

Set1A siRNA (h): sc-76484

BACKGROUND

The SET domain containing proteins, Set1A and Set1B, are both widely expressed proteins sharing 39% amino acid sequence identity. Both proteins contain SET and post-SET domains at their C-termini and an RNA recognition domain at their N-termini. They associate separately with the Set1 histone methyltransferase complex (a complex that is analogous to the *S. cerevisiae* Set1/COMPASS complex) and function as the catalytic subunit, catalyzing H3-Lys4 methyltransferase reactions. The Set1 complex also contains the non-catalytic subunits CGBP, ASH2L, WDR5, WDR82 and RBQ-3. Set1A, also known as SETD1A or KMT2F, localizes to a set of euchromatic nuclear speckles that does not overlap with the localization of Set1B (also referred to as SETD1B or KMT2G). This unique subnuclear localization suggests that Set1A and Set1B bind to a distinct set of target genes, thus implying a non-redundant function of Set1A and Set1B.

REFERENCES

1. Kikuno, R., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 197-205.
2. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611052. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Wysocka, J., et al. 2003. Human Sin3 deacetylase and trithorax-related Set1/ASH2 Histone H3-K4 methyltransferase are tethered together selectively by the cell-proliferation factor HCF-1. Genes Dev. 17: 896-911.

CHROMOSOMAL LOCATION

Genetic locus: SETD1A (human) mapping to 16p11.2.

PRODUCT

Set1A 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Set1A shRNA Plasmid (h): sc-76484-SH and Set1A shRNA (h) Lentiviral Particles: sc-76484-V as alternate gene silencing products.

For independent verification of Set1A (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-76484A, sc-76484B and sc-76484C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Set1A siRNA (h) is recommended for the inhibition of Set1A 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

Set1A (G-6): sc-515590 is recommended as a control antibody for monitoring of Set1A gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Set1A gene expression knockdown using RT-PCR Primer: Set1A (h)-PR: sc-76484-PR (20 μ l, 363 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Alarcon, V., et al. 2016. The enzymes LSD1 and Set1A cooperate with the viral protein HBx to establish an active hepatitis B viral chromatin state. Sci. Rep. 6: 25901.
2. Yuen, K.C., et al. 2017. Condensin II is anchored by TFIIIC and H3K4me3 in the mammalian genome and supports the expression of active dense gene clusters. Sci. Adv. 3: e1700191.

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.