REACTION BIOLOGY

PRODUCT DATASHEET

PRMT8 (GST/Strep) (Protein arginine N-methyltransferase 8; HRMT1L3, HRMT1L4)

CATALOG NO.: HMT-21-657 **LOT NO.:**

DESCRIPTION: Human recombinant PRMT8 (residues 61-394 (C-terminus); Genbank Accession # NM_019854) expressed with N-terminal GST fusion protein and C-terminal Strep-tag, in *Sf9* insect cells. MW = 67.09 kDa. PRMT8, 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]. Although highly homologous (>80% identity) to the major arginine methyltransferase PRMT1, distinctive characteristics of PRMT8 include its unique, regulatory 76 residue N-terminal domain and its brain-specific expression[1], especially enhanced in the cortex[2]. Although transfected GFP-PRMT8 can be myristoylated and localized to the plasma membrane[1], other evidence suggests that the endogenous, central nervous system PRMT8 is a nuclear protein[3]. Removal of the N-terminal 60 amino acids of PRMT8 has been shown to dramatically enhance PRMT8 catalytic activity[4]. RBC's PRMT8 is deleted for residues 1-60 and is highly active with the substrate GST-GAR.

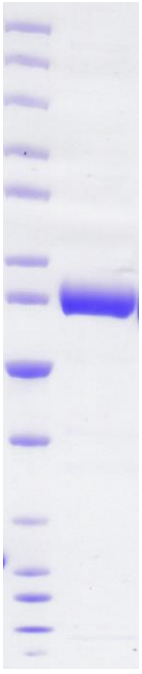
PURITY: >90% by SDS-PAGE.

ASSAY CONDITIONS: RBC's PRMT8 displays methyltransferase activity at enzyme concentrations of 15.6 nM and above, with GST-GAR (GST fused to fibrillarin residues 2-148) and [^{3}H]-S-adenosyl-L-methionine 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 $MgCl_2$, 1 mM DTT, 30°C, 60 min. with substrates as indicated above.

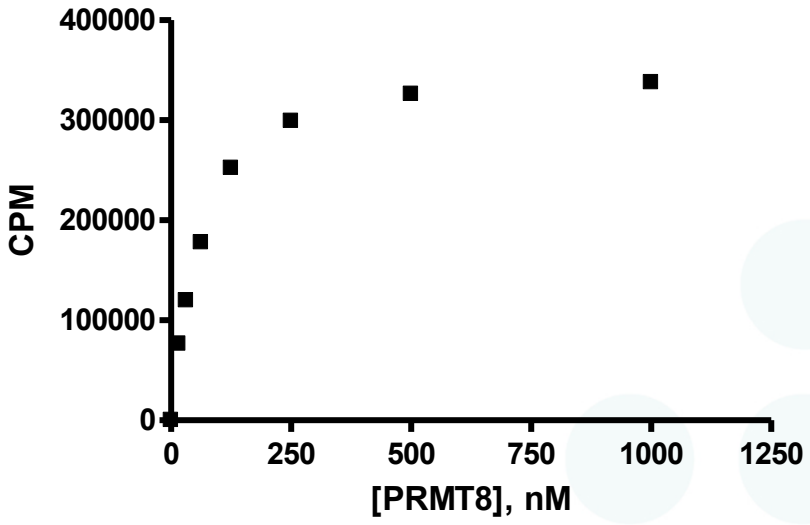
SUPPLIED AS: 2.13 µg/µl in 50mM Tris-HCl pH 8, 500mM NaCl, 10% glycerol, 0.25mM TCEP, 2 mM DTT as determined by OD_{280}

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) J. Lee *et al. J. Biol. Chem.* 2005 **280** 32890; 2) M.K. Weng *et al. PLOS One* 2012 **7** e36708; 3) A. Kousaka *et al. Neuroscience* 2009 **163** 1146; 4) J. Sayegh *et al. J. Biol. Chem.* 2007 **282** 36444



Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 4 µg of RBC PRMT8. MW markers (left) are, from top, 200, 150, 120, 100, 85, 70, 60, 50, 40, 30, 25, 20, 15, 10 kDa.



Methyltransferase Activity of PRMT8. Methylation determined as TCA-precipitable counts in a scintillation/filter plate assay. Reactions were 20µL, 60 min., 30°C, with 1 µM GST-GAR and 1µM [3H]-SAM as substrates.

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