

Nek4 (H-31): sc-292488

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 G₂ 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 G₀-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

- Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G₂-specific gene that encodes a potential protein kinase. *Cell* 53: 237-244.
- 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.
- 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 Diff.* 5: 625-635.
- 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.
- Fry, A.M. and Nigg, E.A. 1997. Characterization of mammalian DNA-related kinases. *Meth. 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., 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 (H-31) is a rabbit polyclonal antibody raised against amino acids 33-63 mapping near the N-terminus of Nek4 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.

RESEARCH USE

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

APPLICATIONS

Nek4 (H-31) 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), 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).

Nek4 (H-31) is also recommended for detection of Nek4 in additional species, including equine, canine, porcine and avian.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.

PROTOCOLS

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