3 seem to remain unchanged throughout the cell cycle, but appear to be elevated in G_0-arrested, quiescent fibroblasts. In developing testicular germ cells, differential patterns of expression were seen for Nek1, Nek2 and Nek4, indicating possible overlapping, but non-identical functions.

REFERENCES

1. Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G_2-specific gene that encodes a potential protein kinase. Cell 53: 237-244.
2. Letwin, K., et al. 1992. A mammalian dual specificity protein kinase, Nek1, is related to the NIMA cell cycle regulator and highly expressed in meiotic germ cells. EMBO J. 11: 3521-3531.
3. Schultz, S.J., et al. 1994. Cell cycle-dependent expression of Nek2, a novel human protein kinase related to the NIMA mitotic regulator of *Aspergillus nidulans*. Cell Growth Differ. 5: 625-635.
4. Rhee, K. and Wolgemuth, D.J. 1997. The NIMA-related kinase 2, Nek2, is expressed in specific stages of the meiotic cell cycle and associates with meiotic chromosomes. Development 124: 2167-2177.
5. Fry, A.M. and Nigg, E.A. 1997. Characterization of mammalian DNA-related kinases. Meth. Enzymol. 283: 270-282.
6. Tanaka, K. and Nigg, E.A. 1999. Cloning and characterization of the murine Nek3 protein kinase, a novel member of the NIMA family of putative cell cycle regulators. J. Biol. Chem. 274: 13491-13497.
7. Chen, A., et al. 1999. NIMA-related kinases: isolation and characterization of murine Nek3 and Nek4 cDNAs, and chromosomal localization of Nek1, Nek2 and Nek3. Gene 234: 127-137.

CHROMOSOMAL LOCATION

Genetic locus: NEK4 (human) mapping to 3p21.1; Nek4 (mouse) mapping to 14 B.

SOURCE

Nek4 (2631C1a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Nek4 of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

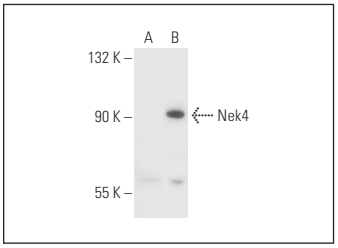
Nek4 (2631C1a) is recommended for detection of Nek4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Nek4 siRNA (h): sc-106815, Nek4 siRNA (m): sc-77382, Nek4 shRNA Plasmid (h): sc-106815-SH, Nek4 shRNA Plasmid (m): sc-77382-SH, Nek4 shRNA (h) Lentiviral Particles: sc-106815-V and Nek4 shRNA (m) Lentiviral Particles: sc-77382-V.

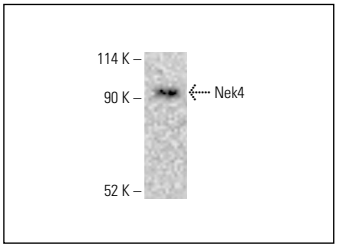
Molecular Weight of Nek4: 105 kDa.

Positive Controls: Nek4 (m): 293T Lysate: sc-121999, BT-20 cell lysate: sc-2223 or K-562 whole cell lysate: sc-2203.

DATA



Nek4 (2631C1a): sc-81332. Western blot analysis of Nek4 expression in non-transfected: sc-117752 (**A**) and mouse Nek4 transfected: sc-121999 (**B**) 293T whole cell lysates.



Nek4 (2631C1a): sc-81332. Western blot analysis of Nek4 expression in K-562 whole cell lysate. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Basei, F.L., et al. 2015. New interaction partners for Nek4.1 and Nek4.2 isoforms: from the DNA damage response to RNA splicing. Proteome Sci. 13: 11.
2. Chen, L., et al. 2022. Anesthetic propofol suppresses growth and metastasis of lung adenocarcinoma *in vitro* through downregulating circ-MEMO1-miR-485-3p-Nek4 ceRNA axis. Histol. Histopathol. 37: 1213-1226.
3. Pavan, I.C.B., et al. 2023. Nek6 regulates redox balance and DNA damage response in DU-145 prostate cancer cells. Cells 12: 256.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

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