

Nek2 (G-5): sc-55602

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

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- 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 Differ.* 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. *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., 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: NEK2 (human) mapping to 1q32.3; Nek2 (mouse) mapping to 1 H6.

SOURCE

Nek2 (G-5) is a mouse monoclonal antibody raised against amino acids 211-445 mapping at the C-terminus of Nek2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain 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

Nek2 (G-5) is recommended for detection of Nek2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 Nek2 siRNA (h): sc-43960, Nek2 siRNA (m): sc-44876, Nek2 shRNA Plasmid (h): sc-43960-SH, Nek2 shRNA Plasmid (m): sc-44876-SH, Nek2 shRNA (h) Lentiviral Particles: sc-43960-V and Nek2 shRNA (m) Lentiviral Particles: sc-44876-V.

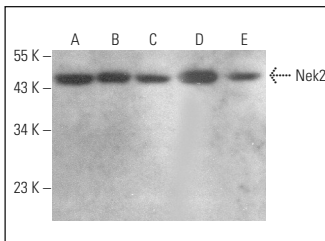
Molecular Weight of Nek2: 47 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or HeLa nuclear extract: sc-2120.

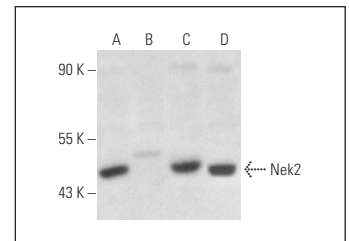
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nek2 (G-5): sc-55602. Western blot analysis of Nek2 expression in K-562 (A), Jurkat (B), A-431 (C) and F9 (D) whole cell lysates and rat testis tissue extract (E).



Nek2 (G-5): sc-55602. Western blot analysis of Nek2 expression in HeLa (A), KNRK (B) and K-562 (C) whole cell lysates and HeLa (C) nuclear extract.

STORAGE

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

CONJUGATES

See **Nek2 (D-8): sc-55601** for Nek2 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.