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

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

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7813A

Specification

LIM Kinase 1 (LIMK1) Antibody (N-term) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	P53667
Other Accession	P53669, P53668
Reactivity	**Human**
Predicted	**Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**72585**
Antigen Region	**1-30**

LIM Kinase 1 (LIMK1) Antibody (N-term) - Additional Information

Gene ID 3984

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

Target/Specificity
This LIM Kinase 1 (LIMK1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human LIM Kinase 1 (LIMK1).

Dilution
WB~~1:1000
IHC-P~~1:50~100

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
LIM Kinase 1 (LIMK1) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

LIM Kinase 1 (LIMK1) Antibody (N-term) - 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: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: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

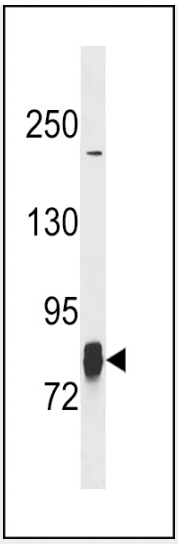
LIM Kinase 1 (LIMK1) Antibody (N-term) - Protocols

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

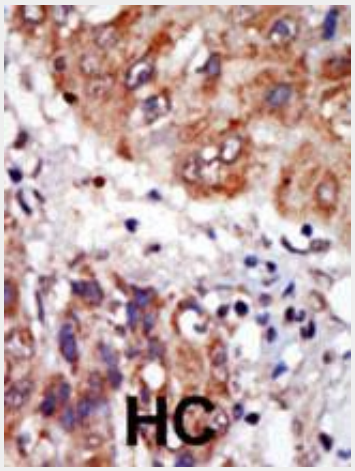
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LIM Kinase 1 (LIMK1) Antibody (N-term) - Images

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



LIMK1 Antibody (T9) (Cat. #AP7813a) western blot analysis in SK-BR-3 cell line lysates (35ug/lane).This demonstrates the LIMK1 antibody detected the LIMK1 protein (arrow).



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.

LIM Kinase 1 (LIMK1) Antibody (N-term) - 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, whic 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) - 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).