SANTA CRUZ BIOTECHNOLOGY, INC.

LIN-9 siRNA (h): sc-88786

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LIN-9, also known as TGS, BARA or TGS1, is a 542 amino acid protein that localizes to the nucleoplasm and is a mammalian homolog of the *C. elegans* Lin-9 protein. Expressed in testis and thymus, LIN-9 functions as a component of the DREAM complex (also known as the LINC complex), which is comprised of several proteins, all of which work in concert to repress cell cycle-dependent genes. LIN-9 specifically acts as a tumor suppressor that associates with Rb and inhibits DNA synthesis, possibly also controlling the expression of genes that are required for the G_1/S cell cycle transition. Three isoforms of LIN-9 exist due to alternative splicing events. The gene encoding LIN-9 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

1. Korenjak, M., et al. 2004. Native E2F/RBF complexes contain Myb-interacting proteins and repress transcription of developmentally controlled E2F target genes. Cell 119: 181-193.
2. Gagrica, S., et al. 2004. Inhibition of oncogenic transformation by mammalian Lin-9, a pRB-associated protein. EMBO J. 23: 4627-4638.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609375. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Sandoval, R., et al. 2006. A mutant allele of BARA/LIN-9 rescues the cdk4$^{-/-}$ phenotype by releasing the repression on E2F-regulated genes. Exp. Cell Res. 312: 2465-2475.

CHROMOSOMAL LOCATION

Genetic locus: LIN9 (human) mapping to 1q42.12.

PRODUCT

LIN-9 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LIN-9 shRNA Plasmid (h): sc-88786-SH and LIN-9 shRNA (h) Lentiviral Particles: sc-88786-V as alternate gene silencing products.

For independent verification of LIN-9 (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-88786A, sc-88786B and sc-88786C.

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

LIN-9 siRNA (h) is recommended for the inhibition of LIN-9 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 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

LIN-9 (C-10): sc-398234 is recommended as a control antibody for monitoring of LIN-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 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 LIN-9 gene expression knockdown using RT-PCR Primer: LIN-9 (h)-PR: sc-88786-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Calvisi, D.F., et al. 2011. Activation of v-Myb avian myeloblastosis viral oncogene homolog-like2 (MYBL2)-LIN9 complex contributes to human hepatocarcinogenesis and identifies a subset of hepatocellular carcinoma with mutant p53. Hepatology 53: 1226-1236.
2. Nath, S., et al. 2015. Deregulation of Rb-E2F1 axis causes chromosomal instability by engaging the transactivation function of Cdc20-anaphase-promoting complex/cyclosome. Mol. Cell. Biol. 35: 356-369.
3. Zhang, Z., et al. 2019. The cell-penetrating FOXM1 N-terminus (M1-138) demonstrates potent inhibitory effects on cancer cells by targeting FOXM1 and FOXM1-interacting factor SMAD3. Theranostics 9: 2882-2896.

RESEARCH USE

For research use only, not for use in diagnostic procedures.