Myosin Light Chain (a.a. 11-22)

Blocking Peptide

Cat. # MX4205
Size 50 µg

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.

Background 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.

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

The peptide is specifically recognized by anti-MLC (a.a. 11-22) antibody (MP4201) in ELISA, and has been shown to block the reactivity of MP4201 during Western blot. In addition, the peptide is recommended for use in blocking MP4201 reactivity in 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

MLC (a.a. 11-22) synthetic peptide corresponds to amino acid residues in the N-terminus of human myosin regulatory light chain 12A (Myl12A). This peptide sequence is highly conserved in human, rat, mouse, chicken, and zebrafish Myl12A, and in other smooth muscle and non-muscle MLCs.

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

MK6370	Myosin IIA Heavy Chain Phospho-Regulation Antibody Sampler Kit
MM3441	Myosin Light Chain (MLC20) Mouse Monoclonal
MP4201	Myosin Light Chain (a.a. 11-22) Rabbit Polyclonal
MP3461	Myosin Light Chain (Ser-1), phospho-specific Rabbit Polyclonal
MP4221	Myosin Light Chain (Ser-19), phospho-specific Rabbit Polyclonal

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