

LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide

Synthetic peptide

Catalog # BP7813a

Specification**LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - Product Information**Primary Accession [P53667](#)**LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - Additional Information**

Gene ID 3984

Other Names

LIM domain kinase 1, LIMK-1, LIMK1, LIMK

Target/Specificity

The synthetic peptide sequence is selected from aa 9~25 of human LIMK1.

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.

LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - Protein Information

Name LIMK1

Synonyms LIMK

Function

Serine/threonine-protein kinase that plays an essential role in the regulation of actin filament dynamics. Acts downstream of several Rho family GTPase signal transduction pathways (PubMed:<a href="h

LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - Background

LIMK1, a member of the Ser/Thr protein kinase family, may be a component of an intracellular signaling pathway and may be involved in brain development. It phosphorylates and inactivates the actin binding/depolymerizing factor cofilin and induces actin cytoskeletal changes. The LIM domain interacts with the cytoplasmic domain of NRG1, and this cytoplasmic protein also binds ROCK1, which phosphorylates LIMK1 on serine and/or threonine residues. Highest expression occurs in both adult and fetal nervous systems. It is detected ubiquitously throughout the different regions of adult brain, with highest levels in the cerebral cortex, and is expressed to a lesser extent in heart and skeletal muscle. Haploinsufficiency of LIMK1 may be the cause of certain cardiovascular and musculo-skeletal abnormalities observed in Williams-Beuren syndrome (WBS), a rare developmental disorder. It is a contiguous gene deletion syndrome involving genes from chromosome band 7q11.23. This protein contains 2 LIM zinc-binding domains and 1 PDZ/DHR domain.

LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - References

Ohashi, K., et al., J. Biol. Chem. 275(5):3577-3582 (2000). Maekawa, M., et al., Science 285(5429):895-898 (1999). Edwards, D.C., et al., J. Biol. Chem. 274(16):11352-11361 (1999). Osborne, L.R., et al., Genomics 36(2):328-336 (1996). Frangiskakis, J.M., et al., Cell 86(1):59-69 (1996).

<http://www.uniprot.org/citations/10436159>
target="_blank">10436159,
PubMed:11832213,
PubMed:12807904,
PubMed:15660133,
PubMed:16230460,
PubMed:18028908,
PubMed:22328514,
PubMed:23633677).
Activated by upstream kinases including ROCK1, PAK1 and PAK4, which phosphorylate LIMK1 on a threonine residue located in its activation loop (PubMed:10436159). LIMK1 subsequently phosphorylates and inactivates the actin binding/depolymerizing factors cofilin-1/CFL1, cofilin-2/CFL2 and destrin/DSTN, thereby preventing the cleavage of filamentous actin (F-actin), and stabilizing the actin cytoskeleton (PubMed:11832213,
PubMed:15660133,
PubMed:16230460,
PubMed:23633677). In this way LIMK1 regulates several actin-dependent biological processes including cell motility, cell cycle progression, and differentiation (PubMed:11832213,
PubMed:15660133,
PubMed:16230460).

PubMed:16230460,
PubMed:23633677).
Phosphorylates TPPP on serine residues, thereby promoting microtubule disassembly (PubMed:18028908).
Stimulates axonal outgrowth and may be involved in brain development (PubMed:18028908).

Cellular Location

Cytoplasm. Nucleus. Cytoplasm, cytoskeleton. Cell projection, lamellipodium {ECO:0000250|UniProtKB:P53668}
Note=Predominantly found in the cytoplasm. Localizes in the lamellipodium in a CDC42BPA, CDC42BPB and FAM89B/LRAP25-dependent manner. {ECO:0000250|UniProtKB:P53668}

Tissue Location

Highest expression in both adult and fetal nervous system. Detected ubiquitously throughout the different regions of adult brain, with highest levels in the cerebral cortex. Expressed to a lesser extent in heart and skeletal muscle

LIM Kinase 1 (LIMK1) Antibody (N-term) Blocking peptide - Protocols

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

- [Blocking Peptides](#)