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
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 (By similarity). 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.

Background

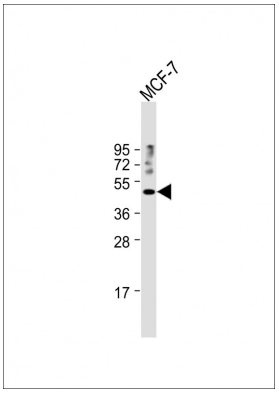
This gene is a member of the suppressor of variegation 3-9 homolog family and encodes a protein with a chromodomain and a C-terminal SET domain. This nuclear protein moves to the centromeres during mitosis and functions as a histone methyltransferase, methylating Lys-9 of histone H3. Overall, it plays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