Nek5 (OC-65): sc-130492

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threo-nine 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 ser-ine/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

1. 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.

2. Lu, K.P. and Hunter, T. 1995. Evidence for a NIMA-like mitotic pathway in vertebrate cells. Cell 81: 413-424.

3. Pu, R.T. and Osmani, S.A. 1995. Mitotic destruction of the cell cycle regu-lated NIMA protein kinase of *Aspergillus nidulans* is required for mitotic exit. EMBO J. 14: 995-1003.

4. 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.

5. Li, J.J. and Li, S.A. 2006. Mitotic kinases: the key to duplication, segrega-tion, and cytokinesis errors, chromosomal instability, and oncogenesis. Pharmacol. Ther. 111: 974-984.

6. O'regan, L., Blot, J. and Fry, A.M. 2007. Mitotic regulation by NIMA-related kinases. Cell Div. 2: 25.

7. 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.

8. Salaun, P., Rannou, Y. and Prigent, C. 2008. Cdk1, Plks, Auroras, and Neks: the mitotic bodyguards. Adv. Exp. Med. Biol. 617: 41-56.

9. White, M.C. and Quarmby, 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; Nek5 (mouse) mapping to 8 A2.

SOURCE

Nek5 (OC-65) is a mouse monoclonal antibody raised against recombinant Nek5 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Nek5 (OC-65) is recommended for detection of Nek5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total pro-tein (1 ml of cell lysate)].

Suitable for use as control antibody for Nek5 siRNA (h): sc-75895, Nek5 siRNA (m): sc-149906, Nek5 shRNA Plasmid (h): sc-75895-SH, Nek5 shRNA Plasmid (m): sc-149906-SH, Nek5 shRNA (h) Lentiviral Particles: sc-75895-V and Nek5 shRNA (m) Lentiviral Particles: sc-149906-V.

Molecular Weight of Nek5: 81 kDa.

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

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) Immunoprecip-itation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA
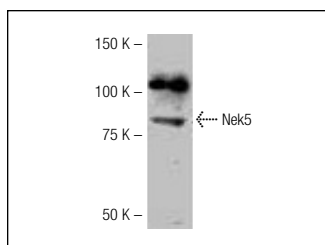
Nek5 (OC-65): sc-130492. Western blot analysis of Nek5 expression in IMR-32 whole cell lysate.

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 for detailed protocols and support products.