

### Background

LIM kinases (LIMK1 and LIMK2) are serine/threonine kinases that have two zinc finger motifs, known as LIM motifs, in their amino-terminal regulatory domains. LIM kinases are involved in actin cytoskeletal regulation downstream of Rho-family GTPases, PAKs, and ROCK. PAK1 and ROCK phosphorylate LIMK1 or LIMK2 at the conserved Thr-508 or Thr-505 residues in the activation loop, increasing LIMK activity. In addition, VEGF-induced stress fiber formation has been linked to p38-mediated activation of LIMK through MK-2 phosphorylation of Ser-323. Activated LIM kinases inhibit the actin depolymerization activity of cofilin by phosphorylation at the amino-terminal Ser-3 residue of cofilin. In addition, LIMKs may have a function in the nucleus. It has been shown that the nuclear localization of LIMKs can mediate suppression of Rac/Cdc42-mediated cyclin D1 expression. This effect of LIMKs was independent of cofilin phosphorylation and the regulation of actin dynamics.

### Background References

Okano, I. et al. (1995) J. Biol. Chem. 270:31321.  
Edwards, D. C. et al. (1999) Nat. Cell Biol. 1:253.  
Kobayashi, M. et al. (2006) EMBOJ 25:713.

### Applications

Blocking 1:1000  
ELISA 50 ng/well

End user should determine optimal dilution for their particular applications and experiments.  
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

### Specificity

This peptide is the unphosphorylated control peptide for LIMK1 (Ser-323) phospho-specific antibody (LP2431). It can be used for ELISA and is recommended for blocking control in western blot and immunocytochemistry.

\*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

### Peptide Sequence

Unphosphorylated LIMK1 (Ser-323) synthetic peptide corresponding to amino acids surrounding serine 323 in human LIMK1. This sequence is conserved in rat and mouse LIMK1, and has high homology to Ser-314 in human LIMK2.

### Buffer and Storage

Blocking Peptide is supplied in 50µl phosphate-buffered saline and 0.05% sodium azide.  
Store at -20°C. Stable for 1 year.

### Related Products

LP1831 LIMK1 (C-terminus) Rabbit Polyclonal  
LP2431 LIMK1 (Ser-323)[LIMK2 (Ser-314)], phospho-specific Rabbit  
LP1891 LIMK1 (Thr-508)[LIMK2 (Thr-505)], phospho-specific Rabbit Polyclonal  
LX2435 phospho-LIMK1 (Ser-323) Blocking Peptide

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