

PRMT4 (CARM1, Coactivator-Associated Arginine Methyltransferase 1)

CATALOG NO.: HMT-11-120

LOT NO.:

DESCRIPTION: Human recombinant PRMT4 (residues 2-608 (C-terminus); Genbank Accession # NM_199141) expressed with an N-terminal GST-tag, in *E. coli*. MW = 91.7 kDa. PRMT4, a type I arginine methyltransferase, catalyzes the transfer of a methyl group from S-adenosyl-L-methionine (SAM) to an ω-nitrogen of the guanidino function of protein L-arginine residues (ω-monomethylation) and the transfer of a second methyl group to the same nitrogen, yielding asymmetric dimethylarginine (aDMA)¹. PRMT4 methylates histone H3², especially at Arg-17^{1,3,4}, (H3R17) promoting active transcription²⁻⁵. Other PRMT4 substrates include p300⁶, multiple RNA-binding proteins⁷⁻⁹ and splicing factors¹⁰. PRMT4 acts as a coactivator for various transcription factors, either by binding them directly⁴ or, in the case of nuclear receptors, via its interaction with p160 coactivators such as GRP1².

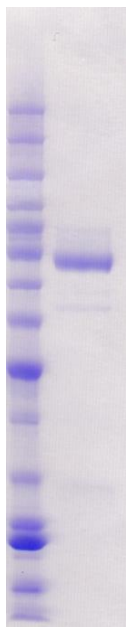
PURITY: >90% by SDS-PAGE.

ASSAY CONDITIONS: RBC's PRMT4 displays histone methyltransferase activity with recombinant human histone H3.3 (Cat. #HMT-11-134) and [³H]-SAM as substrates. Activity was determined as TCA-precipitated counts in a scintillation/filter plate assay (Multiscreen FB, Topcount). Reaction conditions: 50 mM Tris-HCl, pH 8.5, 50 mM NaCl, 5 mM MgCl₂, 1 mM DTT, 1 mM PMSF, 30°C, 60 min. with substrates as indicated above.

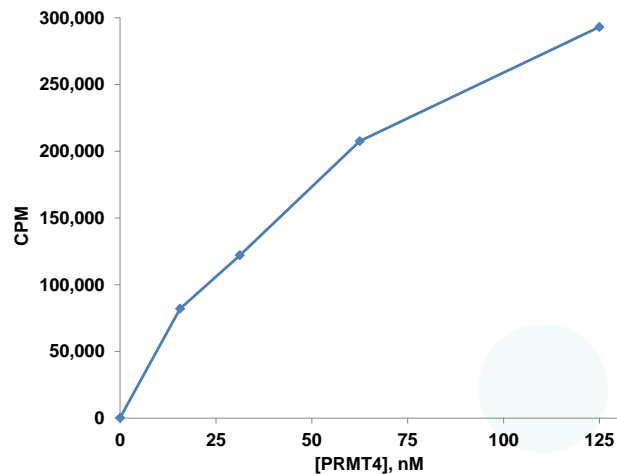
SUPPLIED AS: _ μg/μl total protein in 50 mM HEPES/NaOH, pH 7.1, 180 mM NaCl, 2 mM DTT, 10% (v/v) glycerol as determined by OD₂₈₀.

STORAGE: -70°C. Thaw quickly and store on ice before use. The remaining, unused, undiluted enzyme should be refrozen quickly by, for example, snap freezing in a dry/ice ethanol bath or liquid nitrogen. Freezing and storage of diluted enzyme is not recommended.

REFERENCES: 1) B.T. Schurter *et al. Biochemistry* 2001 **40** 5747; 2) D. Chen *et al. Science* 1999 **284** 2174; 3) M. Ananthanarayanan *et al. J. Biol. Chem.* 2004 **279** 54348; 4) F. Miao *et al. Mol. Endocrinol.* 2006 **20** 1562; 5) J. Wu & W. Xu *Proc. Natl. Acad. Sci. USA* 2012 **109** 5675; 6) W. Xu *et al. Science* 2001 **294** 2507; 7) H. Lee & M.T. Bedford *EMBO Rep.* 2002 **3** 268; 8) H. Li *et al. J. Biol. Chem.* 2002 **277** 44623; 9) T. Fujiwara *et al. Mol. Cell. Biol.* 2006 **26** 2273; 10) D. Cheng *et al. Mol. Cell.* 2007 **25** 71;



Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 2 μg of RBC PRMT4.
MW markers (left) are, from top, 220, 160, 120, 100, 90, 80, 70, 60, 50, 40, 30, 25, 20, 15, & 10 kDa.



Methyltransferase Activity of PRMT4. Methylation determined as TCA-precipitable counts in a scintillation/filter plate assay. Reactions were 60 min., 30°C, with 1 μM [³H]-SAM and 1 μM recombinant histone H3.3 (Cat. #HMT-11-34) as substrates.

This product is not intended for therapeutic or diagnostic use in animals or in humans.