

#4563 Store at -20°C

# Phospho-MYPT1 (Thr853) Antibody



100 µl  
(10 western blots)

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com  
**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com  
**Web** ■ www.cellsignal.com

rev. 07/28/10

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #4659  
Swiss-Prot Acc. #014974

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, Hm, Dg	140 kDa	Rabbit**

**Background:** Protein phosphatase 1 (PP1) is a ubiquitous eukaryotic protein serine/threonine phosphatase involved in the regulation of various cell functions. Substrate specificity is determined by the binding of a regulatory subunit to the PP1 catalytic subunit (PP1c). It is estimated that over fifty different regulatory subunits exist (1).

The myosin phosphatase holoenzyme is composed of three subunits: the PP1 catalytic subunit (PP1c), a targeting/regulatory subunit (MYPT/myosin-binding subunit of myosin phosphatase) and a 20 kDa subunit of unknown function (M20). MYPT binding to PP1c  $\delta$  alters the conformation of the catalytic cleft and increases enzyme activity and specificity (2). Two MYPT isoforms that are 61% identical have been described. MYPT1 is widely expressed while MYPT2 expression appears to be exclusive to heart and brain (3). Related family members also include MBS85, MYPT3 and TIMAP (4).

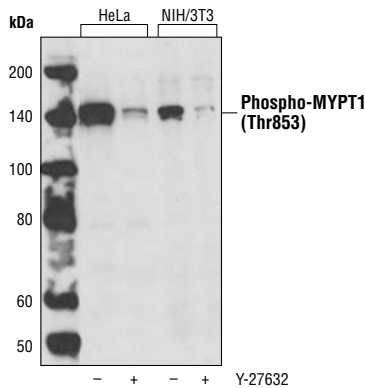
Myosin phosphatase regulates the interaction of actin and myosin in response to signaling through the small GTPase Rho. Rho activity inhibits myosin phosphatase via Rho-associated kinase (ROCK). Phosphorylation of MYPT1 at Thr696 and Thr853 results in phosphatase inhibition and cytoskeletal reorganization (5,6).

**Specificity/Sensitivity:** Phospho-MYPT1 (Thr853) Antibody detects endogenous levels of MYPT1 only when phosphorylated at Thr853. The antibody cross-reacts with an unidentified protein at 40 kDa.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr853 of human MYPT1. Antibodies are purified using protein A and peptide affinity chromatography.

**Background References:**

- (1) Cohen, P.T. (2002) *J Cell Sci* 115, 241-56.
- (2) Terrak, M. et al. (2004) *Nature* 429, 780-4.
- (3) Fujioka, M. et al. (1998) *Genomics* 49, 59-68.
- (4) Ito, M. et al. (2004) *Mol Cell Biochem* 259, 197-209.
- (5) Birukova, A.A. et al. (2004) *Microvasc Res* 67, 64-77.
- (6) Birukova, A.A. et al. (2004) *J Cell Physiol* 201, 55-70.



Western blot analysis of extracts from HeLa or NIH/3T3 cells, untreated or treated with the ROCK inhibitor Y-27632, using Phospho-MYPT1 (Thr853) 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

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.**

**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.