SANTA CRUZ BIOTECHNOLOGY, INC.

HoxD11 siRNA (h): sc-75291

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. HoxD11 (homeobox D11), also known as HOX4 or HOX4F, is a 338 amino acid protein that contains one homeobox DNA-binding domain and is a member of the Abd B homeobox family. Localized to the nucleus, HoxD11 functions as a sequence-specific transcription factor that, in conjunction with a variety of other proteins, provides cells with positional identities on their anterior-posterior axis. Defects in the gene encoding HoxD11 are associated with severe limb and genital abnormalities, suggesting that HoxD11 plays an important role in forelimb morphogenesis.

REFERENCES

1. Acampora, D., et al. 1989. The human HOX gene family. Nucleic Acids Res. 17: 10385-10402.
2. Johnson, R.L. and Tabin, C.J. 1997. Molecular models for vertebrate limb development. Cell 90: 979-990.
3. Taketani, T., et al. 2002. The HOXD11 gene is fused to the NUP98 gene in acute myeloid leukemia with t(2;11)(q31;p15). Cancer Res. 62: 33-37.
4. Kmita, M., et al. 2002. Serial deletions and duplications suggest a mechanism for the collinearity of HOXD genes in limbs. Nature 420: 145-150.
5. Zákány, J., et al. 2004. A dual role for HOX genes in limb anterior-posterior asymmetry. Science 304: 1669-1672.
6. Spitz, F., et al. 2005. Inversion-induced disruption of the HoxD cluster leads to the partition of regulatory landscapes. Nat. Genet. 37: 889-893.
7. Tarchini, B., et al. 2006. Regulatory constraints in the evolution of the tetrapod limb anterior-posterior polarity. Nature 443: 985-988.

CHROMOSOMAL LOCATION

Genetic locus: HOXD11 (human) mapping to 2q31.1.

PRODUCT

HoxD11 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 HoxD11 shRNA Plasmid (h): sc-75291-SH and HoxD11 shRNA (h) Lentiviral Particles: sc-75291-V as alternate gene silencing products.

For independent verification of HoxD11 (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-75291A and sc-75291B.

PROTOCOLS

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

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

HoxD11 siRNA (h) is recommended for the inhibition of HoxD11 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.

GENE EXPRESSION MONITORING

HoxD11 (R-26): sc-81969 is recommended as a control antibody for monitoring of HoxD11 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 HoxD11 gene expression knockdown using RT-PCR Primer: HoxD11 (h)-PR: sc-75291-PR (20 µl, 549 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.