ARG40707
anti-LIMK1 antibody

Package: 50 µg
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes LIMK1
Tested Reactivity	Hu, Ms, Rat
Tested Application	WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	LIMK1
Species	Human
Immunogen	Synthetic peptide corresponding to aa. 599-634 of Human LIMK1 (KLEHWLETLRMHLAGHLPLGPQLEQLDRGFWETYRR).
Conjugation	Un-conjugated
Alternate Names	LIMK; EC 2.7.11.1; LIM domain kinase 1; LIMK-1

Application Instructions

Application table

Application	Dilution
WB	1:500 - 1:2000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

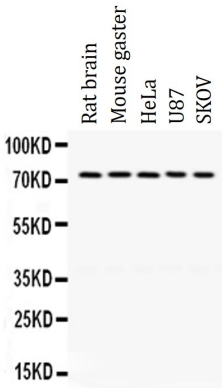
Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	0.2% Na2HPO4, 0.9% NaCl, 0.05% Sodium azide and 5% BSA.
Preservative	0.05% Sodium azide
Stabilizer	5% BSA
Concentration	0.5 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	LIMK1
Gene Full Name	LIM domain kinase 1
Background	There are approximately 40 known eukaryotic LIM proteins, so named for the LIM domains they contain. LIM domains are highly conserved cysteine-rich structures containing 2 zinc fingers. Although zinc fingers usually function by binding to DNA or RNA, the LIM motif probably mediates protein-protein interactions. LIM kinase-1 and LIM kinase-2 belong to a small subfamily with a unique combination of 2 N-terminal LIM motifs and a C-terminal protein kinase domain. LIMK1 is a serine/threonine kinase that regulates actin polymerization via phosphorylation and inactivation of the actin binding factor cofilin. This protein is ubiquitously expressed during development and plays a role in many cellular processes associated with cytoskeletal structure. This protein also stimulates axon growth and may play a role in brain development. LIMK1 hemizygosity is implicated in the impaired visuospatial constructive cognition of Williams syndrome. Alternative splicing results in multiple transcript variants encoding distinct isoforms.[provided by RefSeq, Feb 2011]
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. 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). [UniProt]
Calculated Mw	73 kDa
PTM	Autophosphorylated (By similarity). Phosphorylated on Thr-508 by ROCK1 and PAK1, resulting in activation. Phosphorylated by PAK4 which increases the ability of LIMK1 to phosphorylate cofilin. Phosphorylated at Ser-323 by MAPKAPK2 during activation of VEGFA-induced signaling, which results in activation of LIMK1 and promotion of actin reorganization, cell migration, and tubule formation of endothelial cells. Dephosphorylated and inactivated by SSH1. Phosphorylated by CDC42BP. Ubiquitinated. 'Lys-48'-linked polyubiquitination by RNF6 leads to proteasomal degradation through the 26S proteasome, modulating LIMK1 levels in the growth cone and its effect on axonal outgrowth. Also polyubiquitinated by RLIM (By similarity). [UniProt]
Cellular Localization	Cytoplasm. Nucleus. Cell projection, lamellipodium. Note=Predominantly found in the cytoplasm. Localizes in the lamellipodium in a CDC42BPA, CDC42BPB and FAM89B/LRAP25-dependent manner. [UniProt]

Images



ARG40707 anti-LIMK1 antibody WB image

Western blot: 50 µg of Rat brain, 50 µg of Mouse gaster, 40 µg of HeLa, 40 µg of U87 and 40 µg of SKOV whole cell lysates stained with ARG40707 anti-LIMK1 antibody at 0.5 µg/ml dilution.