SANTA CRUZ BIOTECHNOLOGY, INC.

SUV39H2 siRNA (h): sc-106822

BACKGROUND

Distinct modifications of histone tails, such as acetylation, phosphorylation and methylation, regulate nuclear processes by organizing chromatin into higher order structures. Higher order chromatin influences chromosome function and epigenetic gene regulation. SUV39H2 (suppressor of variegation 3-9 homolog 2), also known as KMT1B or Histone H3-K9 methyltransferase 2, is a 410 amino acid protein that localizes to the centromere and contains one SET domain, one pre-SET domain, one post-SET domain and one chromo domain. Expressed at high levels in adult testis, SUV39H2 functions as a histone methyltransferase that trimethylates the Lys-9 residue of Histone H3, thereby playing an essential role in establishing constitutive heterochromatin at pericentric and telomere regions. SUV39H2 conveys its enzymatic activity via its multiple catalytic domains, which are necessary for both stable binding of SUV39H2 to chromatin and for SUV39H2 methyltransferase activity. Multiple isoforms of SUV39H2 exist due to alternative splicing events.

REFERENCES

1. O'Carroll, D., et al. 2000. Isolation and characterization of SUV39H2, a second Histone H3 methyltransferase gene that displays testis-specific expression. Mol. Cell. Biol. 20: 9423-9433.
2. Rea, S., et al. 2000. Regulation of chromatin structure by site-specific Histone H3 methyltransferases. Nature 406: 593-599.
3. Peters, A.H., et al. 2001. Loss of the SUV39H histone methyltransferases impairs mammalian heterochromatin and genome stability. Cell 107: 323-337.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606503. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. García-Cao, M., et al. 2004. Epigenetic regulation of telomere length in mammalian cells by the SUV39H1 and SUV39H2 histone methyltransferases. Nat. Genet. 36: 94-99.
6. Frontelo, P., et al. 2004. SUV39H histone methyltransferases interact with Smads and cooperate in BMP-induced repression. Oncogene 23: 5242-5251.

CHROMOSOMAL LOCATION

Genetic locus: SUV39H2 (human) mapping to 10p13.

PRODUCT

SUV39H2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SUV39H2 shRNA Plasmid (h): sc-106822-SH and SUV39H2 shRNA (h) Lentiviral Particles: sc-106822-V as alternate gene silencing products.

For independent verification of SUV39H2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106822A, sc-106822B and sc-106822C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SUV39H2 siRNA (h) is recommended for the inhibition of SUV39H2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SUV39H2 gene expression knockdown using RT-PCR Primer: SUV39H2 (h)-PR: sc-106822-PR (20 µl, 579 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, Q., et al. 2010. Polycomb CBX7 directly controls trimethylation of Histone H3 at lysine 9 at the p16 locus. PLoS ONE 5: e13732.
2. Paschall, A.V., et al. 2015. H3K9 trimethylation silences fas expression to confer colon carcinoma immune escape and 5-fluorouracil chemoresistance. J. Immunol. 195: 1868-1882.
3. Nacht, A.S., et al. 2016. Hormone-induced repression of genes requires BRG1-mediated H1.2 deposition at target promoters. EMBO J. 35: 1822-1843.

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.