SANTA CRUZ BIOTECHNOLOGY, INC.

SUV39H1 (44.1): sc-23961

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Distinct modifications of histone tails, such as acetylation, phosphorylation and methylation, regulate nuclear processes by organizing the chromatin into higher order structures. Higher-order chromatin influences chromosome function and epigenetic gene regulation. Human and murine SUV39H1 are mammalian homologues of *Drosophila* Su(var)3-9 and of *Schizosaccharomyces pombe* clr4, which encode Histone H3-specific methyltransferases. SUV39H1, suppressor of variegation 3-9, selectively methylates lysine 9 of the amino terminus of Histone H3 to generate a binding site for HP1 proteins. These HP1 proteins belong to a family of heterochromatic adaptor molecules that are implicated in both gene silencing and supra-nucleosomal chromatin structure. SUV39H1 contains both SET and chromo domains and is ubiquitously expressed. The enrichment of SUV39H1 at heterochromatic foci during interphase and centromere-specific localization during metaphase depends on the C-terminal SET domain. SUV39H1 is phosphorylated specifically at the G_1/S cell cycle transition and, when forcibly expressed, suppresses cell growth. SUV39H1 acts as a long-range repressor that is capable of acting over several kilobases to silence basal promoters.

REFERENCES

1. Aagaard, L., et al. 1999. Functional mammalian homologues of the *Drosophila* PEV-modifier Su(var)3-9 encode centromere-associated proteins which complex with the heterochromatin component M31. EMBO J. 18: 1923-1938.
2. Rea, S., et al. 2000. Regulation of chromatin structure by site-specific Histone H3 methyltransferases. Nature 406: 593-599.

CHROMOSOMAL LOCATION

Genetic locus: SUV39H1 (human) mapping to Xp11.23; Suv39h1 (mouse) mapping to X A1.1.

SOURCE

SUV39H1 (44.1) is a mouse monoclonal antibody raised against purified SUV39H1 protein.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SUV39H1 (44.1) is available conjugated to agarose (sc-23961 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-23961 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23961 PE), fluorescein (sc-23961 FITC), Alexa Fluor® 488 (sc-23961 AF488), Alexa Fluor® 546 (sc-23961 AF546), Alexa Fluor® 594 (sc-23961 AF594) or Alexa Fluor® 647 (sc-23961 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23961 AF680) or Alexa Fluor® 790 (sc-23961 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

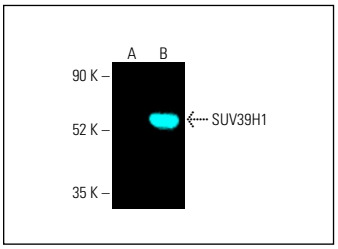
SUV39H1 (44.1) is recommended for detection of N-terminal (195 aa) SUV39H1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SUV39H1 siRNA (h): sc-38463, SUV39H1 siRNA (m): sc-38464, SUV39H1 shRNA Plasmid (h): sc-38463-SH, SUV39H1 shRNA Plasmid (m): sc-38464-SH, SUV39H1 shRNA (h) Lentiviral Particles: sc-38463-V and SUV39H1 shRNA (m) Lentiviral Particles: sc-38464-V.

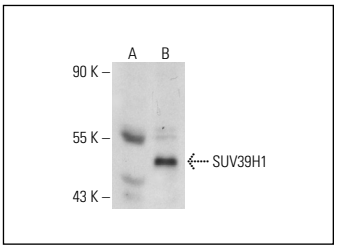
Molecular Weight of SUV39H1: 45 kDa.

Positive Controls: SUV39H1 (h2): 293T Lysate: sc-175626, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

DATA



SUV39H1 (44.1): sc-23961. Fluorescent western blot analysis of SUV39H1 expression in non-transfected: sc-117752 (**A**) and human SUV39H1 transfected: sc-175626 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 647: sc-533664.



SUV39H1 (44.1): sc-23961. Western blot analysis of SUV39H1 expression in non-transfected: sc-117752 (**A**) and human SUV39H1 transfected: sc-175626 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2010. Synergistic epigenetic reactivation of estrogen receptor-α (ERα) by combined green tea polyphenol and histone deacetylase inhibitor in ERα-negative breast cancer cells. Mol. Cancer 9: 274.
2. Iwase, S., et al. 2011. ATRX ADD domain links an atypical histone methylation recognition mechanism to human mental-retardation syndrome. Nat. Struct. Mol. Biol. 18: 769-776.
3. Tsuboi, M., et al. 2020. Chromate exposure induces DNA hypermethylation of the mismatch repair gene MLH1 in lung cancer. Mol. Carcinog. 59: 24-31.
4. Tanaka, M., et al. 2023. The role of H3K9me3 in oral squamous cell carcinoma. Biochem. Biophys. Res. Commun. 640: 56-63.
5. Marzullo, M., et al. 2023. Su(var)3-9 mediates age-dependent increase in H3K9 methylation on TDP-43 promoter triggering neurodegeneration. Cell Death Discov. 9: 357.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.