

Myosin Regulatory Light Chain (Ser-1), phospho-specific [Conserved Site]

Cat. #	MP3461
Host	Rabbit Polyclonal
Size	100 µl

Background:

Both smooth muscle and nonmuscle myosin II activity is regulated by the phosphorylation state of the myosin regulatory light chain (MLC, MRLC, MLC20, Myl9). Phosphorylation of MLC at Thr-18 and Ser-19 activates myosin II motor activity and increases myosin filament stability. This activation has important roles in various cell motile processes. By contrast, other phosphorylation sites on MLC may inhibit myosin II activity. PKC phosphorylates Ser-1/Ser-2 and Thr-9 in MLC, and this phosphorylation decreases activated myosin II interaction with actin, as well as inhibits MLC interaction with the activation site kinase, myosin light-chain kinase. The Ser-1/Ser-2 region may be the major inhibitory site since Ser-1 is phosphorylated during PDGF-induced stress fiber disassembly and expression of unphosphorylatable MLC20 at the Ser-1/Ser-2 site suppresses this disassembly. Thus, inhibition of myosin II activity through phosphorylation of Ser-1/Ser-2 may have important roles in growth factor-induced reorganization of actomyosin filaments.

References

- Sellers, J.R. (1991) *Curr. Opin. Cell Biol.* 3:98.
 Tan, J.L. et al. (1992) *Annu. Rev. Biochem.* 61:721.
 Komatsu, S. & Ikebe, M. (2007) *Mol. Biol. Cell* 18:5081.

Immunogen:

Phospho-MLC (Ser-1) synthetic peptide (coupled to KLH) corresponding to amino acid residues surrounding Ser-1 in bovine myosin regulatory light chain 9 (Myl9). This peptide sequence is highly conserved in human, rat, and mouse Myl9, and in other smooth muscle and non-muscle MLCs.

Applications:

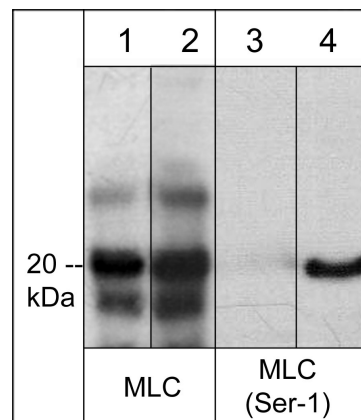
WB 1:1000
 ELISA 1:2000

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.

Related Products:

MM3441 Myosin Regulatory Light Chain (MLC20) Mouse Monoclonal
 MX3465 phospho-Myosin Regulatory Light Chain (Ser-1) Peptide
 AK6060 Actin & Tubulin Antibody Sampler Kit
 AP1671 Actin (Tyr-53), phospho-specific Rabbit Polyclonal
 RM2741 ROCK-I (C-terminal), cleavage-specific Mouse Monoclonal
 RP1361 RhoA (Ser-188), phospho-specific Rabbit Polyclonal

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Western blot analysis of A431 cells untreated (lanes 1 & 3) or treated with 100 ng/ml EGF for 15 min. (lanes 2 & 4). The blots were probed with monoclonal anti-MLC20 (clone MY-21) (lanes 1 & 2) or polyclonal anti-MLC (Ser-1), phospho-specific (lanes 3 & 4).

Buffer and Storage:

Rabbit polyclonal, affinity-purified antibody is supplied in 100 µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Do not aliquot. Stable for 1 year.

Specificity:

This antibody was affinity purified using phospho-MLC (Ser-1) peptide (without carrier). The antibody detects a 20 kDa* band corresponding to the molecular weight of myosin light chain in human A431 treated with EGF or calyculin A. In addition, the antibody detects the 20 kDa myosin light chain in mouse C2C12, rat PC12, and rabbit fibroblasts treated with calyculin A.

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

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