

PRMT1 (F339) Antibody

✓ 100 µl
(10 western blots)

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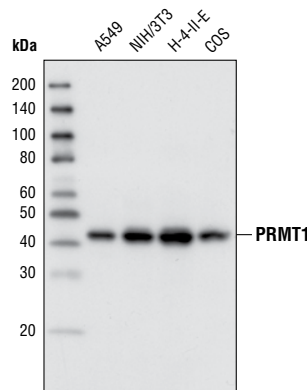
rev. 01/11/10

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 #3276
Swiss-Prot Acc. #Q99873

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, (B)	41 kDa	Rabbit**

Background: Protein arginine N-methyltransferase 1 (PRMT1) is a member of the protein arginine N-methyltransferase (PRMT) family of proteins, which catalyze the transfer of a methyl group from S-adenosylmethionine (AdoMet) to a guanidine nitrogen of arginine (1). There are two types of PRMT proteins. While both types catalyze the formation of mono-methyl arginine, Type I PRMTs (PRMT1, 3, 4, and 6) add an additional methyl group to produce asymmetric di-methyl arginine and 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 performed by enzymes such as PADI4 (2). Most of the PRMTs, including PRMT1, methylate arginine residues found within glycine-arginine rich (GAR) domains of proteins, such as RGG, RG, and RXR repeats (1). However, PRMT4/CARM1 and PRMT5 instead 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 (4,5,6). 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), suggesting additional functions in transcriptional regulation, mRNA processing and signal transduction. Alternative mRNA splicing results in three enzymatically active isoforms of PRMT1 protein that differ in their amino terminal regions (11). PRMT1 is localized in 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 to PRMT1 and regulate its methyltransferase activity (9,14).



Western blot analysis of cell lysates from A549, NIH/3T3, H-4-II-E and COS cells using PRMT1 Antibody.

Specificity/Sensitivity: PRMT1 (F339) Antibody detects endogenous levels of total PRMT1 protein (all three isoforms). The antibody does not cross-react with other PRMT proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to the carboxy terminus of human PRMT1. Antibodies are purified by protein A and peptide affinity chromatography.

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.

*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

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.
- (14) Lin, W.J. et al. (1996) *J. Biol. Chem.* 271, 15034–15044.

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

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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.