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SUV39H2 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1281a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9H5I1
Other Accession	NP_078946
Reactivity	Human, Mouse
Predicted	Rat, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	46682
Antigen Region	93-122

Additional Information

Gene ID	79723
Other Names	Histone-lysine N-methyltransferase SUV39H2, Histone H3-K9 methyltransferase 2, H3-K9-HMTase 2, Lysine N-methyltransferase 1B, Suppressor of variegation 3-9 homolog 2, Su(var)3-9 homolog 2, SUV39H2, KMT1B
Target/Specificity	This SUV39H2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 93-122 amino acids from the N-terminal region of human SUV39H2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	SUV39H2 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SUV39H2
Synonyms	KMT1B

Function	Histone methyltransferase that specifically mediates trimethylation of 'Lys-9' of histone H3 (H3K9me3) using monomethylated H3 'Lys-9' (H3K9me1) as substrate (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). Mainly functions in heterochromatin regions, thereby playing a central role in the establishment of constitutive heterochromatin at pericentric and telomere regions (PubMed:10949293). H3 'Lys-9' trimethylation is also required to direct DNA methylation at pericentric repeats (PubMed:10949293, PubMed:41094145). SUV39H2 is targeted to histone H3 via its interaction with RB1 and is involved in many processes, such as cell cycle regulation, transcriptional repression and regulation of telomere length (PubMed:14765126). May participate in regulation of higher-order chromatin organization during spermatogenesis (By similarity). 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. Chromosome, centromere {ECO:0000250|UniProtKB:Q9EQQ0}. Note=Associates with centromeric constitutive heterochromatin (By similarity). Recruited to pericentromeric heterochromatin via its chromo domain, which specifically recognizes and binds histone H3 monoubiquitinated at 'Lys- 14' (H3K14ub) (PubMed:41094145). {ECO:0000250|UniProtKB:Q9EQQ0, ECO:0000269|PubMed:41094145}

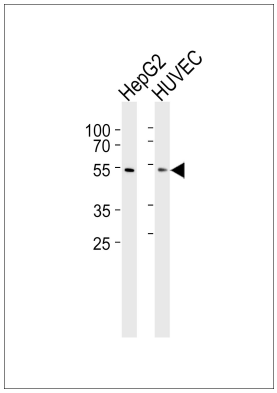
Background

The murine gene Suv39h2 encodes an H3 histone methyltransferase (HMTase) 59% identical in sequence to mouse Suv39h1. During embryogenesis, both proteins overlap in tissue expression, yet Suv39h2 transcripts are restricted to the testes in adult animals. Immunolocalization of the Suv39h2 protein during spermatogenesis indicates enrichment at the heterochromatin from the leptotene to the round spermatid stage. Moreover, Suv39h2 specifically accumulates with chromatin of the sex chromosomes, which undergo transcriptional silencing during the first meiotic prophase. Suv39h2 HMTase may also organize meiotic heterochromatin with the potential for epigenetic imprint to the male germline.

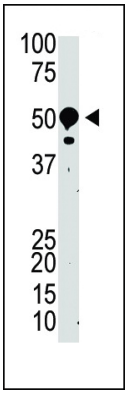
References

Ota, T., et al., Nat. Genet. 36(1):40-45 (2004). Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).

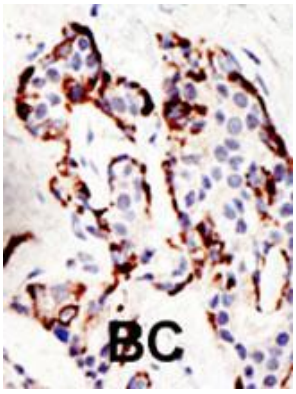
Images



Western blot analysis of lysates from HepG2, HUVEC cell line (from left to right), using SUV39H2 Antibody (K48)(Cat. #AP1281A). AP1281A was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.



The anti-SUV39H2 Pab (Cat. #AP1281a) is used in Western blot to detect SUV39H2 in mouse kidney tissue lysate.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Histone-modifying genes as biomarkers in hepatocellular carcinoma.
- High expressions of histone methylation- and phosphorylation-related proteins are associated with prognosis of oral squamous cell carcinoma in male population of Taiwan.
- Epigenetic regulation of surfactant protein A gene (SP-A) expression in fetal lung reveals a critical role for Suv39h methyltransferases during development and hypoxia.

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