



LIN-28 siRNA (m): sc-106990

BACKGROUND

LIN-28 is a highly conserved, RNA-binding, cytoplasmic protein. It consists of a cold shock domain and retroviral-type (CCHC) zinc-finger motifs that were first identified in *Caenorhabditis elegans*. LIN-28 controls the timing of events during embryonic development and is readily expressed in embryos, embryonic stem cells and embryonal carcinoma cells. The presence of LIN-28 persists in some adult tissues including cardiac and skeletal muscle. In differentiating myoblasts, LIN-28 increases protein synthesis efficiency and binds to the growth and differentiation factor IGF-II.

REFERENCES

1. Moss, E.G., et al. 1997. The cold shock domain protein LIN-28 controls developmental timing in *C. elegans* and is regulated by the LIN-4 RNA. *Cell* 88: 637-646.
2. Siggerson, K., et al. 2002. Two genetic circuits repress the *Caenorhabditis elegans* heterochronic gene LIN-28 after translation initiation. *Dev. Biol.* 243: 215-225.
3. Moss, E.G., et al. 2003. Conservation of the heterochronic regulator LIN-28, its developmental expression and microRNA complementary sites. *Dev. Biol.* 258: 432-442.
4. Yang, D.H., et al. 2003. Temporally regulated expression of LIN-28 in diverse tissues of the developing mouse. *Gene Expr. Patterns* 3: 719-726.
5. Sempere, L.F., et al. 2004. Expression profiling of mammalian microRNAs uncovers a subset of brain-expressed microRNAs with possible roles in murine and human neuronal differentiation. *Genome Biol.* 5: R13.

CHROMOSOMAL LOCATION

Genetic locus: Lin28a (mouse) mapping to 4 D3.

PRODUCT

LIN-28 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-28 shRNA Plasmid (m): sc-106990-SH and LIN-28 shRNA (m) Lentiviral Particles: sc-106990-V as alternate gene silencing products.

For independent verification of LIN-28 (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-106990A, sc-106990B and sc-106990C.

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-28 siRNA (m) is recommended for the inhibition of LIN-28 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-28 (6D1F9): sc-293120 is recommended as a control antibody for monitoring of LIN-28 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-28 gene expression knockdown using RT-PCR Primer: LIN-28 (m)-PR: sc-106990-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Al-Lamki, R.S., et al. 2013. TNF, acting through inducibly expressed TNFR2, drives activation and cell cycle entry of c-Kit⁺ cardiac stem cells in ischemic heart disease. *Stem Cells* 31: 1881-1892.
2. Li, Q., et al. 2020. The role of Wnt/ β -catenin-lin28a/let-7 axis in embryo implantation competency and epithelial-mesenchymal transition (EMT). *Cell Commun. Signal.* 18: 108.

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.