

# MLK3 (B-12): sc-166873

## BACKGROUND

As a result of the binding of growth factors to their membrane receptors, cytoplasmic proteins containing Src homology 2 (SH2) domains associate with specific phosphotyrosine residues within the activated receptors and function as signaling intermediates. The action of such SH2 domain proteins frequently involves the activation of a second group of signaling intermediates characterized by SH3 domains. These latter proteins function through binding proline-rich sequences in target proteins. A novel human non-receptor protein kinase, designated either MLK3 or PTK1, is 847 amino acids in length and contains an SH3 domain in the absence of an SH2 domain. In addition, MLK3 is characterized by a leucine zipper basic region (a motif commonly associated with transcription factors) and has a long carboxy-terminal tail which exhibits proline-rich motifs similar to known SH3 binding sites. MLK3 is expressed widely and is related to the previously described MLK1 and MLK2 kinases.

## REFERENCES

- Schlessinger, J., et al. 1992. Growth factor signaling by receptor tyrosine kinases. *Neuron* 9: 383-391.
- Mayer, B., et al. 1993. Signalling through SH2 and SH3 domains. *Trends Cell Biol.* 3: 8-13.
- Pawson, T., et al. 1993. Proteins with SH2 and SH3 domains couple receptor tyrosine kinases to intracellular signalling pathways. *Philos. Trans. R. Soc. Lond. B, Biol. Sci.* 340: 279-285.
- Dorow, D.S., et al. 1993. Identification of a new family of human epithelial protein kinases containing two leucine/isoleucine-zipper domains. *Eur. J. Biochem.* 213: 701-710.
- Ezoe, K., et al. 1994. PTK1, a novel protein kinase required for proliferation of human melanocytes. *Oncogene* 9: 935-938.
- Ing, Y.L., et al. 1994. MLK3: identification of a widely-expressed protein kinase bearing an SH3 domain and a leucine zipper-basic region domain. *Oncogene* 9: 1745-1750.

## CHROMOSOMAL LOCATION

Genetic locus: MAP3K11 (human) mapping to 11q13.1; Map3k11 (mouse) mapping to 19 A.

## SOURCE

MLK3 (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 820-850 at the C-terminus of MLK3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> 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-166873 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

MLK3 (B-12) is recommended for detection of MLK3 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 MLK3 siRNA (h): sc-35945, MLK3 siRNA (m): sc-35946, MLK3 shRNA Plasmid (h): sc-35945-SH, MLK3 shRNA Plasmid (m): sc-35946-SH, MLK3 shRNA (h) Lentiviral Particles: sc-35945-V and MLK3 shRNA (m) Lentiviral Particles: sc-35946-V.

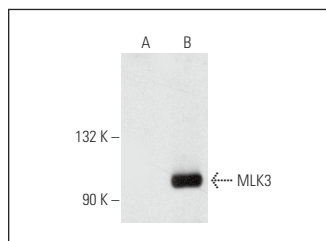
Molecular Weight of MLK3: 95 kDa.

Positive Controls: MLK3 (m): 293T Lysate: sc-121686, MLK3 (h): 293 Lysate: sc-111047 or Jurkat whole cell lysate: sc-2204.

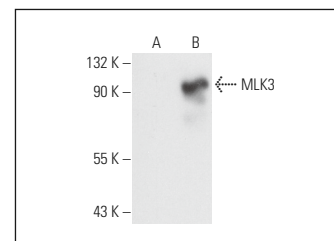
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



MLK3 (B-12): sc-166873. Western blot analysis of MLK3 expression in non-transfected: sc-117752 (A) and mouse MLK3 transfected: sc-121686 (B) 293T whole cell lysates.



MLK3 (B-12): sc-166873. Western blot analysis of MLK3 expression in non-transfected: sc-110760 (A) and human MLK3 transfected: sc-111047 (B) 293 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.