

#2634 Store at -20°C

MYPT1 Antibody


Cell Signaling
TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, W-S	H M R Hm Mk	Endogenous	140	Rabbit	#O14974	4659

Product Usage Information	Application Western Blotting Simple Western™	Dilution 1:1000 1:50 - 1:250
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.	
Specificity / Sensitivity	MYPT1 Antibody detects endogenous levels of total MYPT1 protein. The antibody is unlikely to cross-react with MYPT2 and does not cross-react with other family members.	
Species predicted to react based on 100% sequence homology:	Chicken, Zebrafish, Bovine, Dog, Pig	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide correspondent to amino-terminal residues of human MYPT1. Antibodies are purified using protein A and peptide affinity chromatography.	
Background	<p>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).</p> <p>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).</p> <p>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).</p>	
Background References	1. Cohen, P.T. (2002) <i>J Cell Sci</i> 115, 241-56. 2. Terrak, M. et al. (2004) <i>Nature</i> 429, 780-4. 3. Fujioka, M. et al. (1998) <i>Genomics</i> 49, 59-68. 4. Ito, M. et al. (2004) <i>Mol Cell Biochem</i> 259, 197-209. 5. Birukova, A.A. et al. (2004) <i>Microvasc Res</i> 67, 64-77. 6. Birukova, A.A. et al. (2004) <i>J Cell Physiol</i> 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 W-S: Simple Western™
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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