SANTA CRUZ BIOTECHNOLOGY, INC.

MLK3 (C-20): sc-536

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

MLK3 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of MLK3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-536 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MLK3 (C-20) is recommended for detection of MLK3 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, 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).

MLK3 (C-20) is also recommended for detection of MLK3 in additional species, including canine, bovine and porcine.

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: Hep G2 cell lysate: sc-2227, MLK3 (h): 293 Lysate: sc-111047 or Jurkat whole cell lysate: sc-2204.

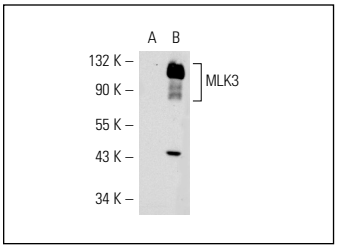
RESEARCH USE

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

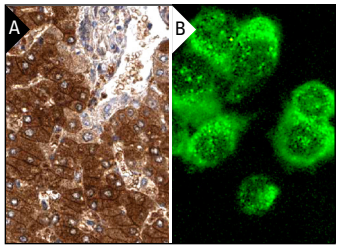
STORAGE

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

DATA



MLK3 (C-20): sc-536. Western blot analysis of MLK3 expression in non-transfected: sc-110760 (**A**) and human MLK3 transfected: sc-111047 (**B**) 293 whole cell lysates.



MLK3 (C-20): sc-536. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes and bile duct cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**A**). Immunofluorescence staining of methanol-fixed Hep G2 cells showing membrane staining (**B**).

SELECT PRODUCT CITATIONS

1. Teramoto, H., et al. 1996. Signaling from the small GTP-binding proteins Rac1 and Cdc42 to the c-Jun N-terminal kinase/stress-activated protein kinase pathway. J. Biol. Chem. 271: 27225-27228.
2. Merritt, S.E., et al. 1999. Mixed lineage kinase DLK utilizes MKK7 and not MKK4 as substrate. J. Biol. Chem. 274: 10195-10202.
3. Hehner, S.P., et al. 2000. Mixed-lineage kinase 3 delivers CD3/CD28-derived signals into the IκB kinase complex. Mol. Cell. Biol. 20: 2556-2568.
4. Arozarena, I., et al. 2001. Maintenance of CDC42 GDP-bound state by Rho-GDI inhibits MAP kinase activation by the exchange factor Ras-GRF. evidence for Ras-GRF function being inhibited by Cdc42-GDP but unaffected by CDC42-GTP. J. Biol. Chem. 276: 21878-21884.
5. Maroney, A.C., et al. 2001. Cep-1347 (kt7515), a semisynthetic inhibitor of the mixed lineage kinase family. J. Biol. Chem. 276: 25302-25308.
6. Putcha, G.V., et al. 2003. JNK-mediated BIM phosphorylation potentiates BAX-dependent apoptosis. Neuron 38: 899-914.
7. Chadee, D.N., et al. 2006. Mixed-lineage kinase 3 regulates B-Raf through maintenance of the B-Raf/Raf-1 complex and inhibition by the NF2 tumor suppressor protein. Proc. Natl. Acad. Sci. USA 103: 4463-4468.
8. Korchnak, A.C., et al. 2009. Cytokine-induced activation of mixed lineage kinase 3 requires TRAF2 and TRAF6. Cell. Signal. 21: 1620-1625.