

**Phospho-MAP4K1(Y381) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP3360a****Specification**

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**Phospho-MAP4K1(Y381) Blocking Peptide - Product Information**Primary Accession [O92918](#)**Phospho-MAP4K1(Y381) Blocking Peptide - Additional Information**

Gene ID 11184

**Other Names**

Mitogen-activated protein kinase kinase kinase 1, Hematopoietic progenitor kinase, MAPK/ERK 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

Synonyms HPK1

**Function**

Serine/threonine-protein kinase, which may play a role in the response to environmental stress (PubMed:<a href="http://www.uniprot.org/citations/24362026" target="\_blank">24362026</a>). Appears to act upstream of the JUN N-terminal pathway (PubMed:<a href="http://www.uniprot.org/citations/8824585" target="\_blank">8824585</a>). May play a role in hematopoietic lineage decisions and growth regulation (PubMed:<a href="http://www.uniprot.org/citations/8824585" target="\_blank">8824585</a>, PubMed:<a href="http://www.uniprot.org/citations/24362026" target="\_blank">24362026</a>). Able to autophosphorylate (PubMed:<a href="http://www.uniprot.org/citations/8824585" target="\_blank">8824585</a>). 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).