Technical Data Sheet

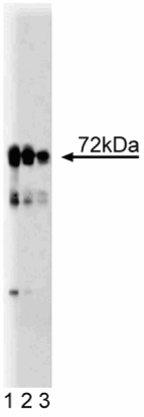
Purified Mouse Anti-LIMK1

Product Information

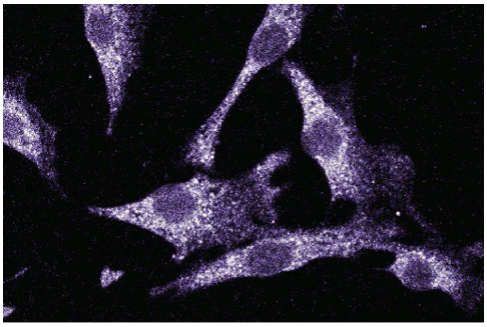
Material Number:	**611749**
Size:	150 µg
Concentration:	250 µg/ml
Clone:	42/LIMK1
Immunogen:	Human LIMK1 aa. 232-333
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Rat Tested in Development: Human, Mouse
Target MW:	72 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

Two **LIM** motif-containing protein **k**inases (LIMK) have been identified, LIMK1 and LIMK2. These kinases contain two N-terminal LIM domains, a central PDZ domain, and a C-terminal Ser/Thr kinase domain. LIMK1 is highly expressed in brain, heart, and skeletal muscle, while LIMK2 exhibits the highest expression in placenta, liver, lung, kidney, and pancreas. LIMK1 is localized to the actin cytoskeleton and phosphorylates the actin binding/depolymerizing factor, cofilin. During Rho-induced neurite retraction, activation of ROCK leads to LIMK1 activation via phosphorylation at Thr508. In COS-7 cells, disruption of the second LIM domain or the PDZ domain increases LIMK1-induced aggregation of the actin cytoskeleton. In addition, a 32 kDa splice variant that contains only the N-terminus (dLIMK1) suppresses LIMK1 activity by interaction with the C- terminal kinase domain. In humans, deletion of LIMK1 has been implicated in Williams syndrome, a disorder that produces a distinct cognitive profile and vascular disease. Thus, LIMK1, and its splice variant dLIMK1, are thought to have important roles in the regulation of the actin cytoskeleton in a wide varitey of tissues.



Western blot analysis of LIMK1 on rat cerebellum lysate. *Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of anti-LIMK1.*



Immunofluorescent staining of NIH-3T3 *cells.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at -20°C.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml .

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Suggested Companion Products

Catalog Number	Name	Size	Clone
611464	Rat Cerebellum Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Edwards DC, Gill GN. Structural features of LIM kinase that control effects on the actin cytoskeleton. *J Biol Chem.* 1999; 274(16):11352-11361.(Biology)

Frangiskakis JM, Ewart AK, Morris CA. LIM-kinase1 hemizygosity implicated in impaired visuospatial constructive cognition. *Cell.* 1996; 86(1):59-69.(Biology)

Ohashi K, Nagata K, Maekawa M, Ishizaki T, Narumiya S, Mizuno K. Rho-associated kinase ROCK activates LIM-kinase 1 by phosphorylation at threonine 508 within the activation loop. *J Biol Chem.* 2000; 275(5):3577-3582.(Biology)

Okano I, Hiraoka J, Otera H. Identification and characterization of a novel family of serine/threonine kinases containing two N-terminal LIM motifs. *J Biol Chem.* 1995; 270.(52.):31321-31330.(Biology)