



Rabbit Anti-LIMK1 antibody

SL2775R

Product Name:	LIMK1
Chinese Name:	单丝氨酸蛋白激酶1抗体
Alias:	EC 2.7.11.1; LIM domain kinase 1; LIM motif-containing protein kinase; LIMK; LIMK-1; LIMK2; LIMK-2; LIM domain kinase 2; LIMK1_HUMAN.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Cow,Rabbit,
Applications:	WB=1:500-2000ELISA=1:2000-5000IHC-P=1:20-100IHC-F=1:20-100IF=1:20-100 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	71kDa
Cellular localization:	The nucleuscytoplasmic
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human LIMK1:451-550/647
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	LIMK1 is a protein kinase which regulates actin filament dynamics. Phosphorylates and inactivates the actin binding/depolymerizing factor cofilin, thereby stabilizing the actin cytoskeleton. LIMK1 may be involved in brain development; it is highly expressed 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.

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.

Subunit:

Interacts (via LIM domain) with the cytoplasmic domain of NRG1. Interacts with NISCH. Interacts with RLIM and RNF6. Self-associates to form homodimers. Interacts with HSP90AA1; this interaction promotes LIMK1 dimerization and subsequent transphosphorylation. Interacts with CDN1C. Interacts with SSH1. Interacts with ROCK1.

Subcellular Location:

Cytoplasm. Nucleus. Note=Predominantly found in the cytoplasm.

Tissue Specificity:

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.

Post-translational modifications:

Autophosphorylated. 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.

DISEASE:

Note=LIMK1 is located in the Williams-Beuren syndrome (WBS) critical region. WBS results from a hemizygous deletion of several genes on chromosome 7q11.23, thought to arise as a consequence of unequal crossing over between highly homologous low-copy repeat sequences flanking the deleted region.

Similarity:

Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. Contains 2 LIM zinc-binding domains.

Contains 1 PDZ (DHR) domain.

Contains 1 protein kinase domain.

SWISS:

P53667

Gene ID:

3984

Database links:

[Entrez Gene: 3984](#)Human

[Entrez Gene: 16885](#)Mouse

[Entrez Gene: 65172](#)Rat

[Omim: 601329](#)Human

[SwissProt: P53667](#)Human

[SwissProt: P53668](#)Mouse

[SwissProt: P53669](#)Rat

[Unigene: 647035](#)Human

[Unigene: 15409](#)Mouse

[Unigene: 11250](#)Rat

Important Note:

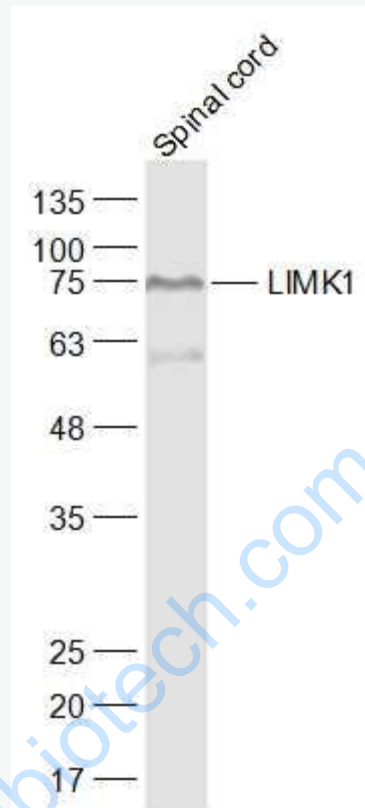
This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

LIM激酶1(LIMkinase1,LIMK-1)是单丝氨酸蛋白激酶,LIMK-

1的活化受多种机制调控,成为联系细胞外刺激与Cytoskeleton稳定性的枢纽,在多种基本的生物学过程中起重要作用。LIMK-

1包含LIM和PDZ蛋白和蛋白相互作用区、P/S结构域、激酶结构域,在神经元中呈高表达。它的主要作用是使肌动蛋白解聚因子cofilin磷酸化和失活,从而导致肌动蛋白Cytoskeleton的改变。

Picture:



Sample:

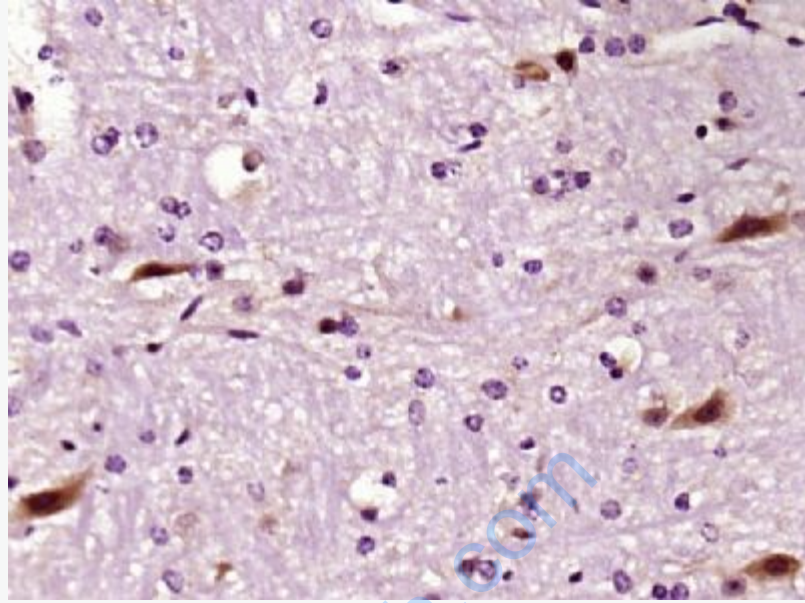
Spinal cord (Mouse) Lysate at 40 ug

Primary: Anti-LIMK1 (SL2775R) at 1/1000 dilution

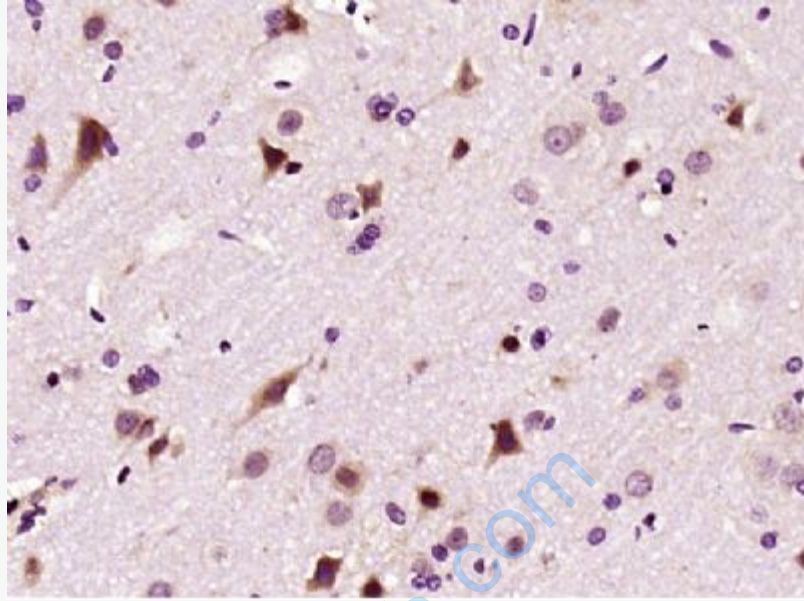
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 71 kD

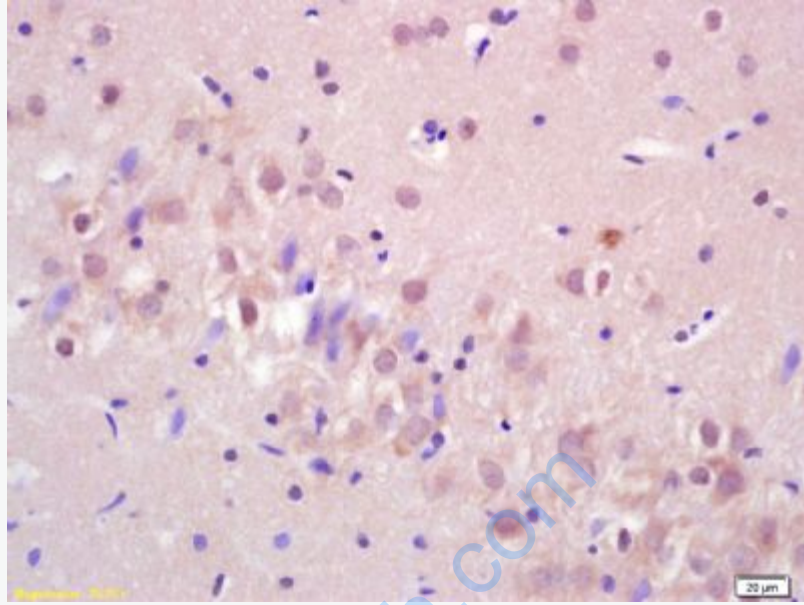
Observed band size: 75 kD



Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (LIMK1) Polyclonal Antibody, Unconjugated (SL2775R) at 1:400 overnight at 4°C, followed by a conjugated secondary antibody (sp-0023) for 20 minutes and DAB staining.



Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (LIMK1) Polyclonal Antibody, Unconjugated (SL2775R) at 1:400 overnight at 4°C, followed by a conjugated secondary antibody (sp-0023) for 20 minutes and DAB staining.



Tissue/cell: rat brain tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;
Incubation: Anti-LIMK1 Polyclonal Antibody, Unconjugated(SL2775R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining