

#3379 Store at -20°C

PRMT4/CARM1 (C31G9) Rabbit mAb



✓ 100 µl
(10 western blots)

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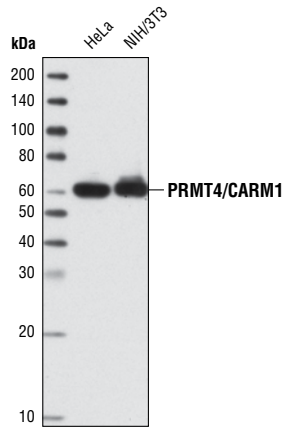
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Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC Endogenous	H, M, R, Mk	63 kDa	Rabbit IgG**

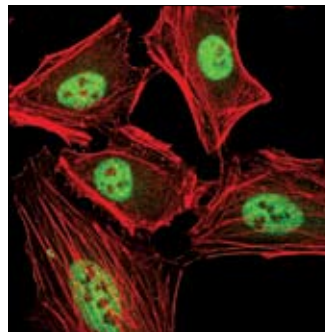
Background: Protein arginine N-methyltransferase 1 (PRMT1) is a member of the protein arginine N-methyltransferase (PRMT) family of proteins that catalyze the transfer of a methyl group from S-adenosylmethionine (AdoMet) to a guanidine nitrogen of arginine (1). Though all PRMT proteins catalyze the formation of mono-methyl arginine, Type I PRMTs (PRMT1, 3, 4, and 6) add an additional methyl group to produce an asymmetric di-methyl arginine while Type II PRMTs (PRMT 5 and 7) produce symmetric di-methyl arginine (1). Mono-methyl arginine, but not di-methyl arginine, can be converted to citrulline through deimination catalyzed by enzymes such as PAD14 (2). Most PRMTs, including PRMT1, methylate arginine residues found within glycine-arginine rich (GAR) protein domains, such as RGG, RG, and RXR repeats (1). However, PRMT4/CARM1 and PRMT5 methylate arginine residues within PGM (proline-, glycine-, methionine-rich) motifs (3). PRMT1 methylates Arg3 of histone H4 and cooperates synergistically with p300/CBP to enhance transcriptional activation by nuclear receptor proteins (4-6). In addition, PRMT1 methylates many non-histone proteins, including the orphan nuclear receptor HNF4 (6), components of the heterogeneous nuclear ribonucleoprotein (hnRNP) particle (7), the RNA binding protein Sam68 (8), interleukin enhancer-binding factor 3 (ILF3) (9) and interferon- α and β receptors (10). These interactions suggest additional functions in transcriptional regulation, mRNA processing and signal transduction. Alternative mRNA splicing produces three enzymatically active PMRT1 isoforms that differ in their amino-terminal regions (11). PRMT1 is localized to the nucleus or cytoplasm, depending on cell type (12,13) and appears in many distinct protein complexes. ILF3, TIS21 and the leukemia-associated BTG1 proteins bind PRMT1 to regulate its methyltransferase activity (9,14).

Specificity/Sensitivity: PRMT4/CARM1 (C31G9) Rabbit mAb detects endogenous levels of PRMT4/CARM1 protein (both isoforms). This antibody does not cross-react with other PRMT proteins.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the amino terminus of the human PRMT4/CARM1 protein.



Western blot analysis of extracts from HeLa and NIH/3T3 cells using PRMT4/CARM1 (C31G9) Rabbit mAb.



Confocal immunofluorescent analysis of HeLa cells using PRMT4/CARM1 (C31G9) Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red).

Entrez-Gene ID #10498
Swiss-Prot Acc. #Q86X55

Storage: Supplied in 10 mM 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.

*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	1:50
Immunofluorescence (IF-IC)	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) Bedford, M.T. and Richard, S. (2005) *Mol. Cell* 18, 263–272.
- (2) Wang, Y. et al. (2004) *Science* 306, 279–283.
- (3) Cheng, D. et al. (2007) *Mol. Cell* 25, 71–83.
- (4) Wang, H. et al. (2001) *Science* 293, 853–857.
- (5) Strahl, B.D. et al. (2001) *Curr. Biol.* 11, 996–1000.
- (6) Barrero, M.J. and Malik, S. (2006) *Mol. Cell* 24, 233–243.
- (7) Nichols, R.C. et al. (2000) *Exp. Cell Res.* 256, 522–532.
- (8) Côté, J. et al. (2003) *Mol. Biol. Cell* 14, 274–287.
- (9) Tang, J. et al. (2000) *J. Biol. Chem.* 275, 19866–19876.
- (10) Abramovich, C. et al. (1997) *EMBO J.* 16, 260–266.
- (11) Scorilas, A. et al. (2000) *Biochem. Biophys. Res. Commun.* 278, 349–359.
- (12) Frankel, A. et al. (2002) *J. Biol. Chem.* 277, 3537–3543.
- (13) Herrmann, F. et al. (2005) *J. Biol. Chem.* 280, 38005–38010.
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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.

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