SANTA CRUZ BIOTECHNOLOGY, INC.

LIN-28 siRNA (h): sc-106829

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. Seggerson, 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 (human) mapping to 1p36.11.

PRODUCT

LIN-28 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-28 shRNA Plasmid (h): sc-106829-SH and LIN-28 shRNA (h) Lentiviral Particles: sc-106829-V as alternate gene silencing products.

For independent verification of LIN-28 (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-106829A, sc-106829B and sc-106829C.

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-28 siRNA (h) is recommended for the inhibition of LIN-28 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-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-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-28 gene expression knockdown using RT-PCR Primer: LIN-28 (h)-PR: sc-106829-PR (20 µl, 427 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, C.W., et al. 2012. Ectopic over-expression of tristetraprolin in human cancer cells promotes biogenesis of let-7 by down-regulation of LIN-28. Nucleic Acids Res. 40: 3856-3869.
2. Lee, J.Y., et al. 2013. Tumor suppressor p53 plays a key role in induction of both tristetraprolin and let-7 in human cancer cells. Nucleic Acids Res. 41: 5614-5625.
3. Li, Q., et al. 2020. Regulation of human trophoblast surrogate Jeg-3 spheroids implantation potential by Wnt/β-catenin pathway and lin28a/let-7a axis. Exp. Cell Res. 388: 111718.

RESEARCH USE

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