Revision 3

Store at -20C

#12495

PRMT4/CARM1 (3H2) Mouse mAb

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H M R Mk	Endogenous	63	Mouse IgG1	#Q86X55	10498

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Immunofluorescence (Immunocytochemistry)	1:50 - 1:200

Storage

Supplied in 10 mM sodium 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.

Specificity/Sensitivity

PRMT4/CARM1 (3H2) Mouse mAb recognizes endogenous levels of total PRMT4/CARM1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the human CARM1 protein.

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 PADI4 (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 PRMT1 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).

Background References

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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.
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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 **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

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

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Limited Uses