

Myosin IIA Heavy Chain (Ser-1943), phospho-specific

Cat. # MP3831

Host Rabbit Polyclonal

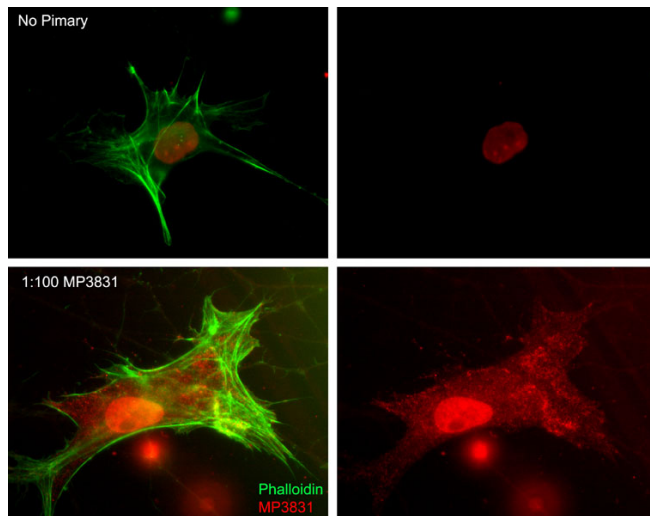
Size 100 µl

Background:

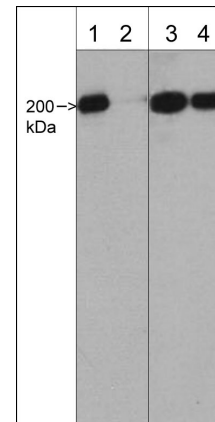
Non-muscle myosin II is an actin-based motor protein essential to cell motility, cell division, migration, adhesion and polarity. This myosin forms a hexameric complex comprised of two heavy chains (NMHC-II), two essential light chains, and two regulatory light chains (RLC). In vertebrates, there are three NMHC-II isoforms (NMHC-IIA, NMHC-IIB, and NMHC-IIC), which exhibit distinct patterns of expression in cells and tissues. Regulation of NMHC-II activity occurs through RLC and HC phosphorylation. RLCs are phosphorylated at Thr-18 and Ser-19, leading to activation of myosin II motor activity and increased myosin filament stability. By contrast, PKC phosphorylation of Ser-1/Ser-2 and Thr-9 in RLC may decrease activated myosin II interaction with actin. NMHC-II phosphorylation may be an important mode for regulating myosin-II assembly. PKC phosphorylates NMHC-IIA on Ser-1916 in the C-terminal region and NMHC-IIB on multiple serines in the tailpiece. Casein kinase II phosphorylates NMHC-IIA on Ser-1943 in the tailpiece and increases disassembly of NMHC-IIA filaments.

References

- Murakami, N. et al. (1998) *Biochemistry* 37:1989.
 Dulyaninova, N.G. et al. (2007) *Mol Biol Cell* 18:3144.
 Conti, M.A. & Adelstein, R.S. (2008) *J Cell Sci.* 121:11.
 Breckenridge, M.T. et al. (2009) *Mol Biol Cell* 20:338.



Immunocytochemical labeling of myosin IIA heavy chain phosphorylation relative to F-actin in chick fibroblasts. The cells were labeled with rabbit polyclonal Myosin IIA Heavy Chain (Ser-1943) antibody (MP3831), then detected using appropriate secondary antibody (Bottom, Red). This labeling is compared to F-actin staining (Bottom, Green) and to secondary only (Top). (Image provided by Dr. Gianluca Gallo at Drexel University).



Western blot image of human A431 cells. The blots were untreated (lanes 1 & 3) or treated with lambda phosphatase (lanes 2 & 4), then probed with rabbit polyclonal Myosin IIA Heavy Chain (Ser-1943), phospho-specific antibody (lanes 1 & 2) or rabbit polyclonal Myosin IIA Heavy Chain (a.a. 1936-1950) antibody (lanes 3 & 4).

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Myosin IIA Heavy Chain (Ser-1943), phospho-specific

Cat. # MP3831
Host Rabbit Polyclonal
Size 100 µl

Immunogen:

Phospho-NMHC-IIA (Ser-1943) synthetic peptide (coupled to KLH) corresponding to amino acid residues surrounding Ser-1943 in human myosin IIA heavy chain. This peptide sequence is highly conserved in rat and mouse NMHC-IIA, but is not found in NMHC-IIB and is not well conserved in NMHC-IIC.

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.

Applications:

WB 1:1000
ELISA 1:2000
ICC 1:100

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 1hour at room temperature.

Specificity:

This antibody was cross-adsorbed to unphosphorylated NMHC-IIA (Ser-1943) peptide before affinity purification using phospho-NMHC-IIA (Ser-1943) peptide (without carrier). The antibody detects a 200 kDa* protein corresponding to NMHC-IIA on SDS-PAGE immunoblots of human A431, Jurkat, mouse C2C12, and rat PC12 cells. This reactivity is removed after treatment with lambda phosphatase. The antibody also detects NMHC-IIA (Ser-1943) phosphorylation in chick 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.

Related Products:

MP3791 Myosin IIA Heavy Chain (a.a. 1936-1950) Rabbit Polyclonal
MX3835 phospho-Myosin IIA Heavy Chain (Ser-1943) Peptide
MM3441 Myosin Regulatory Light Chain (MLC20) Mouse Monoclonal
MP3461 Myosin Regulatory Light Chain (Ser-1), phospho-specific Rabbit
RP1361 RhoA (Ser-188), phospho-specific Rabbit Polyclonal
MK6370 Myosin IIA Heavy Chain Phospho-Regulation Antibody Sampler Kit

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