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LIMK1 / LIMK Antibody (clone 1A8)

Mouse Monoclonal Antibody
Catalog # ALS14067

Specification

LIMK1 / LIMK Antibody (clone 1A8) - Product Information

Application	**WB, IHC**
Primary Accession	P53667
Reactivity	**Human, Mouse, Rat**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**73kDa KDa**

LIMK1 / LIMK Antibody (clone 1A8) - Additional Information

Gene ID 3984

Other Names
LIM domain kinase 1, LIMK-1, 2.7.11.1, LIMK1, LIMK

Target/Specificity
Human LIMK1

Reconstitution & Storage
Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions
LIMK1 / LIMK Antibody (clone 1A8) is for research use only and not for use in diagnostic or therapeutic procedures.

LIMK1 / LIMK Antibody (clone 1A8) - 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

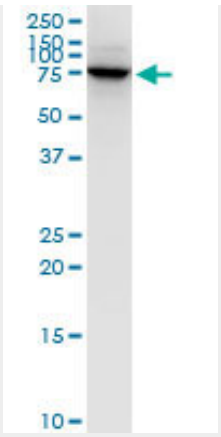
LIMK1 / LIMK Antibody (clone 1A8) - Protocols

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

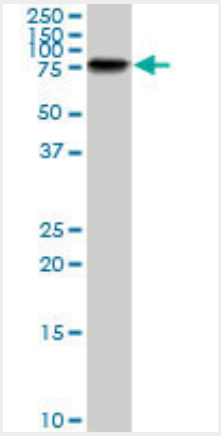
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LIMK1 / LIMK Antibody (clone 1A8) - Images

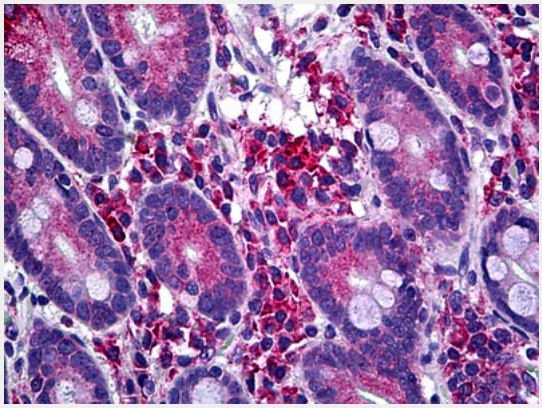
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LIMK1 monoclonal antibody clone 1A8. Western blot of LIMK1 expression in PC-12.



LIMK1 monoclonal antibody clone 1A8. Western blot of LIMK1 expression in NIH/3T3.



Anti-LIMK1 antibody IHC of human small intestine.

LIMK1 / LIMK Antibody (clone 1A8) - Background

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. Activated by upstream kinases including ROCK1, PAK1 and PAK4, which phosphorylate LIMK1 on a threonine residue located in its activation loop. 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. In this way LIMK1 regulates several actin-dependent biological processes including cell motility, cell cycle progression, and differentiation. Phosphorylates TPPP on serine residues, thereby promoting microtubule

disassembly. Stimulates axonal outgrowth and may be involved in brain development. Isoform 3 has a dominant negative effect on actin cytoskeletal changes. Required for atypical chemokine receptor ACKR2-induced phosphorylation of cofilin (CFL1).

LIMK1 / LIMK Antibody (clone 1A8) - References

Mizuno K.,et al.Oncogene 9:1605-1612(1994).
Frangiskakis J.M.,et al.Cell 86:59-69(1996).
Osborne L.R.,et al.Genomics 36:328-336(1996).
Edwards D.C.,et al.J. Biol. Chem. 274:11352-11361(1999).
Ota T.,et al.Nat. Genet. 36:40-45(2004).