10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MLK1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7919a

Product Information

Application	IHC-P, WB, E
Primary Accession	P80192
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	121895
Antigen Region	1070-1104

Additional Information

Gene ID	4293
Other Names	Mitogen-activated protein kinase kinase kinase 9, Mixed lineage kinase 1, MAP3K9, MLK1, PRKE1
Target/Specificity	This MLK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1070-1104 amino acids from the C-terminal region of human MLK1.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MLK1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAP3K9
Synonyms	MLK1, PRKE1
Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. Plays an important role in the cascades of cellular responses evoked by changes in the environment. Once activated,

	acts as an upstream activator of the MKK/JNK signal transduction cascade through the phosphorylation of MAP2K4/MKK4 and MAP2K7/MKK7 which in turn activate the JNKs. The MKK/JNK signaling pathway regulates stress response via activator protein-1 (JUN) and GATA4 transcription factors. Also plays a role in mitochondrial death signaling pathway, including the release cytochrome c, leading to apoptosis.
Tissue Location	Expressed in epithelial tumor cell lines of colonic, breast and esophageal origin.

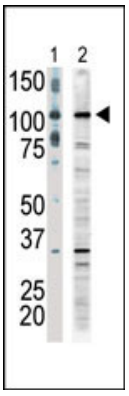
Background

MLK1 is a MLK(MAP3K) type protein kinase. The catalytic domain of mixed-lineage kinases (MLKs) kinases have amino acid sequence similarity to both the tyr-specific and the ser/thr-specific kinase classes. In addition to thee unusual nature of the kinase catalytic domains, MLK1 and MLK2 contain 2 leu/ile-zipper motifs and a basic sequence near their C-termini. MLK1 is a member of the neuronal apoptotic JNK/c-Jun pathway acting between Rac1/Cdc42 and MKK4 and -7 in death signaling. MLK1 expression has been documented in human epithelial tumor cell lines of colonic, breast and esophageal origin.

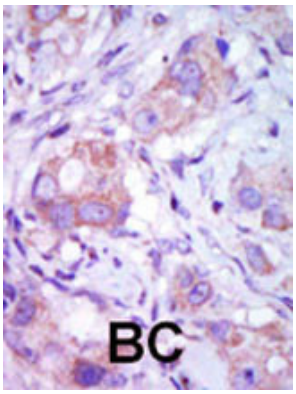
References

Durkin, J.T., et al., Biochemistry 43(51):16348-16355 (2004).
Gallo, K.A., et al., J. Biol. Chem. 269(21):15092-15100 (1994).
Dorow, D.S., et al., Eur. J. Biochem. 213(2):701-710 (1993).

Images



The anti-MLK1 Pab (Cat. #AP7919a) is used in Western blot to detect MLK1 in A375 cell lysate (lane 1) and rat testis tissue lysate (lane 2).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Ablation of mixed lineage kinase 3 (Mlk3) does not inhibit ototoxicity induced by acoustic trauma or aminoglycoside exposure.
- Mixed lineage kinase-3 stabilizes and functionally cooperates with TRIBBLES-3 to compromise mitochondrial integrity in cytokine-induced death of pancreatic beta cells.
- Identification of genes differentially expressed as result of adenovirus type 5- and adenovirus type 12-transformation.