

## SETD2 (His)

(HYPB, Huntington-interacting protein, KMT3A)

**CATALOG NO.:** HMT-11-129

**LOT NO.:**

**DESCRIPTION:** Human recombinant, SETD2 (residues 1433-1711; Genbank Accession # NM\_014159) expressed with an N-terminal His-tag in *E. coli*. MW = 35.2 kDa. Catalyzes the transfer of methyl groups from S-adenosyl-L-methionine (SAM) to the  $\epsilon$ -amino function of protein L-lysine residues, specifically histone H3 lysine-36 (H3K36)<sup>1</sup>. 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<sup>2</sup>. In development, SETD2 is required for embryonic vascular remodeling<sup>3</sup>. There is evidence that SETD2 acts as a tumor suppressor in breast<sup>4,5</sup> and clear cell renal cell<sup>6</sup> cancers. RBC's SETD2 (His) comprises the catalytic domain (AWS/SET/Post-SET).

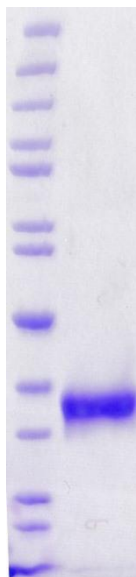
**PURITY:** > 90% by SDS-PAGE

**ASSAY CONDITIONS:** RBC's SETD2 (His) 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<sub>2</sub>, 1 mM DTT, 0.05 mg/mL chicken nucleosomes (as [DNA]), 1  $\mu$ M [<sup>3</sup>H]-SAM.

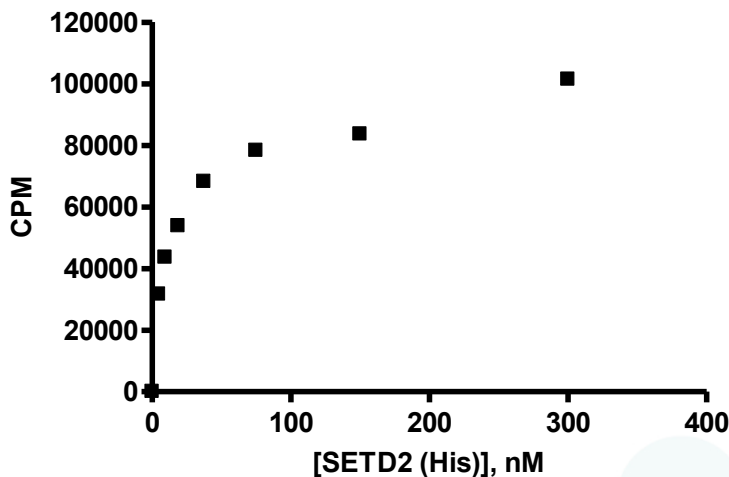
**SUPPLIED AS:** \_\_\_  $\mu$ g/ $\mu$ l total protein in 50 mM Tris/HCl pH 7.5, 500 mM NaCl, 0.25 mM TCEP, 10% glycerol (v/v) as determined by OD<sub>280</sub>.

**STORAGE:** -70°C. Thaw quickly and store on ice before use. The remaining, unused, undiluted enzyme should be snap frozen, for example 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  $\mu$ g of purified SETD2 (His).** 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 (His).** Methylation determined as TCA-precipitable counts in a scintillation/filter plate assay. Reactions were 60 min., 30°C, with 1  $\mu$ M [<sup>3</sup>H]-SAM and 0.05 mg/mL ChN oligonucleosomes (RBC Cat.# HMT-35-177) as substrate.

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

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