

SETDB1 Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11148**Specification**

SETDB1 Antibody - Product Information

Application	WB
Primary Accession	Q15047
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	143157

SETDB1 Antibody - Additional Information**Gene ID 9869**

Positive Control
Application & Usage

Western Blot: Various cell lysates
Western blot: 1:500 - 1:1000, IHC: 1:50 - 1:100, IP: 1:50 - 1:100

Other Names

ESET, H3K9HMTase4, KG1T, KIAA0067, KMT1E.

Target/Specificity

SETDB1

Antibody Form

Liquid

Appearance

Colorless liquid

Formulation

100 µg of antibody in 100 µl PBS containing 0.02% sodium azide, 50% glycerol, pH 7.3

Handling

The antibody solution should be gently mixed before use.

Reconstitution & Storage

-20 °C

Background Descriptions**Precautions**

SETDB1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

SETDB1 Antibody - Protein Information

Name SETDB1 ([HGNC:10761](#))

Function

Histone methyltransferase that specifically trimethylates 'Lys-9' of histone H3. H3 'Lys-9' trimethylation represents a specific tag for epigenetic transcriptional repression by recruiting HP1 (CBX1, CBX3 and/or CBX5) proteins to methylated histones. Mainly functions in euchromatin regions, thereby playing a central role in the silencing of euchromatic genes. H3 'Lys-9' trimethylation is coordinated with DNA methylation (PubMed:[12869583](http://www.uniprot.org/citations/12869583)). Required for HUSH-mediated heterochromatin formation and gene silencing. Forms a complex with MBD1 and ATF7IP that represses transcription and couples DNA methylation and histone 'Lys-9' trimethylation (PubMed:[27732843](http://www.uniprot.org/citations/27732843), PubMed:[14536086](http://www.uniprot.org/citations/14536086)). Its activity is dependent on MBD1 and is heritably maintained through DNA replication by being recruited by CAF-1 (PubMed:[14536086](http://www.uniprot.org/citations/14536086)). SETDB1 is targeted to histone H3 by TRIM28/TIF1B, a factor recruited by KRAB zinc-finger proteins. Probably forms a corepressor complex required for activated KRAS-mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (PubMed:[24623306](http://www.uniprot.org/citations/24623306)). Required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed:[24623306](http://www.uniprot.org/citations/24623306)). In ESCs, in collaboration with TRIM28, is also required for H3K9me3 and silencing of endogenous and introduced retroviruses in a DNA- methylation independent-pathway (By similarity). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed:[24623306](http://www.uniprot.org/citations/24623306)). The SETDB1-TRIM28-ZNF274 complex may play a role in recruiting ATRX to the 3'-exons of zinc-finger coding genes with atypical chromatin signatures to establish or maintain/protect H3K9me3 at these transcriptionally active regions (PubMed:[27029610](http://www.uniprot.org/citations/27029610)).

Cellular Location

Nucleus. Cytoplasm. Chromosome. Note=Associated with non- pericentromeric regions of chromatin. Excluded from nucleoli and islands of condensed chromatin.

Tissue Location

Widely expressed. High expression in testis.

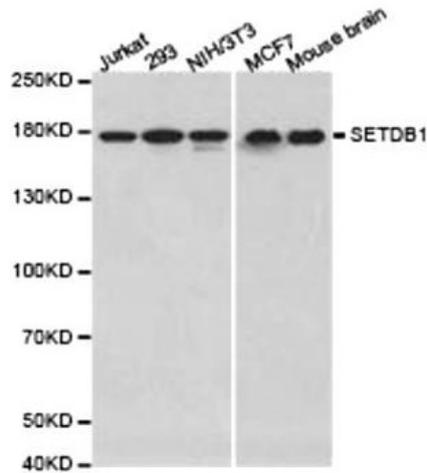
SETDB1 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

SETDB1 Antibody - Images





WB of various cell extracts with SETDB1 pAb.

SETDB1 Antibody - Background

The Erg-associated protein with SET domain (ESET), also known as SET domain, bifurcated 1 (SETDB1) protein, is a member of a family of histone lysine methyltransferases, each of which contains a conserved catalytic SET domain originally identified in *Drosophila*, Enhancer of zeste, and Trithorax proteins. ESET also contains tudor and methylCpG-binding domains, which may coordinate binding to methylated histones and methylated DNA, respectively. ESET methylates histone H3 Lys9, creating a transcriptionally repressive mark that facilitates gene silencing. However, unlike SUV39H histone H3 Lys9 methyltransferases, which function mainly in heterochromatin regions such as pericentric heterochromatin, ESET functions mainly in euchromatic regions to repress gene promoters. ESET interacts with a variety of proteins, including transcription factors (ERG), histone deacetylases (HDAC1/2), DNA methyltransferases (DNMT3A/B) and transcriptional corepressors (mSin3A/B, MBD1, KAP1, the ATF-associated modulator mAM). mAM forms a complex with ESET, stimulating its methyltransferase activity, specifically the conversion of dimethyl to trimethyl histone H3 Lys9. MBD1 recruits ESET to the CAF-1 complex to facilitate methylation of histone H3 Lys9 during replication-coupled chromatin assembly in S phase. DNMT3A recruits ESET to silenced promoters in cancer cells. ESET may play a role in the pathogenesis of Huntington's disease, since levels of ESET protein and trimethyl histone H3 Lys9 are both increased in diseased brains.