SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-2.6 siRNA (h): sc-38727

BACKGROUND

Members of the NK-2 family of homeodomain proteins are key regulators of growth and development in several tissues, including brain, heart and pancreas. 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. Expression of Nkx-2.5 during cardiomyogenesis is required for cardiac septation, in which a single atrium and ventricle are separated into four chambers. Nkx-2.5 binds to DNA as a monomer, a homodimer or as a heterodimer with Nkx-2.3 or Nkx-2.6, which suggests that the specific protein-protein interactions of Nkx-2.5 are involved in its transcriptional regulatory function. 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. Expression of Nkx-2.6 overlaps with that of Nkx-2.5 in the pharynx and heart. However, Nkx-2.6 mutant mice are viable and fertile, which suggests that Nkx-2.6 plays a compensatory function to Nkx-2.5.

REFERENCES

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6. Hesabi, B., et al. 2000. The homeodomain of Nkx2.2 carries two cooperatively acting nuclear localization signals. Biochem. Biophys. Res. Commun. 270: 695-700.
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CHROMOSOMAL LOCATION

Genetic locus: NKX2-6 (human) mapping to 8p21.2.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Nkx-2.6 siRNA (h) is a pool of 2 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-2.6 shRNA Plasmid (h): sc-38727-SH and Nkx-2.6 shRNA (h) Lentiviral Particles: sc-38727-V as alternate gene silencing products.

For independent verification of Nkx-2.6 (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-38727A and sc-38727B.

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-2.6 siRNA (h) is recommended for the inhibition of Nkx-2.6 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nkx-2.6 gene expression knockdown using RT-PCR Primer: Nkx-2.6 (h)-PR: sc-38727-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.