10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SET2 Antibody (N-term) Blocking Peptide

Synthetic peptide
Catalog # BP1196a

Specification

SET2 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession Q9BYW2

SET2 Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 29072

Other Names
Histone-lysine N-methyltransferase SETD2, HIF-1, Huntingtin yeast partner B, Huntingtin-interacting protein 1, HIP-1, Huntingtin-interacting protein B, Lysine N-methyltransferase 3A, SET domain-containing protein 2, hSET2, p231HBP, SETD2, HIF1, HYPB, KIAA1732, KMT3A, SET2

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP1196a was selected from the N-term region of human SET2. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

SET2 Antibody (N-term) Blocking Peptide - Protein Information

Name SETD2

Function
Histone methyltransferase that specifically trimethylates 'Lys-36' of histone H3 (H3K36me3) using dimethylated 'Lys-36' (H3K36me2) as substrate (PubMed:16118227, PubMed:19141475, PubMed:21526191, PubMed:21792193, PubMed:23043551, PubMed:27474439). It is capable of trimethylating unmethylated H3K36 (H3K36me0) in vitro (PubMed:<a

href="http://www.uniprot.org/citations/19332550" target="_blank">19332550). Represents the main enzyme generating H3K36me3, a specific tag for epigenetic transcriptional activation (By similarity). Plays a role in chromatin structure modulation during elongation by coordinating recruitment of the FACT complex and by interacting with hyperphosphorylated POLR2A (PubMed:23325844). 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 (PubMed:23622243). Required for DNA double-strand break repair in response to DNA damage: acts by mediating formation of H3K36me3, promoting recruitment of RAD51 and DNA repair via homologous recombination (HR) (PubMed:24843002). Acts as a tumor suppressor (PubMed:24509477). H3K36me3 also plays an essential role in the maintenance of a heterochromatic state, by recruiting DNA methyltransferase DNMT3A (PubMed:27317772). 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 (PubMed:21792193). Required during angiogenesis (By similarity). Required for endoderm development by promoting embryonic stem cell differentiation toward endoderm: acts by mediating formation of H3K36me3 in distal promoter regions of FGFR3, leading to regulate transcription initiation of FGFR3 (By similarity). In addition to histones, also mediates methylation of other proteins, such as tubulins and STAT1 (PubMed:27518565, PubMed:28753426). Trimethylates 'Lys-40' of alpha-tubulins such as TUBA1B (alpha- TubK40me3); alpha-TubK40me3 is required for normal mitosis and cytokinesis and may be a specific tag in cytoskeletal remodeling (PubMed:27518565). Involved in interferon-alpha-induced antiviral defense by mediating both monomethylation of STAT1 at 'Lys-525' and catalyzing H3K36me3 on promoters of some interferon-stimulated genes (ISGs) to activate gene transcription (PubMed:28753426).

Cellular Location
Nucleus {ECO:0000250|UniProtKB:E9Q5F9}. Chromosome {ECO:0000250|UniProtKB:E9Q5F9}

Tissue Location
Ubiquitously expressed.

SET2 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

SET2 Antibody (N-term) Blocking Peptide - Images

SET2 Antibody (N-term) Blocking Peptide - Background

SET2 is a histone methyltransferase that methylates 'Lys-36' of histone H3. H3 'Lys-36' methylation represents a specific tag for epigenetic transcriptional activation. This protein probably plays a role in chromatin structure modulation during elongation via its interaction with hyperphosphorylated POLR2A. SET2 binds DNA at promoters, and may act as a transcription activator. SET2 binds to the promoters of adenovirus 12 E1A gene in case of infection, possibly leading to regulate its expression. Huntington's disease (HD), a neurodegenerative disorder characterized by loss of striatal neurons, is caused by an expansion of a polyglutamine tract in the HD protein huntingtin.

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SET2 belongs to a class of huntingtin interacting proteins characterized by WW motifs.

SET2 Antibody (N-term) Blocking Peptide - References

Rega, S., et al., Mol. Cell. Neurosci. 18(1):68-79 (2001).Passani, L.A., et al., Hum. Mol. Genet. 9(14):2175-2182 (2000).Faber, P.W., et al., Hum. Mol. Genet. 7(9):1463-1474 (1998).