

# Phospho-Myosin Light Chain 2 (Thr18/Ser19) Antibody



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**For Research Use Only. Not For Use In Diagnostic Procedures.**

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, (B, R, C, X, Z, Pg)	18 kDa	Rabbit**

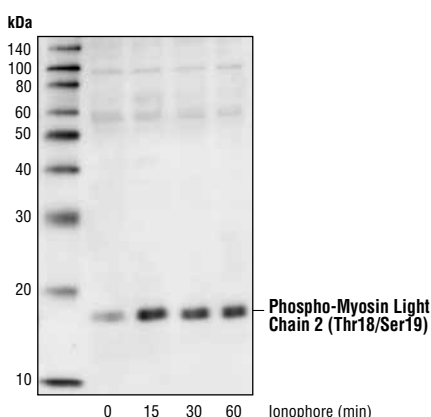
**Background:** Myosin is composed of six polypeptide chains: two identical heavy chains and two pairs of light chains. Myosin light chain 2 (MLC2), also known as myosin regulatory light chain (MRLC or RLC, LC20), has many isoforms depending on its distribution. In smooth muscle, MLC2 is phosphorylated at Thr18 and Ser19 by myosin light chain kinase (MLCK) in a Ca<sup>2+</sup>/calmodulin-dependent manner (1). This phosphorylation is correlated with myosin ATPase activity and smooth muscle contraction (2). ROCK also phosphorylates Ser19 of smooth muscle MLC2, which regulates the assembly of stress fibers (3). Phosphorylation of smooth muscle MLC2 at Ser1/Ser2 and Ser9 by PKC and cdc2 has been reported to inhibit myosin ATPase activity (4,5). Phosphorylation by cdc2 controls the timing of cytokinesis (5). Transgenic mice lacking phosphorylation sites on the cardiac muscle isoform show morphological and functional abnormalities (6).

**Specificity/Sensitivity:** Phospho-Myosin Light Chain 2 (Thr18/Ser19) Antibody detects endogenous levels of myosin light chain 2 (smooth muscle) only when dually phosphorylated at Thr18 and Ser19. The antibody does not cross-react with the cardiac isoform of myosin light chain 2.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr18/Ser19 of human myosin light chain 2. Antibodies are purified by protein A and peptide affinity chromatography.

## Background References:

- (1) Ikebe, M. and Hartshorne, D.J. (1985) *J. Biol. Chem.* 260, 10027–10031.
- (2) Tan, J. L. et al. (1992) *Annu. Rev. Biochem.* 61, 721–759.
- (3) Totsukawa, G. et al. (2000) *J. Cell Biol.* 150, 797–806.
- (4) Ikebe, M. et al. (2000) *J. Biol. Chem.* 275, 9569–9573.
- (5) Satterwhite, L.L. et al. (1992) *J. Cell Biol.* 118, 595–605.
- (6) Sanbe, A. et al. (1999) *J. Biol. Chem.* 274, 21085–21094.



Western blot analysis of extracts from HEK293 cells stimulated with ionophore A23187 for the indicated times using Phospho-Myosin Light Chain 2 (Thr18/Ser19) Antibody.

Entrez-Gene ID #10398  
Swiss-Prot Acc. #P24844

**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

**For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

**Please visit [www.cellsignal.com](http://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.**

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**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.