SANTA CRUZ BIOTECHNOLOGY, INC.

Nek7 (A-12): sc-398439

BACKGROUND

NIMA was originally shown in *Aspergillus nidulans* to be necessary for entry into mitosis. NIMA-related mammalian proteins have since been identified as Nek1-4 and Nek6-9. High expression of Nek1 is seen in male and female germ cell lines of mice. Nek2 is the closest known mammalian relative to NIMA. Like NIMA, Nek2 expression peaks at the G_2 to M phase transition. Nek3, Nek6, Nek7 and Nek9 also regulate mitosis. Nek1 and Nek8 have been linked with polycystic kidney disease, and Nek4 expression is present in most primary carcinomas. Nek7 localizes to the cytoplasm and is highly expressed in lung, testis, muscle, slpeen, heart, liver, leukocyte and brain. Lower expression of Nek7 is detected in the ovary, prostate and kidney, while no expression is seen in small intestine.

CHROMOSOMAL LOCATION

Genetic locus: NEK7 (human) mapping to 1q31.3; Nek7 (mouse) mapping to 1 E4.

SOURCE

Nek7 (A-12) is a mouse monoclonal antibody raised against amino acids 263-302 mapping at the C-terminus of Nek7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Nek7 (A-12) is recommended for detection of Nek7 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 Nek7 siRNA (h): sc-61174, Nek7 siRNA (m): sc-61175, Nek7 shRNA Plasmid (h): sc-61174-SH, Nek7 shRNA Plasmid (m): sc-61175-SH, Nek7 shRNA (h) Lentiviral Particles: sc-61174-V and Nek7 shRNA (m) Lentiviral Particles: sc-61175-V.

Molecular Weight of Nek7: 35 kDa.

Positive Controls: Nek7 (m): 293T Lysate: sc-122001, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

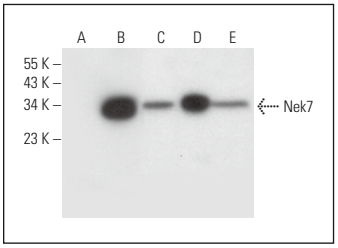
RECOMMENDED SUPPORT REAGENTS

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.

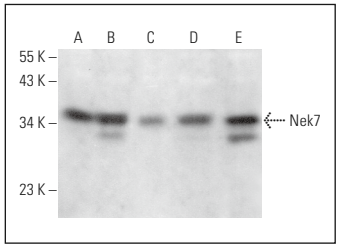
STORAGE

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

DATA



Nek7 (A-12): sc-398439. Western blot analysis of Nek7 expression in non-transfected 293T: sc-117752 (**A**), mouse Nek7 transfected 293T: sc-122001 (**B**), HeLa (**C**), Jurkat (**D**) and NIH/3T3 (**E**) whole cell lysates.



Nek7 (A-12): sc-398439. Western blot analysis of Nek7 expression in HeLa (**A**), A549 (**B**), RAW 264.7 (**C**), A-10 (**D**) and PC-12 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, H., et al. 2020. Nek7 mediated assembly and activation of NLRP3 inflammasome downstream of potassium efflux in ventilator-induced lung injury. Biochem. Pharmacol. 177: 113998.
2. Huang, Y., et al. 2020. Myeloid PTEN promotes chemotherapy-induced NLRP3-inflammasome activation and antitumour immunity. Nat. Cell Biol. 22: 716-727.
3. Kang, H., et al. 2022. TGF-β activates NLRP3 inflammasome by an autocrine production of TGF-β in LX-2 human hepatic stellate cells. Mol. Cell. Biochem. 477: 1329-1338.
4. Zhu, Y., et al. 2023. FAAH served a key membrane-anchoring and stabilizing role for NLRP3 protein independently of the endocannabinoid system. Cell Death Differ. 30: 168-183.
5. Zheng, S., et al. 2023. ZDHHC5-mediated NLRP3 palmitoylation promotes NLRP3-NEK7 interaction and inflammasome activation. Mol. Cell 83: 4570-4585.e7.
6. Kim, D., et al. 2023. Lysophosphatidic acid induces podocyte pyroptosis in diabetic nephropathy by an increase of Egr1 expression via downregulation of EzH2. Int. J. Mol. Sci. 24: 9968.

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.