SANTA CRUZ BIOTECHNOLOGY, INC.

LIN-41 siRNA (h): sc-72328

BACKGROUND

LIN-41, also called tripartite motif-containing 71 (TRIM71), which was first identified in *Caenorhabditis elegans*, is responsible for the timing of cell fate determination. By encoding microRNAs (miRNAs), the heterochronic genes let-7 and lin-4 downregulate the gene encoding LIN-41. The miRNAs bind to six complementary sites on the 3' untranslated region (UTR) of the LIN-41 gene. This downregulation positively regulates the timing of the expression of LIN-29, an adult specification transcription factor. Null mutations in the gene encoding LIN-41 lead to the premature development of adult tissues during larval stages. Although LIN-41 is expressed in many different embryonic cell types, it is most highly expressed in the developing limb buds, tail buds and brachial arches.

REFERENCES

1. Slack, F.J., et al. 2000. The LIN-41 RBCC gene acts in the *C. elegans* heterochronic pathway between the let-7 regulatory RNA and the LIN-29 transcription factor. Mol. Cell 5: 659-669.
2. Vella, M.C., et al. 2004. The *C. elegans* microRNA let-7 binds to imperfect let-7 complementary sites from the LIN-41 3'UTR. Genes Dev. 18: 132-137.
3. Lancman, J.J., et al. 2005. Analysis of the regulation of LIN-41 during chick and mouse limb development. Dev. Dyn. 234: 948-960.
4. Schulman, B.R., et al. 2005. Reciprocal expression of LIN-41 and the microRNAs let-7 and mir-125 during mouse embryogenesis. Dev. Dyn. 234: 1046-1054.
5. Bagga, S., et al. 2005. Regulation by let-7 and lin-4 miRNAs results in target mRNA degradation. Cell 122: 553-563.
6. Kanamoto, T., et al. 2006. Cloning and regulation of the vertebrate homologue of LIN-41 that functions as a heterochronic gene in *Caenorhabditis elegans*. Dev. Dyn. 235: 1142-1149.
7. Del Rio-Albrechtsen, T., et al. 2006. Novel gain-of-function alleles demonstrate a role for the heterochronic gene LIN-41 in *C. elegans* male tail tip morphogenesis. Dev. Biol. 297: 74-86.

CHROMOSOMAL LOCATION

Genetic locus: TRIM71 (human) mapping to 3p22.3.

PRODUCT

LIN-41 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-41 shRNA Plasmid (h): sc-72328-SH and LIN-41 shRNA (h) Lentiviral Particles: sc-72328-V as alternate gene silencing products.

For independent verification of LIN-41 (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-72328A, sc-72328B and sc-72328C.

RESEARCH USE

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

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-41 siRNA (h) is recommended for the inhibition of LIN-41 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-41 (E-1): sc-393352 is recommended as a control antibody for monitoring of LIN-41 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-41 gene expression knockdown using RT-PCR Primer: LIN-41 (h)-PR: sc-72328-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.