

# Myosin Regulatory Light Chain (MLC20)

Cat. # MM3441

Host Mouse Monoclonal IgM

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:

Clone MY-21 was generated from myosin light chains in chicken lens membrane extracts. The antibody reacts with myosin from chicken, pig, bovine, rabbit, and human muscle.

## Applications:

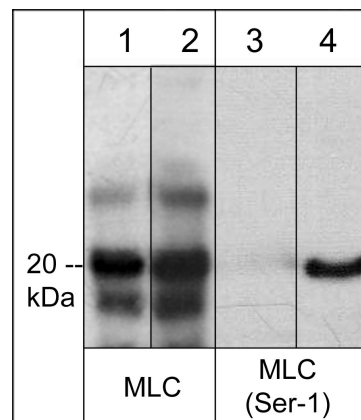
WB	1:250
ICC	1:250
ELISA	1:1000

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:

- MP3461 Myosin Regulatory Light Chain (Ser-1), phospho-specific [Conserved Site]  
 MX3465 phospho-Myosin Regulatory Light Chain (Ser-1) Peptide  
 AK6060 Actin & Tubulin Antibody Sampler Kit  
 AP1671 Actin (Tyr-53), phospho-specific Rabbit Polyclonal  
 RP1361 RhoA (Ser-188), phospho-specific Rabbit Polyclonal  
 RM2741 ROCK-I (C-terminal), cleavage-specific Mouse Monoclonal

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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:

Mouse monoclonal is provided as ascites fluid with 0.02% sodium azide. Store at 4°C, stable for 6 months. For long term storage, aliquot and store at -20°C.

## Specificity:

The antibody detects a 20 kDa\* band corresponding to the molecular weight of myosin light chain in human A431, mouse C2C12, and rabbit fibroblasts.

\*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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