



SUV39H1 (h2): 293T Lysate: sc-175626

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 G₁/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

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2. Rea, S., et al. 2000. Regulation of chromatin structure by site-specific Histone H3 methyltransferases. *Nature* 406: 593-599.
3. Hagemann, T.L., et al. 2000. Gene regulation of Wiskott-Aldrich syndrome protein and the human homolog of the *Drosophila* Su(var)3-9: WASP and SUV39H1, two adjacent genes at Xp11.23. *Biochim. Biophys. Acta* 1493: 368-372.
4. Melcher, M., et al. 2000. Structure-function analysis of SUV39H1 reveals a dominant role in heterochromatin organization, chromosome segregation, and mitotic progression. *Mol. Cell. Biol.* 20: 3728-3741.
5. Firestein, R., et al. 2000. Set domain-dependent regulation of transcriptional silencing and growth control by SUV39H1, a mammalian ortholog of *Drosophila* Su(var)3-9. *Mol. Cell. Biol.* 20: 4900-4909.
6. Lachner, M., et al. 2001. Methylation of Histone H3 lysine 9 creates a binding site for HP1 proteins. *Nature* 410: 116-120.
7. Tachibana, M., et al. 2001. SET-domain containing protein, G9a, is a novel lysine-preferring mammalian histone methyltransferase with hyperactivity and specific selectivity to lysines 9 and 27 of histone H3. *J. Biol. Chem.* 276: 25309-25317.

CHROMOSOMAL LOCATION

Genetic locus: SUV39H1 (human) mapping to Xp11.23.

PRODUCT

SUV39H1 (h2): 293T Lysate represents a lysate of human SUV39H1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

SUV39H1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive SUV39H1 antibodies. Recommended use: 10-20 µl per lane.

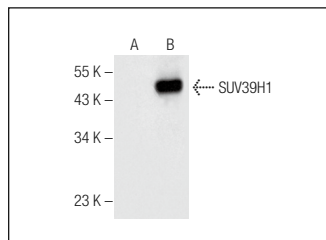
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SUV39H1 (C-10): sc-377112 is recommended as a positive control antibody for Western Blot analysis of enhanced human SUV39H1 expression in SUV39H1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



SUV39H1 (C-10): sc-377112. Western blot analysis of SUV39H1 expression in non-transfected: sc-117752 (A) and human SUV39H1 transfected: sc-175626 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.