

Nek9 (C-20): sc-50763

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. Nek9 [NIMA (never in mitosis gene a)-related kinase 9], also known as serine/threonine-protein kinase Nek9, NERCC, NERCC1, MGC16714, MGC138306 or DKFZp434D0935, is a 979 amino acid protein that localizes to cytoplasm and nucleus. Highly expressed in liver, heart, kidney and testis, Nek9 is also expressed at lower levels in fibroblasts and smooth muscle cells. Nek9 regulates G₁/S transition and S phase progression by influencing spindle dynamics and chromosome separation. Nek9 phosphorylates different histones (Histone H3 on serine and threonine), myelin basic protein, β -casein (serine) and BICD2. Nek9 interacts with Ran GTPase, Nek6, Nek7, BICD2, SSRP1 and SUPT16H/FACT complex.

REFERENCES

1. Roig, J., et al. 2002. Nerc1, a mammalian NIMA-family kinase, binds the Ran GTPase and regulates mitotic progression. *Genes Dev.* 16: 1640-1658.
2. Belham, C., et al. 2003. A mitotic cascade of NIMA family kinases. Nerc1/Nek9 activates the Nek6 and Nek7 kinases. *J. Biol. Chem.* 278: 34897-34909.
3. O'Connell, M.J., et al. 2003. Never say never. The NIMA-related protein kinases in mitotic control. *Trends Cell Biol.* 13: 221-228.
4. Tan, B.C. and Lee, S.C. 2004. Nek9, a novel FACT-associated protein, modulates interphase progression. *J. Biol. Chem.* 279: 9321-9330.
5. Quarby, L.M. and Mahjoub, M.R. 2005. Caught Nek-ing: cilia and centrioles. *J. Cell Sci.* 118: 5161-5169.
6. Roig, J., et al. 2005. Active Nerc1 protein kinase concentrates at centrosomes early in mitosis and is necessary for proper spindle assembly. *Mol. Biol. Cell* 16: 4827-4840.
7. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609798. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: NEK9 (human) mapping to 14q24.3; Nek9 (mouse) mapping to 12 D2.

SOURCE

Nek9 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Nek9 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50763 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nek9 (C-20) is recommended for detection of Nek9 of mouse, rat and 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).

Nek9 (C-20) is also recommended for detection of Nek9 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Nek9 siRNA (h): sc-61178, Nek9 siRNA (m): sc-61179, Nek9 shRNA Plasmid (h): sc-61178-SH, Nek9 shRNA Plasmid (m): sc-61179-SH, Nek9 shRNA (h) Lentiviral Particles: sc-61178-V and Nek9 shRNA (m) Lentiviral Particles: sc-61179-V.

Molecular Weight of Nek9: 120 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, SK-N-MC nuclear extract: sc-2154 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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.

RESEARCH USE

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

PROTOCOLS

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



Try **Nek9 (39-7): sc-100401**, our highly recommended monoclonal alternative to Nek9 (C-20).