Store at -20°C

#4438

PRMT4/CARM1 Antibody

☑ 100 µl
(10 western blots)

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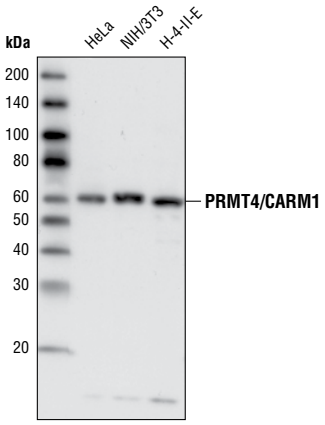
Entrez-Gene ID #10498
Swiss-Prot Acc. #Q86X55

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

Background: Protein arginine N-methyltransferase 4 (PRMT4), also known as coactivator-associated arginine methyltransferase 1 (CARM1), 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 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). PRMT4 methylates Arg2, 17 and 26 of histone H3 and cooperates synergistically with p300/CBP and p160 coactivators to enhance transcriptional activation by nuclear receptor proteins (4). In addition, PRMT4 methylates many non-histone proteins, including transcriptional coactivators (p300/CBP, SRC-3) (5,6,7,8), splicing factors (SmB, CA150, SAP49, UIC) (3), RNA binding proteins (PABP1, Sam68, HuD, HuR) (9,10,11), and thymocyte cyclic AMP-regulated phosphoprotein (TARPP) (12), suggesting additional functions in transcriptional regulation, mRNA processing, and thymocyte maturation. Methylation of the splicin factor CA150 by PRMT4 facilitates an interaction with the Tudor domain of SMN, suggesting a role for PRMT4 in spinal muscular atrophy (3).

Specificity/Sensitivity: PRMT4/CARM1 Antibody detects endogenous levels of PRMT4/CARM1 protein (isoform 1). The antibody will not detect isoform 2 of PRMT4/CARM1. This antibody does not cross-react with other PRMT proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing rabbits with a synthetic peptide (KLH-coupled) corresponding to the carboxy terminus of the human PRMT4/CARM1 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of whole cell lysates from HeLa, NIH/3T3 and H-4-II-E cells using PRMT4/CARM1 Antibody.

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) Chen, D. et al. (2000) *J. Biol. Chem.* 275, 40810–40816.
(5) Lee, Y.H. et al. (2005) *Proc. Natl. Acad. Sci. USA* 102, 3611–3616.
(6) Xu, W. et al. (2001) *Science* 294, 2507–2511.
(7) Naeem, H. et al. (2007) *Mol. Cell Biol.* 27, 120–134.
(8) Feng, Q. et al. (2006) *Mol. Cell Biol.* 26, 7846–7857.
(9) Lee, J. and Bedford, M.T. (2002) *EMBO Rep.* 3, 268–273.
(10) Côté, J. et al. (2003) *Mol. Biol. Cell* 14, 274–287.
(11) Fujiwara, T. et al. (2006) *Mol. Cell Biol.* 26, 2273–2285.
(12) Kim, J. et al. (2004) *J. Biol. Chem.* 279, 25339–25344.

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.*

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

***Species cross-reactivity is determined by western blot.**

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

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.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 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.