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

SUV39H1 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14022a

Product Information

Application	WB, E
Primary Accession	O43463
Other Accession	NP_003164.1
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34028
Calculated MW	47907
Antigen Region	79-108

Additional Information

Gene ID	6839
Other Names	Histone-lysine N-methyltransferase SUV39H1, Histone H3-K9 methyltransferase 1, H3-K9-HMTase 1, Lysine N-methyltransferase 1A, Position-effect variegation 3-9 homolog, Suppressor of variegation 3-9 homolog 1, Su(var)3-9 homolog 1, SUV39H1, KMT1A, SUV39H
Target/Specificity	This SUV39H1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 79-108 amino acids from the N-terminal region of human SUV39H1.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SUV39H1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SUV39H1

Synonyms	KMT1A, SUV39H
Function	Histone methyltransferase that specifically mediates trimethylation of 'Lys-9' of histone H3 (H3K9me3) using monomethylated H3 'Lys-9' (H3K9me1) as substrate (PubMed:10949293, PubMed:11242053, PubMed:18004385, PubMed:40440427). Also weakly methylates histone H1 (in vitro) (PubMed:10949293). 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:10949293, PubMed:11242053, PubMed:18004385). Mainly functions in heterochromatin regions, thereby playing a central role in the establishment of constitutive heterochromatin at pericentric and telomere regions (By similarity). H3 'Lys-9' trimethylation is also required to direct DNA methylation at pericentric repeats (PubMed:41094145). SUV39H1 is targeted to histone H3 via its interaction with RB1 and is involved in many processes, such as repression of MYOD1-stimulated differentiation, regulation of the control switch for exiting the cell cycle and entering differentiation, repression by the PML-RARA fusion protein, BMP-induced repression, repression of switch recombination to IgA and regulation of telomere length (PubMed:11484059, PubMed:14765126, PubMed:16449642, PubMed:16818776, PubMed:16858404, PubMed:30111536). Involved in the maintenance of H3K9me3 mark following DNA replication, when histone marks are diluted: HP1 recognizes the preexisting H3K9me3 mark and serves as a platform to recruit SUV39H1 to modify the adjacent newly incorporated histones (PubMed:10949293, PubMed:11242053, PubMed:40440427). Component of the eNoSC (energy-dependent nucleolar silencing) complex, a complex that mediates silencing of rDNA in response to intracellular energy status and acts by recruiting histone- modifying enzymes (PubMed:18485871). The eNoSC complex is able to sense the energy status of cell: upon glucose starvation, elevation of NAD(+)/NADP(+) ratio activates SIRT1, leading to histone H3 deacetylation followed by dimethylation of H3 at 'Lys-9' (H3K9me2) by SUV39H1 and the formation of silent chromatin in the rDNA locus (PubMed:18485871). Recruited by the large PER complex to the E-box elements of the circadian target genes such as PER2 itself or PER1, contributes to the conversion of local chromatin to a heterochromatin- like repressive state through H3 'Lys-9' trimethylation (By similarity).
Cellular Location	Nucleus. Chromosome. Nucleus lamina. Nucleus, nucleoplasm. Chromosome, centromere. Note=Associates with centromeric constitutive heterochromatin (PubMed:10671371). Recruited to pericentromeric heterochromatin via its chromo domain, which specifically recognizes and binds histone H3 monoubiquitinated at 'Lys- 14' (H3K14ub) (PubMed:41094145).

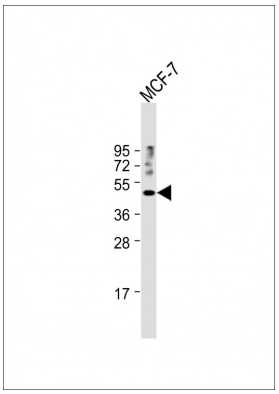
Background

This gene is a member of the suppressor of variegation 3-9 homolog family and encodes a protein with a chromodomain and a C-terminal SET domain. This nuclear protein moves to the centromeres during mitosis and functions as a histone methyltransferase, methylating Lys-9 of histone H3. Overall, it plays a vital role in heterochromatin organization, chromosome segregation, and mitotic progression.

References

Chen, L., et al. EMBO J. 29(15):2538-2552(2010)
Goyama, S., et al. Leukemia 24(1):81-88(2010)
Cherrier, T., et al. Oncogene 28(38):3380-3389(2009)
Li, Z., et al. J. Biol. Chem. 284(16):10361-10366(2009)
Spensberger, D., et al. FEBS Lett. 582(18):2761-2767(2008)

Images



Anti-SUV39H1 Antibody (N-term) at 1:1000 dilution + MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 48 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.