

#2613 Store at -20C

HP1 β Antibody


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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Endogenous	25	Rabbit	#P83916	10951

Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	This antibody detects endogenous levels of HP1 beta protein. The antibody does not cross-react with HP1 alpha or HP1 gamma proteins.	
Species predicted to react based on 100% sequence homology:	Bovine	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of human HP1 beta. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>Heterochromatin protein 1 (HP1) is a family of heterochromatic adaptor molecules involved in both gene silencing and higher order chromatin structure (1). All three HP1 family members (α, β, and γ) are primarily associated with centromeric heterochromatin; however, HP1β and γ also localize to euchromatic sites in the genome (2,3). HP1 proteins are approximately 25 kDa in size and contain a conserved amino-terminal chromodomain, followed by a variable hinge region and a conserved carboxy-terminal chromoshadow domain. The chromodomain facilitates binding to histone H3 tri-methylated at Lys9, a histone "mark" closely associated with centromeric heterochromatin (4,5). The variable hinge region binds both RNA and DNA in a sequence-independent manner (6). The chromoshadow domain mediates the dimerization of HP1 proteins, in addition to binding multiple proteins implicated in gene silencing and heterochromatin formation, including the SUV39H histone methyltransferase, the DNMT1 and DNMT3a DNA methyltransferases, and the p150 subunit of chromatin-assembly factor-1 (CAF1) (7-9). In addition to contributing to heterochromatin formation and propagation, HP1 and SUV39H are also found complexed with retinoblastoma (Rb) and E2F6 proteins, both of which function to repress euchromatic gene transcription in quiescent cells (10,11). HP1 proteins are subject to multiple types of post-translational modifications, including phosphorylation, acetylation, methylation, ubiquitination, and sumoylation, suggesting multiple means of regulation (12-14).</p>	
Background References	<ol style="list-style-type: none"> 1. Maison, C. and Almouzni, G. (2004) <i>Nat. Rev. Mol. Cell Biol.</i> 5, 296-304. 2. Minc, E. et al. (2000) <i>Cytogenet. Cell Genet.</i> 90, 279-284. 3. Nielsen, A.L. et al. (2001) <i>Mol. Cell</i> 7, 729-739. 4. Lachner, M. et al. (2001) <i>Nature</i> 410, 116-120. 5. Bannister, A.J. et al. (2001) <i>Nature</i> 410, 120-124. 6. Muchardt, C. et al. (2002) <i>EMBO Rep.</i> 3, 975-981. 7. Yamamoto, K. and Sonoda, M. (2003) <i>Biochem. Biophys. Res. Commun.</i> 301, 287-292. 8. Fuks, F. et al. (2003) <i>Nucleic Acids Res.</i> 31, 2305-2312. 9. Murzina, N. et al. (1999) <i>Mol. Cell</i> 4, 529-540. 10. Nielsen, S.J. et al. (2001) <i>Nature</i> 412, 561-565. 11. Ogawa, H. et al. (2002) <i>Science</i> 296, 1132-1136. 12. Minc, E. et al. (1999) <i>Chromosoma</i> 108, 220-234. 13. Zhao, T. et al. (2001) <i>J. Biol. Chem.</i> 276, 9512-9518. 14. Lomberg, G. et al. (2006) <i>Nat. Cell Biol.</i> 8, 407-415. 	

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

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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