

# Nek11 (36JK): sc-100429

## BACKGROUND

NIMA (never in mitosis gene A) was originally discovered in *Aspergillus nidulans* as a protein that is necessary for entry into mitosis. Several NIMA-related mammalian proteins have since been identified. Nek11 (NIMA-related kinase 11) is a member of the NIMA subfamily of kinases that functions as a manganese- or magnesium-dependent serine/threonine protein kinase. Kinases of the NIMA subfamily are typically involved in genotoxic stress response and DNA replication. Expressed at low levels in trachea, lung, uterus, appendix and cerebellum, Nek11 localization is cell-cycle regulated; it is found in the nucleus of interphase cells and the polar microtubule of prometaphase and metaphase cells. Nek11 is present in the cell in increasing concentrations from S to G<sub>2</sub>/M phase and is believed to play a role in the S phase checkpoint. Two isoforms exist for Nek11, due to alternative splicing events. The long and short isoforms are designated Nek11L and Nek11S, respectively.

## REFERENCES

- Osmani, S.A., Pu, R.T. and Morris, N.R. 1988. Mitotic induction and maintenance by overexpression of a G<sub>2</sub>-specific gene that encodes a potential protein kinase. *Cell* 53: 237-244.
- Fry, A.M., Schultz, S.J., Bartek, J. and Nigg, E.A. 1995. Substrate specificity and cell cycle regulation of the Nek2 protein kinase, a potential human homolog of the mitotic regulator NIMA of *Aspergillus nidulans*. *J. Biol. Chem.* 270: 12899-12905.
- Noguchi, K., Fukazawa, H., Murakami, Y. and Uehara, Y. 2002. Nek11, a new member of the NIMA family of kinases, involved in DNA replication and genotoxic stress responses. *J. Biol. Chem.* 277: 39655-39665.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609779. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Belham, C., Roig, J., Caldwell, J.A., Aoyama, Y., Kemp, B.E., Comb, M. and Avruch, J. 2003. A mitotic cascade of NIMA family kinases. Nerc1/Nek9 activates the Nek6 and Nek7 kinases. *J. Biol. Chem.* 278: 34897-34909.
- Noguchi, K., Fukazawa, H., Murakami, Y. and Uehara, Y. 2004. Nucleolar Nek11 is a novel target of Nek2A in G<sub>1</sub>/S-arrested cells. *J. Biol. Chem.* 279: 32716-32727.
- O'Regan, L., Blot, J. and Fry, A.M. 2007. Mitotic regulation by NIMA-related kinases. *Cell Div.* 2: 25.

## CHROMOSOMAL LOCATION

Genetic locus: NEK11 (human) mapping to 3q22.1.

## SOURCE

Nek11 (36JK) is a mouse monoclonal antibody raised against recombinant Nek11 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Nek11 (36JK) is recommended for detection of Nek11 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), immunohistochemistry (including paraffin-embedded sections) (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 Nek11 siRNA (h): sc-78268, Nek11 shRNA Plasmid (h): sc-78268-SH and Nek11 shRNA (h) Lentiviral Particles: sc-78268-V.

Molecular Weight of Nek11L: 75 kDa.

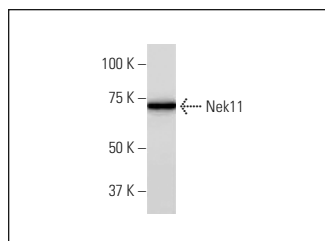
Molecular Weight of Nek11S: 59 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209.

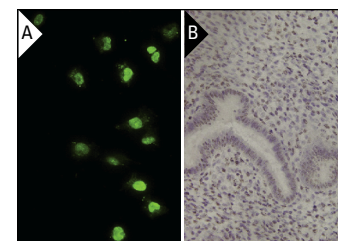
## RECOMMENDED SUPPORT REAGENTS

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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Nek11 (36JK): sc-100429. Western blot analysis of Nek11 expression in HL-60 whole cell lysate.



Nek11 (36JK): sc-100429. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human endometrium tissue (B) showing nuclear localization.

## 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.