

## Recombinant SETD2 (1418-1714) protein

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**Catalog No:** 31358

**Expressed In:** *E. coli*

**Quantity:** 50 µg

**Concentration:** 0.52 µg/µl

**Source:** Human

**Buffer Contents:** 50 µg recombinant SETD2 (1418-1714) expressed in *E. coli* and supplied in a buffer of 40 mM Tris-HCl, pH 8.0, 110 mM NaCl, 2.2 mM KCl, 16 mM glutathione, 20% glycerol and 3 mM DTT.

**Background:** SETD2 (SET Domain Containing 2) is a Histone methyltransferase that specifically trimethylates Lys-36 of histone H3 (H3K36me3) using dimethylated Lys-36 (H3K36me2) as substrate. Represents the main enzyme generating H3K36me3, a specific tag for epigenetic transcriptional activation. SETD2 plays a role in chromatin structure modulation during elongation by coordinating recruitment of the FACT complex and by interacting with hyperphosphorylated POLR2A. SETD2 acts as a key regulator of DNA mismatch repair in G1 and early S phase by generating H3K36me3, a mark required to recruit MSH6 subunit of the MutS alpha complex: early recruitment of the MutS alpha complex to chromatin to be replicated allows a quick identification of mismatch DNA to initiate the mismatch repair reaction. H3K36me3 also plays an essential role in the maintenance of a heterochromatic state, by recruiting DNA methyltransferase DNMT3A. H3K36me3 is also enhanced in intron-containing genes, suggesting that SETD2 recruitment is enhanced by splicing and that splicing is coupled to recruitment of elongating RNA polymerase. Required during angiogenesis. Recruited to the promoters of adenovirus 12 E1A gene in case of infection, possibly leading to regulate its expression.

**Protein Details:** Amino acids 1418-1714 of SETD2 (accession number NM\_014159) were expressed in *E. coli* with an N-terminal GST-Tag (MW = 61 kDa).

**Application Notes:** Recombinant SETD2 (1418-1714) is suitable for use in histone methyltransferase assays. A good starting point is 50 to 500 ng of enzyme per assay.

**Assay conditions:** Prepare a 50 µl reaction mix (50 mM TRIS pH 8.8, 5 mM MgCl<sub>2</sub>, 4 mM DTT, 20 µM S-adenosylmethionine, and varying amounts of SETD2 (1418-1714)) and add to substrate-coated wells. Incubate at room temperature for 1 hr. Add anti-methyl histone H3K36 antibody and incubate 1hr. Next, incubate 1h with the HRP-labeled secondary antibody followed by chemiluminescent detection.

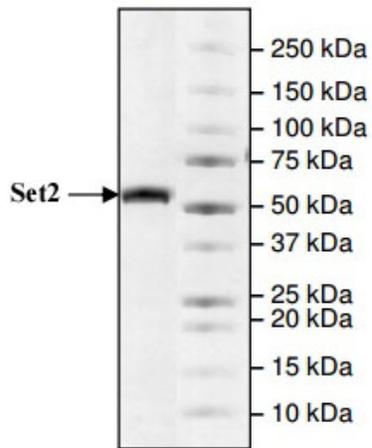
### References:

This product was used in the following publications:

*Mol. Cell.* (2016). 61(2):247-59. PMID: 26778125. (Histone Methyltransferase / HMT Assay)

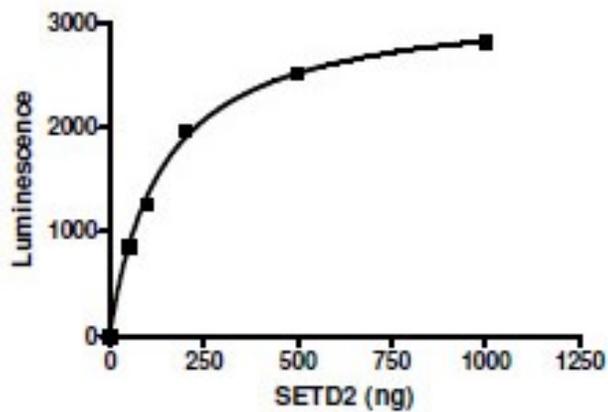
**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.



**Recombinant (SETD2 (1418-1714) protein gel.**

SETD2 (1418-1714 protein was run on an SDS-PAGE gel and stained with Coomassie blue.



**SETD2 (1418-1714) activity assay.**

Recombinant SETD2 (1418-1714) activity measured using a chemiluminescent methyltransferase assay.