



MLK4 (C-17): sc-47161

BACKGROUND

Mixed lineage kinases are a family of protein kinases sharing two leucine zipper-like motifs, which are known to mediate protein dimerization, and a kinase domain whose primary structure is similar to both the tyrosine-specific and the serine/threonine-specific kinase classes. Members of the mixed-lineage kinase (MLK) family include MLK1, MLK2, MLK3, MLK4, MELK, LZK and dual leucine zipper kinase, also designated DLK. MLKs are expressed in neuronal cells, where they are likely to interact between Rac1/Cdc42, MKK4 and MKK7 in death signaling.

REFERENCES

- Hirai, S., Katoh, M., Terada, M., Kyriakis, J.M., Zon, L.I., Rana, A., Avruch, J. and Ohno, S. 1997. MST/MLK2, a member of the mixed lineage kinase family, directly phosphorylates and activates SEK1, an activator of c-Jun N-terminal kinase/stress-activated protein kinase. *J. Biol. Chem.* 272: 15167-15173.
- Nagata, K., Puls, A., Futter, C., Aspenstrom, P., Schaefer, E., Nakata, T., Hirokawa, N. and Hall, A. 1998. The MAP kinase kinase kinase MLK2 co-localizes with activated JNK along microtubules and associates with kinesin superfamily motor KIF3. *EMBO J.* 17: 149-158.
- Leung, I.W. and Lassam, N. 1999. Dimerization via tandem leucine zippers is essential for the activation of the mitogen-activated protein kinase kinase, MLK3. *J. Biol. Chem.* 273: 32408-32415.
- Xu, Z., Maroney, A.C., Dobrzanski, P., Kukekov, N.V. and Greene, L.A. 2001. The MLK family mediates c-Jun N-terminal kinase activation in neuronal apoptosis. *Mol. Cell. Biol.* 21: 4713-4724.
- Gallo, K.A. and Johnson, G.L. 2002. Mixed-lineage kinase control of JNK and p38 MAPK pathways. *Nat. Rev. Mol. Cell Biol.* 3: 663-672.
- Falsig, J., Pörzgen, P., Lotharius, J. and Leist, M. 2004. Specific modulation of astrocyte inflammation by inhibition of mixed lineage kinases with CEP-1347. *J. Immunol.* 173: 2762-2770.
- Soung, Y.H., Lee, J.W., Kim, S.Y., Nam, S.W., Park, W.S., Lee, J.Y., Yoo, N.J. and Lee, S.H. 2006. Kinase domain mutation of MLK4 gene is uncommon in gastric and hepatocellular carcinomas. *Dig. Liver Dis.* 38: 283.

CHROMOSOMAL LOCATION

Genetic locus: KIAA1804 (human) mapping to 1q42; BC021891 (mouse) mapping to 8 E2.

SOURCE

MLK4 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MLK4 of mouse 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-47161 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MLK4 (C-17) is recommended for detection of MLK4 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 MLK4 siRNA (m): sc-61062.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.