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# SET7/9 shRNA (h) Lentiviral Particles: sc-44094-V

## BACKGROUND

The methylation of histones plays a pivotal role in the regulation of chromatin structure and gene expression. Histone methylation can occur on Arg or Lys residues, with an exquisite site selectivity for Lys methylation at specific positions in the N-termini of Histones H3 and H4. SET7/9, a histone methyltransferase (HMTase), which transfers methyl groups to Lys 4 of Histone H3, forms a complex with S-adenosyl-L-methionine. This complex contains an active site, consisting of a binding pocket where an AdoMet molecule in an unusual conformation binds, a narrow substrate-specific channel that only unmethylated lysine residues can access and a catalytic tyrosine residue.

## REFERENCES

- Jenuwein, T. 2001. Re-SET-ting heterochromatin by histone methyltransferases. *Trends Cell Biol.* 11: 266-273.
- Wang, H., et al. 2001. Purification and functional characterization of a Histone H3-Lysine 4-specific methyltransferase. *Mol. Cell* 8: 1207-1217.
- Wilson, J.R., et al. 2002. Crystal structure and functional analysis of the histone methyltransferase SET7/9. *Cell* 111: 105-115.
- Nishioka, K., et al. 2002. SET9, a novel Histone H3 methyltransferase that facilitates transcription by precluding histone tail modifications required for heterochromatin formation. *Genes Dev.* 16: 479-489.
- Kwon, T., et al. 2003. Mechanism of histone lysine methyl transfer revealed by the structure of SET7/9-AdoMet. *EMBO J.* 22: 292-303.
- 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.
- Xiao, B., et al. 2003. Structure and catalytic mechanism of the human histone methyltransferase SET7/9. *Nature* 421: 652-656.

## CHROMOSOMAL LOCATION

Genetic locus: SETD7 (human) mapping to 4q31.1.

## PRODUCT

SET7/9 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see SET7/9 siRNA (h): sc-44094 and SET7/9 shRNA Plasmid (h): sc-44094-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ$  C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

SET7/9 shRNA (h) Lentiviral Particles is recommended for the inhibition of SET7/9 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

SET7/9 (C-11): sc-390823 is recommended as a control antibody for monitoring of SET7/9 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SET7/9 gene expression knockdown using RT-PCR Primer: SET7/9 (h)-PR: sc-44094-PR (20  $\mu$ l, 353 bp). Annealing temperature for the primers should be  $55-60^\circ$  C and the extension temperature should be  $68-72^\circ$  C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.