

HoxD10 siRNA (h): sc-44814

BACKGROUND

The Hox proteins 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. Homeobox protein HoxD10, also designated Hox-4D or Hox-4E, belongs to the Abd-B homeobox family of proteins. HoxD10 is a nuclear protein primarily expressed in the adult male and female urogenital tracts but also expressed in developing limb buds during development. Defects in the gene encoding for the HoxD10 protein cause congenital vertical talus (CVT), more commonly known as rocker-bottom foot deformity. CVT is characterized by a dislocation of the talonavicular joint but is usually accompanied by other congenital deformities.

REFERENCES

1. Zappavigna, V., et al. 1991. HOX4 genes encode transcription factors with potential auto- and cross-regulatory capacities. *EMBO J.* 10: 4177-4187.
2. Redline, R.W., et al. 1992. Human HOX4E: a gene strongly expressed in the adult male and female urogenital tracts. *Genomics* 13: 425-430.
3. Gabellini, D., et al. 2003. Early mitotic degradation of the homeoprotein HoxC10 is potentially linked to cell cycle progression. *EMBO J.* 22: 3715-3724.
4. Juan, A.H., et al. 2003. Enhancer timing of Hox gene expression: deletion of the endogenous HoxC8 early enhancer. *Development* 130: 4823-4834.
5. Miller, G.J., et al. 2003. Aberrant HoxC expression accompanies the malignant phenotype in human prostate. *Cancer Res.* 63: 5879-5888.
6. Nicolas, S., et al. 2003. The spatial restrictions of 5' HoxC genes expression are maintained in adult newt spinal cord. *Biol. Cell* 95: 589-594.
7. Akbas, G.E., et al. 2004. HOXC and HOXD gene expression in human endometrium: lack of redundancy with HOXA paralogs. *Biol. Reprod.* 70: 39-45.
8. Chen, K.N., et al. 2005. Expression of 11 HOX genes is deregulated in esophageal squamous cell carcinoma. *Clin. Cancer Res.* 11: 1044-1049.

CHROMOSOMAL LOCATION

Genetic locus: HOXD10 (human) mapping to 2q31.1.

PRODUCT

HoxD10 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 HoxD10 shRNA Plasmid (h): sc-44814-SH and HoxD10 shRNA (h) Lentiviral Particles: sc-44814-V as alternate gene silencing products.

For independent verification of HoxD10 (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-44814A, sc-44814B and sc-44814C.

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

HoxD10 siRNA (h) is recommended for the inhibition of HoxD10 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.

GENE EXPRESSION MONITORING

HoxD10 (G-3): sc-166235 is recommended as a control antibody for monitoring of HoxD10 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxD10 gene expression knockdown using RT-PCR Primer: HoxD10 (h)-PR: sc-44814-PR (20 μ l, 554 bp). 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.