SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-2.8 siRNA (m): sc-75930

BACKGROUND

Members of the NK-2 family of homeodomain proteins, which include Nkx-2.2, Nkx-2.5, Nkx-2.6 and Nkx-2.8, are key regulators of growth and development in several tissues, including brain, heart and pancreas. Nkx-2.2 is responsible for directing ventral neuronal patterning in response to graded Shh signaling. Nkx-2.5, also designated cardiac specific homeobox protein (Csx), is a homolog of the *Drosophila* tinman protein and is essential for normal cardiovascular development. Nkx-2.6, also a homolog of the *Drosophila* tinman protein, is expressed in the caudal pharyngeal pouches, the caudal heart progenitors, the sinus venosus, the outflow tract of the heart and in a short segment of the gut between stages E8.5 and E10.5 of embryogenesis. Nkx-2.8, also designated NK-2 homolog H, NKX2H or Nkx-2.9, is a nuclear protein that contains one homeobox DNA-binding domain, indicating a possible role in development.

REFERENCES

1. Komuro, I., et al. 1993. Csx: a murine homeobox-containing gene specifically expressed in the developing heart. Proc. Natl. Acad. Sci. USA 90: 8145-8149.
2. Mably, J.D., et al. 1996. Factors involved in cardiogenesis and the regulation of cardiac-specific gene expression. Circ. Res. 79: 4-13.
3. Pabst, O., et al. 1998. Nkx2-9 is a novel homeobox transcription factor which demarcates ventral domains in the developing mouse CNS. Mech. Dev. 73: 85-93.
4. Sussel, L., et al. 1998. Mice lacking the homeodomain transcription factor Nkx2.2 have diabetes due to arrested differentiation of pancreatic β cells. Development 125: 2213-2221.
5. Apergis, G.A., et al. 1998. A novel nk-2-related transcription factor associated with human fetal liver and hepatocellular carcinoma. J. Biol. Chem. 273: 2917-2925.
6. Tian, J., et al. 2006. Loss of Nkx2.8 deregulates progenitor cells in the large airways and leads to dysplasia. Cancer Res. 66: 10399-10407.
7. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 603245. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Nkx2-9 (mouse) mapping to 12 C1.

PRODUCT

Nkx-2.8 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nkx-2.8 shRNA Plasmid (m): sc-75930-SH and Nkx-2.8 shRNA (m) Lentiviral Particles: sc-75930-V as alternate gene silencing products.

For independent verification of Nkx-2.8 (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-75930A, sc-75930B and sc-75930C.

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

Nkx-2.8 siRNA (m) is recommended for the inhibition of Nkx-2.8 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nkx-2.8 gene expression knockdown using RT-PCR Primer: Nkx-2.8 (m)-PR: sc-75930-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.