

# Nkx-2.8 siRNA (h): sc-75929

## 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.
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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  $\beta$  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.
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## CHROMOSOMAL LOCATION

Genetic locus: NKX2-8 (human) mapping to 14q13.3.

## PRODUCT

Nkx-2.8 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nkx-2.8 shRNA Plasmid (h): sc-75929-SH and Nkx-2.8 shRNA (h) Lentiviral Particles: sc-75929-V as alternate gene silencing products.

For independent verification of Nkx-2.8 (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-75929A, sc-75929B and sc-75929C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Nkx-2.8 siRNA (h) is recommended for the inhibition of Nkx-2.8 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  $\mu$ M in 66  $\mu$ 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 Nkx-2.8 gene expression knockdown using RT-PCR Primer: Nkx-2.8 (h)-PR: sc-75929-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.