

HoxD4 siRNA (h): sc-75295

BACKGROUND

The Hox proteins are a family of transcription factors that play a role in development and cellular differentiation by regulating downstream target genes. Specifically, the Hox proteins direct DNA-protein and protein-protein interactions that assist in determining the morphologic features associated with the anterior-posterior body axis. Hox proteins are involved in controlling axial patterning, leukemias and hereditary malformations. HoxD4 (homeobox protein D4), also known as HOX4B, is a 255 amino acid protein that localizes to the nucleus and contains one homeobox DNA-binding domain. One of several members of the homeobox superfamily, HoxD4 functions as a sequence-specific transcription factor that is important for the correct positioning of developing limb buds on the anterior-posterior axis. Mutations in the gene encoding HoxD4 are associated with the pathogenesis of childhood acute lymphoblastic leukemia.

REFERENCES

1. Mavilio, F., et al. 1986. Differential and stage-related expression in embryonic tissues of a new human homeobox gene. *Nature* 324: 664-668.
2. Oliver, G., et al. 1989. Complementary homeo protein gradients in developing limb buds. *Genes Dev.* 3: 641-650.
3. Kim, Y.H., et al. 1998. Homeodomain-interacting protein kinases, a novel family of corepressors for homeodomain transcription factors. *J. Biol. Chem.* 273: 25875-25879.
4. Del Campo, M., et al. 1999. Monodactylous limbs and abnormal genitalia are associated with hemizygoty for the human 2q31 region that includes the HOXD cluster. *Am. J. Hum. Genet.* 65: 104-110.
5. Zákány, J., et al. 1999. Hox genes and the making of sphincters. *Nature* 401: 761-762.
6. Shen, W.F., et al. 2001. The Hox homeodomain proteins block CBP histone acetyltransferase activity. *Mol. Cell. Biol.* 21: 7509-7522.
7. Kosaki, K., et al. 2002. Complete mutation analysis panel of the 39 human HOX genes. *Teratology* 65: 50-62.

CHROMOSOMAL LOCATION

Genetic locus: HOXD4 (human) mapping to 2q31.1.

PRODUCT

HoxD4 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 HoxD4 shRNA Plasmid (h): sc-75295-SH and HoxD4 shRNA (h) Lentiviral Particles: sc-75295-V as alternate gene silencing products.

For independent verification of HoxD4 (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-75295A, sc-75295B and sc-75295C.

RESEARCH USE

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

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

HoxD4 siRNA (h) is recommended for the inhibition of HoxD4 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 HoxD4 gene expression knockdown using RT-PCR Primer: HoxD4 (h)-PR: sc-75295-PR (20 μ l, 410 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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