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SANTA CRUZ BIOTECHNOLOGY, INC.

ERI-1 siRNA (m): sc-45560

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

1. Kennedy, S., et al. 2004. A conserved siRNA-degrading RNase negatively regulates RNA interference in *C. elegans*. Nature 427: 645-649.
2. Timmons, L. 2004. Endogenous inhibitors of RNA interference in *Caenorhabditis elegans*. Bioessays 26: 715-718.
3. 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.
4. Zhang, J. 2005. Dampening the silencing effect of RNA interference in mammals. Biochem. J. 390: e5-e6.
5. 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.
6. Wang, D., et al. 2005. Somatic misexpression of germline P granules and enhanced RNA interference in retinoblastoma pathway mutants. Nature 436: 593-597.
7. Wilkins, C., et al. 2005. RNA interference is an antiviral defence mechanism in *Caenorhabditis elegans*. Nature 436: 1044-1047.
8. Lee, R.C., et al. 2006. Interacting endogenous and exogenous RNAi pathways in *Caenorhabditis elegans*. RNA 12: 589-597.

CHROMOSOMAL LOCATION

Genetic locus: Eri1 (mouse) mapping to 8 A4.

PRODUCT

ERI-1 siRNA (m) 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 ERI-1 shRNA Plasmid (m): sc-45560-SH and ERI-1 shRNA (m) Lentiviral Particles: sc-45560-V as alternate gene silencing products.

For independent verification of ERI-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-45560A, sc-45560B and sc-45560C.

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

ERI-1 siRNA (m) is recommended for the inhibition of ERI-1 expression in mouse 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.

GENE EXPRESSION MONITORING

ERI-1 (B-10): sc-137089 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 ERI-1 gene expression knockdown using RT-PCR Primer: ERI-1 (m)-PR: sc-45560-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.