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Phospho-MAP4K1(Y381) Blocking Peptide

Synthetic peptide
Catalog # BP3360a

Specification

Phospho-MAP4K1(Y381) Blocking Peptide - Product Information

Primary Accession Q92918

Phospho-MAP4K1(Y381) Blocking Peptide - Additional Information

Gene ID 11184

Other Names
Mitogen-activated protein kinase kinase kinase kinase 1, Hematopoietic progenitor kinase, MAPK/ERK kinase kinase kinase 1, MEK kinase kinase 1, MEKKK 1, MAP4K1, HPK1

Target/Specificity
The synthetic peptide sequence is selected from aa 374-388 of HUMAN MAP4K1

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Phospho-MAP4K1(Y381) Blocking Peptide - Protein Information

Name MAP4K1 (HGNC:6863)

Synonyms HPK1

Function
Serine/threonine-protein kinase, which plays a role in the response to environmental stress (PubMed:24362026). Appears to act upstream of the JUN N-terminal pathway (PubMed:8824585). Activator of the Hippo signaling pathway which plays a pivotal role in organ size control and tumor suppression by restricting proliferation and promoting apoptosis. MAP4Ks act in parallel to and are partially redundant with STK3/MST2 and STK4/MST2 in the phosphorylation and activation of LATS1/2, and establish MAP4Ks as components of the expanded Hippo pathway (PubMed:26437443). May play a role in hematopoietic lineage decisions and growth regulation (PubMed:24362026, PubMed:8824585). Together with

CLNK, it enhances CD3-triggered activation of T-cells and subsequent IL2 production (By similarity).

Tissue Location
Expressed primarily in hematopoietic organs, including bone marrow, spleen and thymus. Also expressed at very low levels in lung, kidney, mammary glands and small intestine

Phospho-MAP4K1(Y381) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

Phospho-MAP4K1(Y381) Blocking Peptide - Images

Phospho-MAP4K1(Y381) Blocking Peptide - Background

The c-Jun amino-terminal kinases (JNKs)/stress-activated protein kinases (SAPKs) play a crucial role in stress responses in mammalian cells. The mechanism underlying this pathway in the hematopoietic system is unclear, but it is a key in understanding the molecular basis of blood cell differentiation. We have cloned a novel protein kinase, termed hematopoietic progenitor kinase 1 (HPK1), that is expressed predominantly in hematopoietic cells, including early progenitor cells. HPK1 is related distantly to the p21(Cdc42/Rac1)-activated kinase (PAK) and yeast STE20 implicated in the mitogen-activated protein kinase (MAPK) cascade. Expression of HPK1 activates JNK1 specifically, and it elevates strongly AP-1-mediated transcriptional activity in vivo. HPK1 binds and phosphorylates MEKK1 directly, whereas JNK1 activation by HPK1 is inhibited by a dominant-negative MEKK1 or MKK4/SEK mutant. Interestingly, unlike PAK65, HPK1 does not contain the small GTPase Rac1/Cdc42-binding domain and does not bind to either Rac1 or Cdc42, suggesting that HPK1. activation is Rac1/Cdc42-independent. These results indicate that HPK1 is a novel functional activator of the JNK/SAPK signaling pathway.

Phospho-MAP4K1(Y381) Blocking Peptide - References

Hu M.C.-T., Genes Dev. 10:2251-2264(1996).
Beausoleil S.A., Proc. Natl. Acad. Sci. U.S.A. 101:12130-12135(2004).
Wissing J., Mol. Cell. Proteomics 6:537-547(2007).