

Nek7 (P-16): sc-50757

BACKGROUND

NIMA was originally shown in *Aspergillus nidulans* to be necessary for entry into mitosis. NIMA-related mammalian proteins have since been identified as Nek1-4 and Nek6-9. High expression of Nek1 is seen in male and female germ cell lines of mice. Nek2 is the closest known mammalian relative to NIMA. Like NIMA, Nek2 expression peaks at the G₂ to M phase transition. Nek3, Nek6, Nek7 and Nek9 also regulate mitosis. Nek1 and Nek8 have been linked with polycystic kidney disease, and Nek4 expression is present in most primary carcinomas. Nek7 localizes to the cytoplasm and is highly expressed in lung, testis, muscle, spleen, heart, liver, leukocyte and brain. Lower expression of Nek7 is detected in the ovary, prostate and kidney, while no expression is seen in small intestine.

REFERENCES

- Osmani, S.A., Pu, R.T. and Morris, N.R. 1988. Mitotic induction and maintenance by overexpression of a G₂-specific gene that encodes a potential protein kinase. *Cell* 53: 237-244.
- Letwin, K., Mizzen, L., Motro, B., Ben-David, Y., Bernstein, A. and Pawson, T. 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.
- 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.
- Schultz, S.J., Fry, A.M., Sutterlin, C., Ried, T. and Nigg, E.A. 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.
- Fry, A.M. and Nigg, E.A. 1997. Characterization of mammalian DNA-related kinases. *Methods Enzymol.* 283: 270-282.
- 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.
- Chen, A., Yanai, A., Arama, E., Kilfin, G. and Motro, B. 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.
- Kimura, M. and Okano, Y. 2001. Identification and assignment of the human NIMA-related protein kinase 7 gene (NEK7) to human chromosome 1q31.3. *Cytogenet. Cell Genet.* 94: 33-38.

CHROMOSOMAL LOCATION

Genetic locus: NEK7 (human) mapping to 1q31.3; Nek7 (mouse) mapping to 1 E4.

SOURCE

Nek7 (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Nek7 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-50757 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nek7 (P-16) is recommended for detection of Nek7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Nek7 (P-16) is also recommended for detection of Nek7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Nek7 siRNA (h): sc-61174, Nek7 siRNA (m): sc-61175, Nek7 shRNA Plasmid (h): sc-61174-SH, Nek7 shRNA Plasmid (m): sc-61175-SH, Nek7 shRNA (h) Lentiviral Particles: sc-61174-V and Nek7 shRNA (m) Lentiviral Particles: sc-61175-V.

Molecular Weight of Nek7: 35 kDa.

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) 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.

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.

PROTOCOLS

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


 MONOS
 Satisfaction
 Guaranteed

Try **Nek7 (A-12): sc-398439** or **Nek7 (B-5): sc-393539**, our highly recommended monoclonal alternatives to Nek7 (P-16).