

Nek1 (E-10): sc-398813

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.

CHROMOSOMAL LOCATION

Genetic locus: NEK1 (human) mapping to 4q33; Nek1 (mouse) mapping to 8 B3.1.

SOURCE

Nek1 (E-10) is a mouse monoclonal antibody raised against amino acids 685-761 mapping within an internal region of Nek1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Nek1 (E-10) is available conjugated to agarose (sc-398813 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398813 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398813 PE), fluorescein (sc-398813 FITC), Alexa Fluor® 488 (sc-398813 AF488), Alexa Fluor® 546 (sc-398813 AF546), Alexa Fluor® 594 (sc-398813 AF594) or Alexa Fluor® 647 (sc-398813 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398813 AF680) or Alexa Fluor® 790 (sc-398813 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Nek1 (E-10) is recommended for detection of Nek1 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).

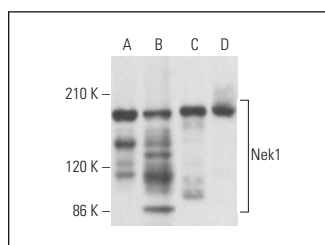
Suitable for use as control antibody for Nek1 siRNA (h): sc-106907, Nek1 siRNA (m): sc-149902, Nek1 shRNA Plasmid (h): sc-106907-SH, Nek1 shRNA Plasmid (m): sc-149902-SH, Nek1 shRNA (h) Lentiviral Particles: sc-106907-V and Nek1 shRNA (m) Lentiviral Particles: sc-149902-V.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, NIH/3T3 whole cell lysate: sc-2210 or A-10 cell lysate: sc-3806.

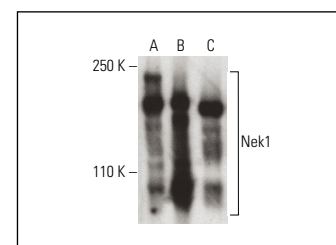
RECOMMENDED SUPPORT REAGENTS

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



Nek1 (E-10): sc-398813. Western blot analysis of Nek1 expression in human fetal brain (A) and human fetal kidney (B) tissue extracts and Neuro-2A (C) and NIH/3T3 (D) whole cell lysates.



Nek1 (E-10) HRP: sc-398813 HRP. Direct western blot analysis of Nek1 expression in Daudi (A), NIH/3T3 (B) and A-10 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Singh, V., et al. 2017. Identification of the proteome complement of human TLK1 reveals it binds and phosphorylates Nek1 regulating its activity. *Cell Cycle* 16: 915-926.
- Higelin, J., et al. 2018. Nek1 loss-of-function mutation induces DNA damage accumulation in ALS patient-derived motoneurons. *Stem Cell Res.* 30: 150-162.
- De Donato, M., et al. 2018. Identification and antitumor activity of a novel inhibitor of the NIMA-related kinase Nek6. *Sci. Rep.* 8: 16047.
- Chen, G., et al. 2019. VHL regulates Nek1 via both HIF-2α pathway and ubiquitin-proteasome pathway in renal cancer cell. *Biochem. Biophys. Res. Commun.* 509: 797-802.
- Zhu, Y., et al. 2020. Dynamic regulation of ME1 phosphorylation and acetylation affects lipid metabolism and colorectal tumorigenesis. *Mol. Cell* 77: 138-149.e5.
- Khalil, M.I., et al. 2020. Nek1 phosphorylation of YAP promotes its stabilization and transcriptional output. *Cancers* 12: 3666.
- Wang, H., et al. 2021. Nek1-mediated retromer trafficking promotes blood-brain barrier integrity by regulating glucose metabolism and RIPK1 activation. *Nat. Commun.* 12: 4826.

RESEARCH USE

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

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