

LIN-41 siRNA (m): sc-72329

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

- 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.
- 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.
- Lancman, J.J., et al. 2005. Analysis of the regulation of LIN-41 during chick and mouse limb development. *Dev. Dyn.* 234: 948-960.
- 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.
- Bagga, S., et al. 2005. Regulation by let-7 and lin-4 miRNAs results in target mRNA degradation. *Cell* 122: 553-563.

CHROMOSOMAL LOCATION

Genetic locus: Trim71 (mouse) mapping to 9 F3.

PRODUCT

LIN-41 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LIN-41 shRNA Plasmid (m): sc-72329-SH and LIN-41 shRNA (m) Lentiviral Particles: sc-72329-V as alternate gene silencing products.

For independent verification of LIN-41 (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-72329A, sc-72329B and sc-72329C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

LIN-41 siRNA (m) is recommended for the inhibition of LIN-41 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 μ M in 66 μ l. 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 (m)-PR: sc-72329-PR (20 μ l, 401 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Mohanty, V., et al. 2016. Folate receptor α upregulates Oct4, Sox2 and Klf4 and downregulates miR-138 and miR-let-7 in cranial neural crest cells. *Stem Cells* 34: 2721-2732.

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.