

# Myosin IIA Heavy Chain Phospho-Regulation Antibody Sampler Kit

Catalog # MK6370

## Kit Summary:

The non-muscle myosin IIA heavy chain (NMHC-IIA) phospho-regulation antibody sampler kit can be used to detect the level of phosphorylation of NMHC-IIA (Ser-1943) relative to the total expression level of NMHC-IIA. The kit also includes peptides for antibody blocking experiments and a secondary reagent for antibody detection.

## 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.

## Background 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.

## Kit Components:

Catalog#	Description	Type	Size	Applications	Species Reactivity	MW (kDa)
MP3831	Myosin IIA Heavy Chain (Ser-1943), phospho-specific	Rabbit pAb	50 µl	WB, E	H, R, M	200
MP3791	Myosin IIA Heavy Chain (a.a. 1936-1950)	Rabbit pAb	50 µl	WB, E	H, R, M	200
MX3835	phospho-Myosin IIA Heavy Chain (Ser-1943)	Peptide	50µg	AB, E		
MX3795	Myosin IIA Heavy Chain (a.a. 1936-1950)	Peptide	50µg	AB, E		
RS3251	Anti-Rabbit Ig Light-Chain Specific:HRP	Mouse mAb	100 µl	WB, E		

Applications: WB = Western blot, E = ELISA, AB = Antibody Blocking. Species: H = Human, R = Rat, M = Mouse

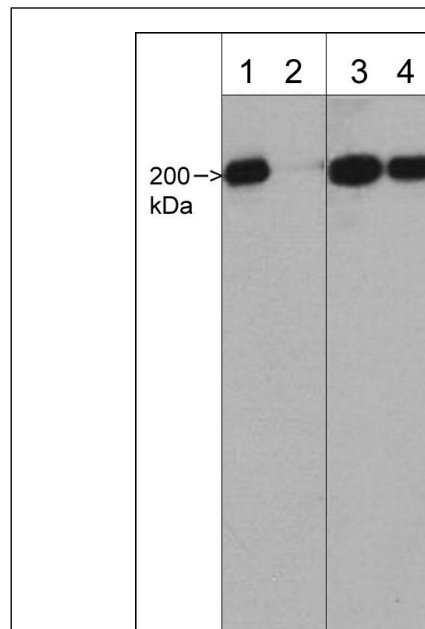
## Buffers and Storage:

Rabbit polyclonal, affinity-purified antibodies are each supplied in phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Mouse monoclonal, affinity-purified secondary antibody is supplied in phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA. Store at -20°C. Stable for 1 year.

Blocking Peptides are supplied in phosphate-buffered saline and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

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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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