

PRMT4/CARM1 Antibody

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, IP	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 63	Source/Isotype: Rabbit	UniProt ID: #Q86X55	Entrez-Gene Id: 10498
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Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

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.

Specificity/Sensitivity

PRMT4/CARM1 Antibody detects endogenous levels of total PRMT4/CARM1 isoform 1 and isoform 3 proteins. The antibody does not cross-react with the isoform 2 of PRMT4/CARM1 or other PRMT proteins.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of the human PRMT4/CARM1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

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 splicing factor CA150 by PRMT4 facilitates an interaction with the Tudor domain of SMN, suggesting a role for PRMT4 in spinal muscular atrophy (3).

Background References

1. Bedford, M.T. and Richard, S. (2005) *Mol. Cell* 18, 263-272.
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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.
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12. Kim, J. et al. (2004) *J. Biol. Chem.* 279, 25339-25344.

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

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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