SANTA CRUZ BIOTECHNOLOGY, INC.

Nlk (H-2): sc-271323

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 Regul. 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 MAP-2 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.
5. Crews, C.M. and Erikson, R.L. 1992. Purification of a murine protein-tyrosine/threonine kinase that phosphorylates and activates the ERK 1 gene product: relationship to the fission yeast byr1 gene product. Proc. Natl. Acad. Sci. USA 89: 8205-8209.
6. Crews, C.M., et al. 1992. The primary structure of MEK, a protein kinase that phosphorylates the ERK gene product. Science 258: 478-480.

CHROMOSOMAL LOCATION

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

SOURCE

Nlk (H-2) is a mouse monoclonal antibody raised against a peptide mapping at the C-terminus of Nlk of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-271323 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Nlk (H-2) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Nlk (H-2) is also recommended for detection of Nlk in additional species, including equine, canine, bovine, porcine and avian.

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.

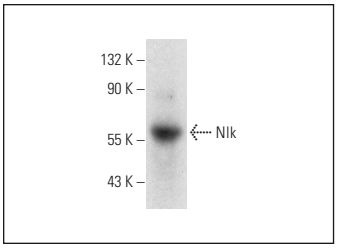
Molecular Weight of Nlk: 60 kDa.

Positive Controls: rat brain extract: sc-2392.

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



Nlk (H-2): sc-271323. Western blot analysis of Nlk expression in rat brain tissue extract.

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.