SANTA CRUZ BIOTECHNOLOGY, INC.

Nek3 (E-10): sc-390872

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_2 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 G_0-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

1. Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G_2-specific gene that encodes a potential protein kinase. Cell 53: 237-244.
2. 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.
3. Schultz, S.J., et al. 1994. Cell cycle-dependent expression of Nek2, a novel human protein kinase related to the NIMA mitotic regulator of *Aspergillus nidulans*. Cell Growth Differ. 5: 625-635.
4. Rhee, K. and Wolgemuth, D.J. 1997. The NIMA-related kinase 2, Nek2, is expressed in specific stages of the meiotic cell cycle and associates with meiotic chromosomes. Development 124: 2167-2177.
5. Fry, A.M. and Nigg, E.A. 1997. Charcterization of mammalian DNA-related kinases. Methods Enzymol. 283: 270-282.

CHROMOSOMAL LOCATION

Genetic locus: NEK3 (human) mapping to 13q14.3; Nek3 (mouse) mapping to 8 A2.

SOURCE

Nek3 (E-10) is a mouse monovvddclonal antibody raised against amino acids 78-126 mapping near the N-terminus of Nek3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Nek3 (E-10) is available conjugated to agarose (sc-390872 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390872 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390872 PE), fluorescein (sc-390872 FITC), Alexa Fluor® 488 (sc-390872 AF488), Alexa Fluor® 546 (sc-390872 AF546), Alexa Fluor® 594 (sc-390872 AF594) or Alexa Fluor® 647 (sc-390872 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390872 AF680) or Alexa Fluor® 790 (sc-390872 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Nek3 (E-10) is recommended for detection of Nek3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Nek3 siRNA (h): sc-43550, Nek3 siRNA (m): sc-149905, Nek3 shRNA Plasmid (h): sc-43550-SH, Nek3 shRNA Plasmid (m): sc-149905-SH, Nek3 shRNA (h) Lentiviral Particles: sc-43550-V and Nek3 shRNA (m) Lentiviral Particles: sc-149905-V.

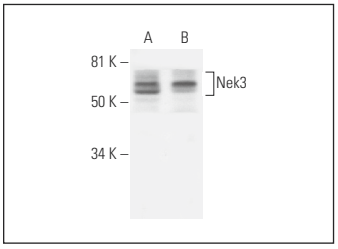
Molecular Weight of Nek3: 56 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226 or MCF7 whole cell lysate: sc-2206.

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, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nek3 (E-10): sc-390872. Western blot analysis of Nek3 expression in COLO 320DM (**A**) and MCF7 (**B**) whole cell lysates.

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 for detailed protocols and support products.