

LIN-28B siRNA (h): sc-105614

BACKGROUND

LIN-28B, also known as CSDD2, is a 250 amino acid protein that localizes to the cytoplasm during the early stages of the cell cycle and translocates to the nucleus during the S and G₂ phases of the cell cycle. Expressed at high levels in placenta, testis and fetal liver, LIN-28B contains one cold-shock domain and two CCHC-type zinc-fingers and is thought to play a role in cell growth, specifically when overexpressed. Overexpression of LIN-28B stimulates the growth of breast adenocarcinoma and hepatocellular carcinoma cells, implying a role for LIN-28B in aberrant cell proliferation and metastasis. LIN-28B exists as multiple alternatively spliced isoforms which are encoded by a gene that maps to human chromosome 6q16.3. Chromosome 6 contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, Porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

1. 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.
2. Guo, Y., et al. 2006. Identification and characterization of LIN-28 homolog B (LIN28B) in human hepatocellular carcinoma. *Gene* 384: 51-61.
3. Thorgeirsson, S.S., et al. 2006. Functional genomics of hepatocellular carcinoma. *Hepatology* 43: S145-S150.

CHROMOSOMAL LOCATION

Genetic locus: LIN28B (human) mapping to 6q16.3.

PRODUCT

LIN-28B 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LIN-28B shRNA Plasmid (h): sc-105614-SH and LIN-28B shRNA (h) Lentiviral Particles: sc-105614-V as alternate gene silencing products.

For independent verification of LIN-28B (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-105614A, sc-105614B and sc-105614C.

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-28B siRNA (h) is recommended for the inhibition of LIN-28B 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LIN-28B gene expression knockdown using RT-PCR Primer: LIN-28B (h)-PR: sc-105614-PR (20 μ l, 433 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kong, D., et al. 2010. Epithelial to mesenchymal transition is mechanistically linked with stem cell signatures in prostate cancer cells. *PLoS ONE* 5: e12445.
2. Zhang, Y., et al. 2018. MicroRNA-26-5p functions as a new inhibitor of hepatoblastoma by repressing LIN-28 homolog B and aurora kinase a expression. *Hepatol. Commun.* 2: 861-871.
3. Lu, Y.Y., et al. 2018. MiR-26a functions as a tumor suppressor in ambient particulate matter-bound metal-triggered lung cancer cell metastasis by targeting LIN28B-IL6-STAT3 axis. *Arch. Toxicol.* 92: 1023-1035.

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.