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# ERI-1 shRNA (m) Lentiviral Particles: sc-45560-V

## BACKGROUND

Helicase with RNase motif, more commonly designated Dicer, cleaves double-stranded RNA (dsRNA) in the RNA interference and small temporal RNA (stRNA) pathways, producing active small RNA components (siRNAs) which target the destruction of RNA and repress gene expression. Human Dicer cleaves dsRNA independent of ATP. The 3'-5' exonuclease ERI-1, also known as Protein 3'hExo, degrades Histone mRNA after replication and may be involved in the regulation of RNA interference. ERI-1 has a high affinity for the stem-loop structure of replication-dependent Histone pre-mRNAs. It requires the 5'-ACCCA-3' sequence present in stem-loop structure. ERI-1 and a stem-loop binding protein (SLBP) target opposite faces of a unique highly conserved stem-loop RNA scaffold towards the 3' end of Histone mRNA.

## REFERENCES

- Kennedy, S., et al. 2004. A conserved siRNA-degrading RNase negatively regulates RNA interference in *C. elegans*. *Nature* 427: 645-649.
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- Sobering, A.K., et al. 2004. Yeast Ras regulates the complex that catalyzes the first step in GPI-anchor biosynthesis at the ER. *Cell* 117: 637-648.
- Zhang, J. 2005. Dampening the silencing effect of RNA interference in mammals. *Biochem. J.* 390: e5-e6.
- Hong, J., et al. 2005. High doses of siRNAs induce eri-1 and adar-1 gene expression and reduce the efficiency of RNA interference in the mouse. *Biochem. J.* 390: 675-679.
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- Wilkins, C., et al. 2005. RNA interference is an antiviral defence mechanism in *Caenorhabditis elegans*. *Nature* 436: 1044-1047.
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## CHROMOSOMAL LOCATION

Genetic locus: Eri1 (mouse) mapping to 8 B1.1.

## PRODUCT

ERI-1 shRNA (m) 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 ERI-1 siRNA (m): sc-45560 and ERI-1 shRNA Plasmid (m): sc-45560-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

ERI-1 shRNA (m) Lentiviral Particles is recommended for the inhibition of ERI-1 expression in mouse 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

ERI-1 (I-15): sc-34610 is recommended as a control antibody for monitoring of ERI-1 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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 ERI-1 gene expression knockdown using RT-PCR Primer: ERI-1 (m)-PR: sc-45560-PR (20  $\mu$ l). 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.

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