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KMT1E/SETDB1 (1E7) Mouse mAb

Catalog # AP53506

Product Information

Application	WB, IF, ICC
Primary Accession	Q15047
Reactivity	Human, Mouse, Monkey
Host	Mouse
Clonality	Monoclonal Antibody
Isotype	IgG1
Conjugate	Unconjugated
Immunogen	Purified recombinant fragment of human SETDB1 expressed in E. Coli.
Purification	Ascitic Fluid
Calculated MW	143157

Additional Information

Gene ID	9869
Other Names	ESET; KG1T; KMT1E; KIAA0067; H3-K9-HMTase4; SETDB1
Dilution	WB~~1:2000 IF~~1:50~200 ICC~~N/A
Format	Liquid in Purified antibody in PBS with 0.05% sodium azide.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	SETDB1 {ECO:0000303|PubMed:11959841, ECO:0000312|HGNC:HGNC:10761}
Function	Histone methyltransferase that specifically trimethylates 'Lys-9' of histone H3 (H3K9me3) (PubMed:11959841, PubMed:12869583, PubMed:14536086, PubMed:27237050, PubMed:39096901). H3 'Lys-9' trimethylation represents a specific tag for epigenetic transcriptional repression by recruiting HP1 (CBX1, CBX3 and/or CBX5) proteins to methylated histones (PubMed:11959841, PubMed:12869583, PubMed:14536086, PubMed:27237050, PubMed:39096901). Mainly functions in euchromatin regions, thereby playing a central role in the silencing of euchromatic genes (PubMed:12869583, PubMed:14536086, PubMed:27237050, PubMed:39096901). H3 'Lys-9' trimethylation is coordinated with DNA methylation (PubMed:12869583, PubMed:14536086, PubMed:27237050, PubMed:39096901). Forms a complex with MBD1 and ATF7IP that represses transcription and couples DNA methylation and histone 'Lys-9' trimethylation (PubMed:14536086). Its activity is dependent on MBD1 and is heritably maintained through DNA replication

by being recruited by CAF-1 (PubMed:14536086). SETDB1 is targeted to histone H3 by TRIM28/TIF1B, a factor recruited by KRAB zinc-finger proteins (PubMed:24623306). Required for HUSH-mediated heterochromatin formation and gene silencing (PubMed:27732843). 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). Required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed: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 (PubMed:37938770). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed: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). Also catalyzes mono- and dimethylation of 'Lys-9' of free histone H3 (H3K9me1 and H3K9me2) during translation in the cytoplasm, which is then transported to the nucleus and incorporated into nucleosomes (PubMed:26405197).

Cellular Location

Nucleus. Cytoplasm. Chromosome Note=Associated with non-pericentromeric regions of chromatin (PubMed:27029610). Recruited to H3K9me and H3K19ac marks on chromatin (PubMed:29234025). Excluded from nucleoli and islands of condensed chromatin (PubMed:27732843).

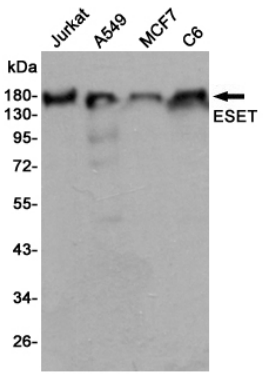
Tissue Location

Widely expressed. High expression in testis.

Background

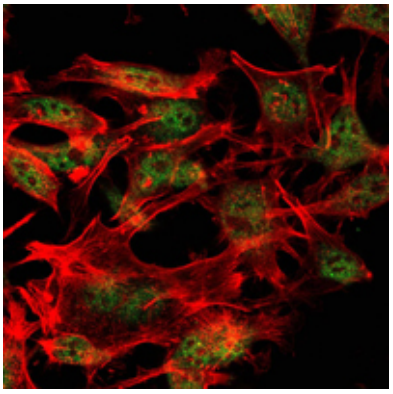
Swiss-Prot Acc.Q15047.This gene encodes a histone methyltransferase. The encoded enzyme catalyzes the reaction of S-adenosyl-L-methionine and histone L-lysine to produce S-adenosyl-L-homocysteine and histone N(6)-methyl-L-lysine. The encoded protein likely functions in transcriptional repression. Alternatively spliced transcript variants have been described.

Images



Western blot detection of ESET in Jurkat,A549,MCF7 and C6 cell lysates using ESET mouse mAb (1:2000 diluted).Predicted band size:180KDa.Observed band size:180KDa.

Immunofluorescence analysis of LOVO cells using SETDB1 mouse mAb (green). Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.



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