

## SUV39H2 (GST)

(Su(var)3-9 homolog 2; Histone H3-K9 methyltransferase 2)

**CATALOG NO.:** HMT-11-418

**LOT NO.:**

**DESCRIPTION:** Human recombinant SUV39H2 (residues 46-410; Genbank Accession # NM\_001193424) expressed as an N-terminal GST fusion protein, with a C-terminal His-tag, in *E. coli*. MW = 70.0 kDa. Catalyzes the transfer of methyl groups from S-adenosyl-L-methionine (SAM) to the  $\epsilon$ -amino function of protein L-lysine residues, specifically to lysine-9 of histone H3<sup>1</sup>. Along with its close homolog, SUV39H1, SUV39H2 is responsible for the transcriptionally repressive modification, H3K9me3, in heterochromatin<sup>1-4</sup>. Although overlapping in expression and seemingly redundant in function during mouse embryogenesis, SUV39H2 expression is largely testis-specific in adult mice and SUV39H2 protein is enriched at silenced sex chromosomes (XY body) in meiotic male germ cells<sup>1</sup>. Mice deleted in both SUV39H2 and SUV39H1 have elongated telomeres, implying a role for these enzymes and H3K9 methylation in regulation of telomere length<sup>4</sup>. Polymorphisms in the human SUV39H2 gene have been associated with complications of type I diabetes<sup>5</sup> and lung cancer risk<sup>6</sup>.

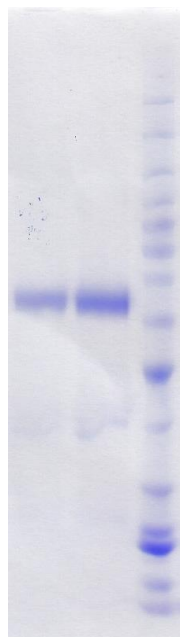
**PURITY:** >90% by SDS-PAGE.

**ASSAY CONDITIONS:** RBC's SUV39H2 displays histone methyltransferase activity at enzyme concentrations of 15 nM and above, 30°C, in scintillation/filter plate assay with H3K9-containing substrates, including recombinant human histone H3.3 and chicken core histones. Reaction conditions are: 50 mM Tris-HCl, pH 8.5, 50 mM NaCl, 5 mM MgCl<sub>2</sub>, 1 mM DTT, 1 mM PMSF, 25  $\mu$ L reactions with substrates as indicated (see Figure below).

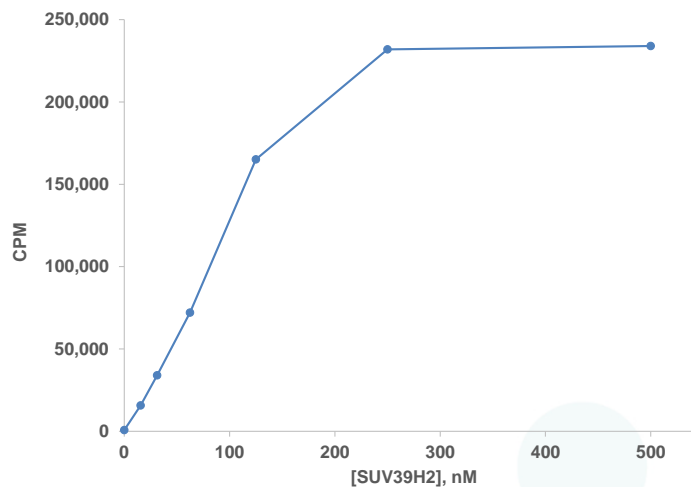
**SUPPLIED AS:** \_\_\_  $\mu$ g/ $\mu$ l in 50 mM Tris/HCl, pH 7.5, 500 mM NaCl, 20% (v/v) glycerol, 1mM TCEP as determined by OD<sub>280</sub>

**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) D. O'Carroll *et al. Mol. Cell. Biol.* 2000 **20** 9423 2) S. Rea *et al. Nature* 2000 **406** 593; 3) A.H. Peters *et al. Cell* 2001 **107** 323; 4) M. Garcia-Cao *et al. Nat. Genet.* 2004 **36** 94; 5) A. Syreeni *et al. Diabetes* 2011 **60** 3073; 6) K.A. Yoon *et al. Carcinogenesis* 2006 **27** 2217



**Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 2  $\mu$ g and 4  $\mu$ g of purified SUV39H2 (GST).** MW markers at right, from top are: 220, 160, 120, 100, 90, 80, 70, 60, 50, 40, 30, 25, 20, 15 & 10 kDa.



**Histone Methylation Activity of SUV39H2 (GST) with Recombinant Histone H3.3.** Assays were performed with a scintillation/filter plate assay. Incubations were 60 min., 30°C with 1  $\mu$ M recombinant histone H3.3 (RBC Cat. # HMT-11-134) plus 1  $\mu$ M [<sup>3</sup>H]-SAM.

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

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