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#5143

## MYPT1 Antibody Sampler Kit

1 Kit (5 x 20 microliters)

**For Research Use Only. Not for Use in Diagnostic Procedures.**

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-MYPT1 (Ser507) Antibody	3040	20 µl	140 kDa	Rabbit
Phospho-MYPT1 (Ser668) Antibody	3048	20 µl	140 kDa	Rabbit
Phospho-MYPT1 (Thr853) Antibody	4563	20 µl	140 kDa	Rabbit
Phospho-MYPT1 (Thr696) Antibody	5163	20 µl	140 kDa	Rabbit
MYPT1 (D6C1) Rabbit mAb	8574	20 µl	140 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit [cellsignal.com](http://cellsignal.com) for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

### Description

The MYPT1 Antibody Sampler Kit is an economical way to examine the total protein levels of MYPT1 as well as MYPT1 phosphorylated at Ser507, Ser668, Thr853, and Thr696. The kit includes enough primary and secondary antibodies to perform two Western blot experiments.

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

### 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: PP1c, a targeting/regulatory subunit (MYPT/myosin-binding subunit of myosin phosphatase), and a 20 kDa subunit of unknown function (M20). MYPT binding to PP1cδ 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 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).

Phospho-MYPT1 (Ser507) and phospho-MYPT1 (Ser668) antibodies are directed at sites that were identified at Cell Signaling Technology (CST) using PhosphoScan<sup>®</sup>, CST's LC-MS/MS platform for modification site discovery. Phosphorylation at these sites was discovered using an Akt substrate antibody. Please visit PhosphoSitePlus<sup>®</sup>, CST's modification site knowledgebase, at [www.phosphosite.org](http://www.phosphosite.org) for more information.

### 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.

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