

Nek2 (H-235): sc-33167

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

- Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G₂-specific gene that encodes a potential protein kinase. *Cell* 53: 237-244.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: NEK2 (human) mapping to 1q32.3; Nek2 (mouse) mapping to 1 H6.

SOURCE

Nek2 (H-235) is a rabbit polyclonal antibody raised against amino acids 211-445 mapping at the C-terminus of Nek2 of human origin.

PRODUCT

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

APPLICATIONS

Nek2 (H-235) is recommended for detection of Nek2 of mouse, rat and 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). Nek2 (H-235) is also recommended for detection of Nek2 in additional species, including equine, canine and porcine.

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.

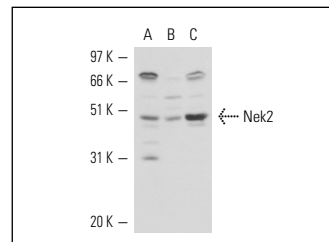
Molecular Weight of Nek2: 47 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

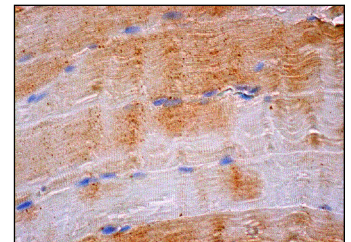
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Nek2 (H-235): sc-33167. Western blot analysis of Nek2 expression in K-562 whole cell lysate (A) and HeLa (B) and K-562 (C) nuclear extracts.



Nek2 (H-235): sc-33167. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Niida, H., et al. 2007. Specific role of Chk1 phosphorylations in cell survival and checkpoint activation. *Mol. Cell. Biol.* 27: 2572-2581.
- Henise, J.C. and Taunton, J. 2011. Irreversible Nek2 kinase inhibitors with cellular activity. *J. Med. Chem.* 54: 4133-4146.

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 **Nek2 (D-8): sc-55601** or **Nek2 (G-5): sc-55602**, our highly recommended monoclonal alternatives to Nek2 (H-235). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Nek2 (D-8): sc-55601**.