

LIMK1 / LIMK Antibody (clone 2E9)
Mouse Monoclonal Antibody
Catalog # ALS14068**Specification**

LIMK1 / LIMK Antibody (clone 2E9) - Product Information

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

LIMK1 / LIMK Antibody (clone 2E9) - 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 2E9) is for research use only and not for use in diagnostic or therapeutic procedures.

LIMK1 / LIMK Antibody (clone 2E9) - 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

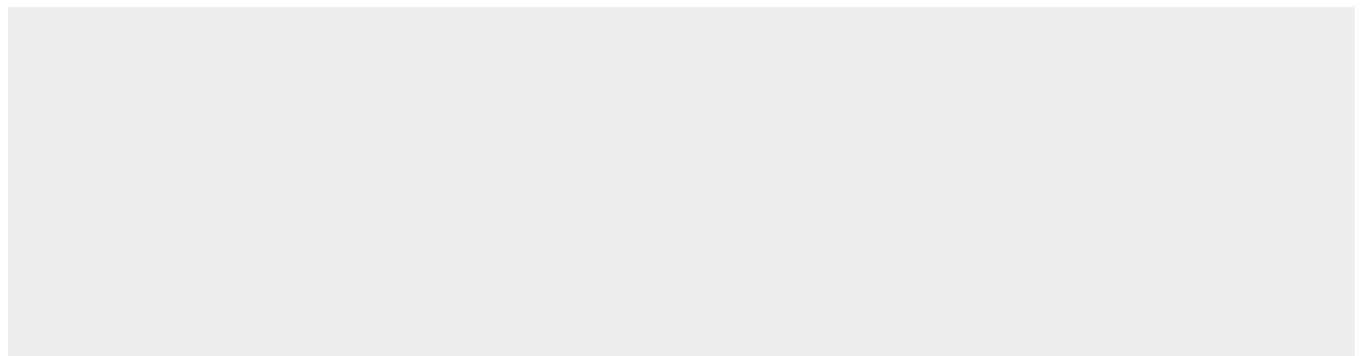
Highest expression in both adult and fetal nervous system. Detected ubiquitously throughout the different regions of adult brain, with highest levels in the cerebral cortex. Expressed to a lesser extent in heart and skeletal muscle

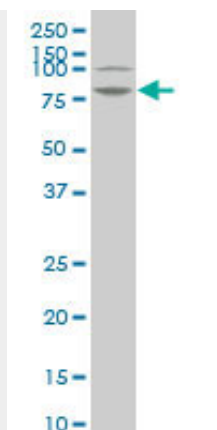
LIMK1 / LIMK Antibody (clone 2E9) - Protocols

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

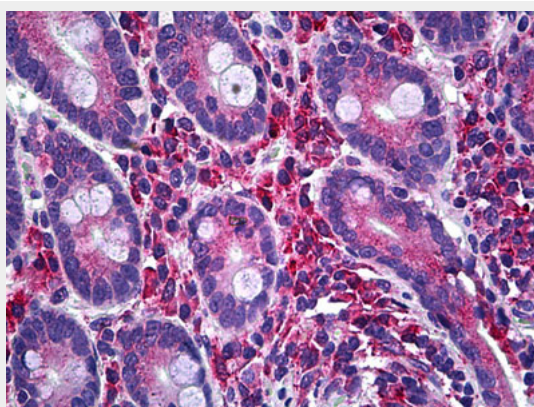
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

LIMK1 / LIMK Antibody (clone 2E9) - Images





LIMK1 monoclonal antibody (M05), clone 2E9 Western blot of LIMK1 expression in HeLa.



Anti-LIMK1 antibody IHC of human small intestine.

LIMK1 / LIMK Antibody (clone 2E9) - 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 2E9) - 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).