

#8574 Store at -20C

MYPT1 (D6C1) Rabbit mAb


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Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-P, IF-IC	H Mk Dg	Endogenous	140	Rabbit IgG	#O14974	4659

Product Usage Information

Application

 Western Blotting
Immunoprecipitation
Immunohistochemistry (Paraffin)
Immunofluorescence (Immunocytochemistry)

Dilution

 1:1000
1:200
1:50 - 1:200
1:200

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.

For a carrier free (BSA and azide free) version of this product see product #24817.

Specificity / Sensitivity

MYPT1 (D6C1) Rabbit mAb recognizes endogenous levels of total MYPT1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human MYPT1 protein.

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 PP1c 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).

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.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)
IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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