SANTA CRUZ BIOTECHNOLOGY, INC.

Nlk (B-5): sc-48361

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The activation of signal transduction pathways by growth factors, hormones and neurotransmitters is mediated through two closely related MAP kinases, p44 and p42, designated extracellular-signal related kinase 1 (ERK 1) and ERK 2, respectively. ERK proteins are regulated by dual phosphorylation at specific tyrosine and threonine sites mapping within a characteristic Thr-Glu-Tyr motif. Phosphorylation at both Thr 183 and Tyr 185 is required for full enzymatic activation. In response to activation, MAP kinases phosphorylate downstream components on serine and threonine. Nlk, or nemo-like kinase, is a murine homolog of the *Drosophila* nemo (nmo) gene. Nlk and nmo have sequence homology to both the ERK MAP kinases and the cyclin dependent kinases. Nlk is a nuclear protein with the ability to autophosphorylate.

REFERENCES

1. Boulton, T.G. and Cobb, M.H. 1991. Identification of multiple extracellular signal-regulated kinases (ERKs) with antipeptide antibodies. Cell Reg. 2: 357-371.
2. Boulton, T.G., et al. 1991. ERKs: a family of protein-serine/threonine kinases that are activated and tyrosine phosphorylated in response to Insulin and NGF. Cell 65: 663-675.
3. Boulton, T.G., et al. 1991. Purification and properties of ERK 1, an Insulin-stimulated MAP2 protein kinase. Biochemistry 30: 278-286.
4. Haycock, J.W., et al. 1992. ERK 1 and ERK 2, two microtubule-associated protein 2 kinases, mediate the phos-phorylation of tyrosine hydroxylase at serine-31 *in situ*. Proc. Natl. Acad. Sci. USA 89: 2365-2369.

CHROMOSOMAL LOCATION

Genetic locus: NLK (human) mapping to 17q11.2; Nlk (mouse) mapping to 11 B5.

SOURCE

Nlk (B-5) is a mouse monoclonal antibody raised against amino acids 416-515 of Nlk of human origin.

PRODUCT

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

Nlk (B-5) is available conjugated to agarose (sc-48361 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48361 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48361 PE), fluorescein (sc-48361 FITC), Alexa Fluor® 488 (sc-48361 AF488), Alexa Fluor® 546 (sc-48361 AF546), Alexa Fluor® 594 (sc-48361 AF594) or Alexa Fluor® 647 (sc-48361 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48361 AF680) or Alexa Fluor® 790 (sc-48361 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

Nlk (B-5) is recommended for detection of Nlk 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), 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).

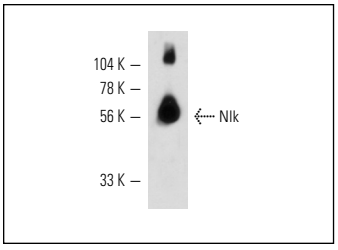
Nlk (B-5) is also recommended for detection of Nlk in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Nlk siRNA (h): sc-36079, Nlk siRNA (m): sc-36080, Nlk shRNA Plasmid (h): sc-36079-SH, Nlk shRNA Plasmid (m): sc-36080-SH, Nlk shRNA (h) Lentiviral Particles: sc-36079-V and Nlk shRNA (m) Lentiviral Particles: sc-36080-V.

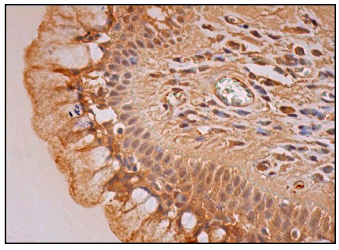
Molecular Weight of Nlk: 60 kDa.

Positive Controls: rat brain extract: sc-2392.

DATA



Nlk (B-5): sc-48361. Western blot analysis of human recombinant Nlk.



Nlk (B-5): sc-48361. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear and cytoplasmic staining of respiratory epithelial cells.

SELECT PRODUCT CITATIONS

1. Szypowska, A.A., et al. 2011. Oxidative stress-dependent regulation of Forkhead box O4 activity by nemo-like kinase. Antioxid Redox Signal. 14: 563-578.
2. Zhang, X.W., et al. 2015. Expression of Nemo-like kinase was increased and negatively correlated with the expression of TCF4 in lung cancers. Int. J. Clin. Exp. Pathol. 8: 15086-15092.
3. Liu, Z., et al. 2015. MicroRNA-92b promotes tumor growth and activation of NFκB signaling via regulation of NLK in oral squamous cell carcinoma. Oncol. Rep. 34: 2961-2968.
4. Zou, X., et al. 2016. miR-362-3p targets nemo-like kinase and functions as a tumor suppressor in renal cancer cells. Mol. Med. Rep. 13: 994-1002.
5. Moon, S., et al. 2017. Phosphorylation by NLK inhibits YAP-14-3-3-interactions and induces its nuclear localization. EMBO Rep. 18: 61-71.

RESEARCH USE

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