PRODUCT DATASHEET

SETD2 (GST) (HYPB, Huntington-interacting protein, KMT3A)

CATALOG NO.: HMT-11-128 **LOT NO.:**

DESCRIPTION: Human recombinant, SETD2 (residues 1433-1711; Genbank Accession # NM_014159) expressed as an N-terminal GST-fusion protein in *E. coli*. MW = 58.7 kDa. Catalyzes the transfer of methyl groups from S-adenosyl-L-methionine (SAM) to the ε-amino function of protein L-lysine residues, specifically histone H3 lysine-36 (H3K36)[1]. While not required to produce H3K36me1/2, SETD2 is the enzyme largely responsible for trimethylation at H3K36 (H3K36me3) in mouse fibroblasts, a mark associated with transcription elongation[2]. In development, SETD2 is required for embryonic vascular remodeling[3]. There is evidence that SETD2 acts as a tumor suppressor in breast[4,5] and clear cell renal cell[6] cancers. RBC's SETD2 (GST) comprises the catalytic domain (AWS/SET/Post-SET) fused to GST.

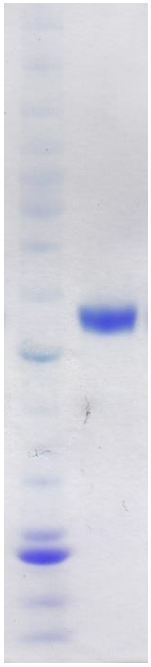
PURITY: >90% by SDS-PAGE.

ASSAY CONDITIONS: RBC's SETD2 (GST) displays histone methyltransferase activity with nucleosomal substrates (See Figure below). Reaction conditions are: 50 mM Tris-HCl, pH 8.5, 50 mM NaCl, 5 mM $MgCl_2$, 1 mM DTT, 1 mM PMSF, 0.05 mg/mL chicken nucleosomes (as [DNA]), 1 µM [^{3}H]-SAM.

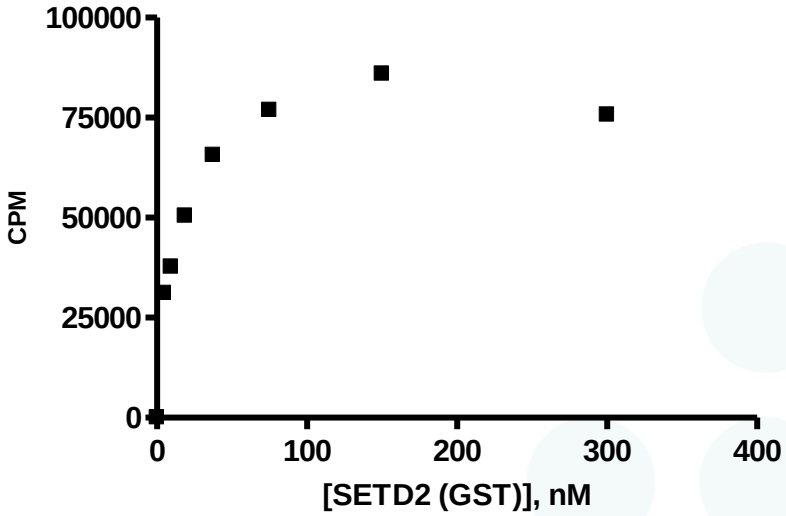
SUPPLIED AS: ___ µg/µl total protein in 50 mM Tris/HCl pH 7.5, 150 mM NaCl, 1 mM TCEP, 10% glycerol (w/v) as determined by OD_{280}.

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) X.-J. Sun *et al. J. Biol. Chem.* 2005 **280** 35261; 2) J.W. Edmunds *et al. EMBO J.* 2008 **27** 406; 3) M. Hu *et al. Proc. Natl. Acad. Sci. USA* 2010 **107** 2956; 4) W. Al Sarakbi *et al. BMC Cancer* 2009 **9** 290; 5) R.F. Newbold & K. Mokbel *Anticancer Res.* 2010 **30** 3309; 6) G. Duns *et al. Cancer Res.* 2010 **70** 4287



Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 4 µg of purified SETD2 (GST). 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 SETD2 (GST). Methylation determined as TCA-precipitable counts in a scintillation/filter plate assay. 25µL reactions were 60 min., 30°C, with 1 µM [^{3}H]-SAM and 0.05 mg/mL ChN oligonucleosomes (RBC Cat.# HMT-35-177) as substrates.

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