

#2619 Store at -20°C

HP1 γ Antibody

✓ 100 μ l
(10 western blots)

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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.

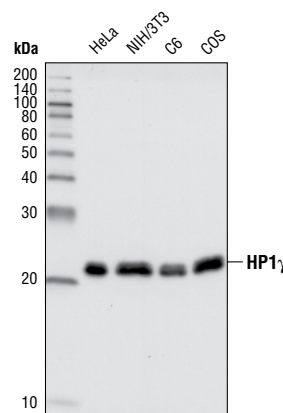
Entrez-Gene ID # 11335
Swiss-Prot Acc. # Q13185

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IF-IC, F	H, M, R, Mk	22 kDa	Rabbit**

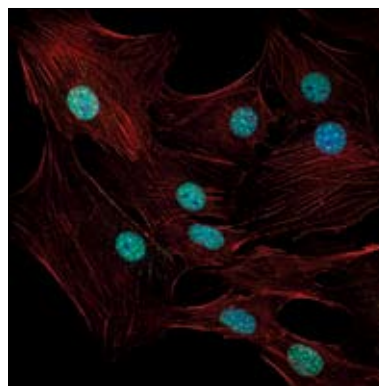
Background: Heterochromatin protein 1 (HP1) is a family of heterochromatic adaptor molecules involved in both gene silencing and higher order chromatin structure (1). All three HP1 family members (α , β and γ) are primarily associated with centromeric heterochromatin; however, HP1 β and γ also localize to euchromatic sites in the genome (2,3). HP1 proteins are approximately 25 kDa in size and each contains 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 on 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).

Specificity/Sensitivity: HP1 γ Antibody detects endogenous levels of total HP1gamma protein. The antibody does not cross-react HP1alpha or HP1beta proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the amino terminus of human HP1 γ . Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of lysates from HeLa, NIH/3T3, C6 and COS cells, using HP1 γ antibody.



Confocal immunofluorescent image of HeLa cells labeled with HP1 γ Antibody (green). Actin filaments have been labeled with Alexa Fluor® 555 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Flow cytometric analysis of untreated HeLa cells, using HP1 γ antibody (blue) compared to a nonspecific negative control antibody (red).

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.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

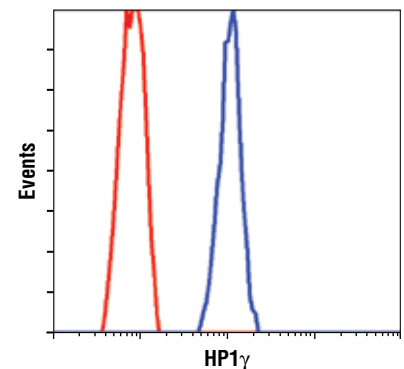
Western blotting	1:1000
Immunoprecipitation	1:25
Immunofluorescence (IF-IC)	1:400
Flow Cytometry	1:200

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- (1) Maison, C. and Almouzni, G. (2004) *Nat. Rev. Mol. Cell Biol.* 5, 296-304.
- (2) Minc, E. et al. (2000) *Cytogenet. Cell Genet.* 90, 279-284.
- (3) Nielsen, A.L. et al. (2001) *Mol. Cell* 7, 729-739.
- (4) Lachner, M. et al. (2001) *Nature* 410, 116-120.
- (5) Bannister, A.J. et al. (2001) *Nature* 410, 120-124.
- (6) Muchardt, C. et al. (2002) *EMBO Rep.* 3, 975-981.
- (7) Yamamoto, K. and Sonoda, M. (2003) *Biochem. Biophys. Res. Commun.* 301, 287-292.
- (8) Fuks, F. et al. (2003) *Nucleic Acids Res.* 31, 2305-2312.
- (9) Murzina, N. et al. (1999) *Mol. Cell* 4, 529-540.
- (10) Nielsen, S.J. et al. (2001) *Nature* 412, 561-565.
- (11) Ogawa, H. et al. (2002) *Science* 296, 1132-1136.
- (12) Minc, E. et al. (1999) *Chromosoma* 108, 220-234.
- (13) Zhao, T. et al. (2001) *J. Biol. Chem.* 276, 9512-9518.
- (14) Lomber, G. et al. (2006) *Nat. Cell Biol.* 8, 407-415.



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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.