

Myosin IIa Antibody

100 µl
(10 western blots)

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This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

Entrez-Gene ID #4627
Swiss-Prot Acc. #P35579

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IF-IC Endogenous	H, M, R	230 kDa	Rabbit**

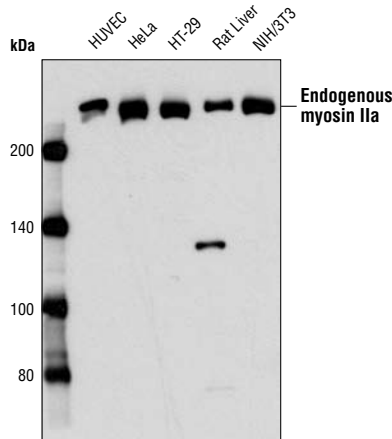
Background: Nonmuscle myosin is an actin-based motor protein essential to cell motility, cell division, migration, adhesion and polarity. The holoenzyme consists of two identical heavy chains and two sets of light chains. The light chains (MLCs) regulate myosin II activity and stability. The heavy chains (NMHCs) are encoded by three genes, MYH9, MYH10 and MYH14, which generate three different nonmuscle myosin II isoforms, IIa, IIb and IIc, respectively (reviewed in 1). While all three isoforms perform the same enzymatic tasks, namely binding to and contracting actin filaments coupled to ATP hydrolysis, their cellular functions do not appear to be redundant and they have different subcellular distributions (2-5). The carboxy-terminal tail domain of myosin II is important in isoform-specific subcellular localization (6).

Specificity/Sensitivity: Myosin IIa Antibody detects endogenous levels of total myosin IIa protein. The antibody does not cross-react with the nonmuscle heavy chains of myosin IIb or IIc.

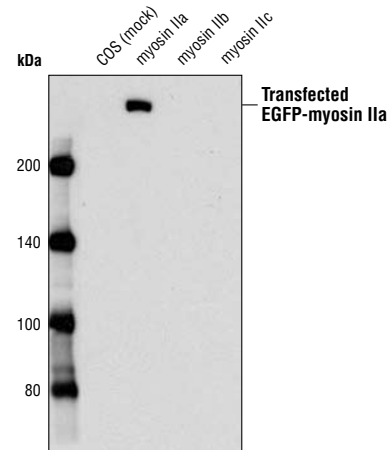
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the carboxy terminus of mouse myosin IIa.

Background References:

- (1) Conti, M.A. and Adelstein, R.S. (2008) *J Cell Sci* 121, 11-18.
- (2) Sandquist, J.C. et al. (2006) *J Biol Chem* 281, 35873-83.
- (3) Even-Ram, S. et al. (2007) *Nat Cell Biol* 9, 299-309.
- (4) Vicente-Manzanares, M. et al. (2007) *J Cell Biol* 176, 573-80.
- (5) Wylie, S.R. and Chantler, P.D. (2008) *Mol Biol Cell* 19, 3956-68.
- (6) Sandquist, J.C. and Means, A.R. (2008) *Mol Biol Cell*, Epub ahead of print.



Western blot analysis of extracts from various cell types using Myosin IIa Antibody.



Western blot analysis of extracts from COS cells, mock transfected or transfected with nonmuscle EGFP-myosin IIa, IIb or IIc, using Myosin IIa Antibody.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

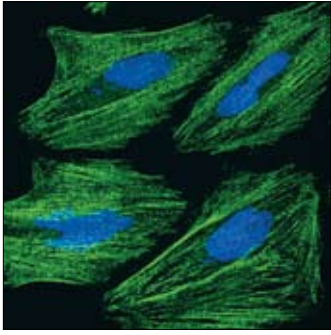
Western blotting	1:1000
Immunofluorescence (IF-IC)	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

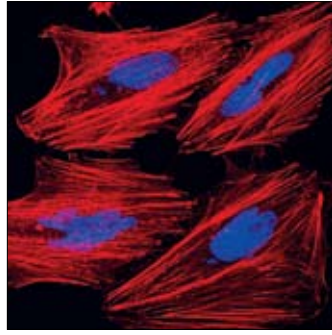
Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For Western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

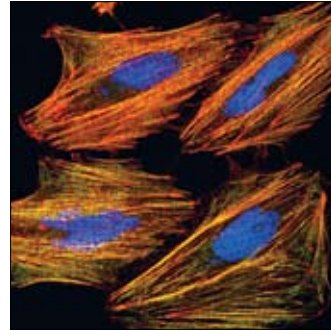
Myosin IIa



Actin



Merge



Confocal immunofluorescent analysis of HeLa cells using Myosin IIa Antibody (green) showing colocalization with actin filaments that have been labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5™ (fluorescent DNA dye).