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# SUZ12 shRNA (h) Lentiviral Particles: sc-45597-V

## BACKGROUND

The Polycomb group (PcG) genes contribute to the maintenance of cell identity, cell cycle regulation and oncogenesis. The mammalian PcG proteins are regulatory proteins important for Hox gene expression, axial skeleton development, and the control of proliferation and survival of hematopoietic cells. By inducing changes in chromatin structure, the PcG proteins are part of a cellular memory system that is responsible for gene activity being inherited to progeny cells. PcG proteins silence gene expression through the formation of multimeric protein complexes with different compositions. Manipulating the expression-levels of various PcG proteins in mammalian cell lines results in cellular transformation, which may be a link between the chromatin-associated PcG proteins and cancer. Polycomb protein SUZ12, also designated ChET 9 protein or joined-to-JAZF1 protein, is a nuclear protein belonging to the VEFS (VRN2-EMF2-FIS2-SUZ12) family. SUZ12 has been detected at the breakpoints of a certain recurrent chromosomal translocation which has been reported in endometrial stromal sarcoma. It is a component of the PRC2 complex, composed of EED, EZH2, SUZ12/JJAZ1, RBBP4 and RBBP7.

## REFERENCES

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- Koontz, J.I., et al. 2001. Frequent fusion of the JAZF1 and JJAZ1 genes in endometrial stromal tumors. *Proc. Natl. Acad. Sci. USA* 98: 6348-6353.
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- Kuzmichev, A., et al. 2002. Histone methyltransferase activity associated with a human multiprotein complex containing the enhancer of zeste protein. *Genes Dev.* 16: 2893-2905.
- Kirmizis, A., et al. 2004. Silencing of human Polycomb target genes is associated with methylation of Histone H3 Lys 27. *Genes Dev.* 18: 1592-1605.
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## CHROMOSOMAL LOCATION

Genetic locus: SUZ12 (human) mapping to 17q11.2.

## PRODUCT

SUZ12 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 SUZ12 siRNA (h): sc-45597 and SUZ12 shRNA Plasmid (h): sc-45597-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.

## APPLICATIONS

SUZ12 shRNA (h) Lentiviral Particles is recommended for the inhibition of SUZ12 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

SUZ12 (D-10): sc-271325 is recommended as a control antibody for monitoring of SUZ12 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<sup>™</sup> compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SUZ12 gene expression knockdown using RT-PCR Primer: SUZ12 (h)-PR: sc-45597-PR (20  $\mu$ l, 575 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.

## PROTOCOLS

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