

# Nek5 (E-18): sc-84527

## BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. Nek5 (NimA-related protein kinase 5) is a 708 amino acid protein that is related to NIMA, a protein that was originally discovered in *Aspergillus nidulans* and is necessary for entry into mitosis. One of several members of the Ser/Thr protein kinase super family, Nek5 contains one protein kinase domain through which it catalyzes the ATP-dependent phosphorylation of target proteins. Like NIMA, Nek5 may be involved in mitotic regulation and cell cycle control.

## REFERENCES

- Hanks, S.K., Quinn, A.M. and Hunter, T. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science* 241: 42-52.
- Lu, K.P. and Hunter, T. 1995. Evidence for a NIMA-like mitotic pathway in vertebrate cells. *Cell* 81: 413-424.
- Pu, R.T. and Osmani, S.A. 1995. Mitotic destruction of the cell cycle regulated NIMA protein kinase of *Aspergillus nidulans* is required for mitotic exit. *EMBO J.* 14: 995-1003.
- Lu, K.P. and Hunter, T. 1995. The NIMA kinase: a mitotic regulator in *Aspergillus nidulans* and vertebrate cells. *Prog. Cell Cycle Res.* 1: 187-205.
- Li, J.J. and Li, S.A. 2006. Mitotic kinases: the key to duplication, segregation, and cytokinesis errors, chromosomal instability, and oncogenesis. *Pharmacol. Ther.* 111: 974-984.
- O'regan, L., Blot, J. and Fry, A.M. 2007. Mitotic regulation by NIMA-related kinases. *Cell Div.* 2: 25.
- Vigneault, F., Lachance, D., Cloutier, M., Pelletier, G., Levasseur, C. and Séguin, A. 2007. Members of the plant NIMA-related kinases are involved in organ development and vascularization in poplar, *Arabidopsis* and rice. *Plant J.* 51: 575-588.
- Salaun, P., Rannou, Y. and Prigent, C. 2008. Cdk1, Plks, Auroras, and Neks: the mitotic bodyguards. *Adv. Exp. Med. Biol.* 617: 41-56.
- White, M.C. and Quarumby, L.M. 2008. The NIMA-family kinase, Nek1 affects the stability of centrosomes and ciliogenesis. *BMC Cell Biol.* 9: 29.

## CHROMOSOMAL LOCATION

Genetic locus: NEK5 (human) mapping to 13q14.3.

## SOURCE

Nek5 (E-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of Nek5 of human origin.

## STORAGE

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

## 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-84527 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Nek5 (E-18) is recommended for detection of Nek5 of 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).

Nek5 (E-18) is also recommended for detection of Nek5 in additional species, including equine.

Suitable for use as control antibody for Nek5 siRNA (h): sc-75895, Nek5 shRNA Plasmid (h): sc-75895-SH and Nek5 shRNA (h) Lentiviral Particles: sc-75895-V.

Molecular Weight of Nek5: 81 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

## 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.


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Try **Nek5 (G-12): sc-515457** or **Nek5 (OC-65): sc-130492**, our highly recommended monoclonal alternatives to Nek5 (E-18).