SANTA CRUZ BIOTECHNOLOGY, INC.

HoxD9 siRNA (m): sc-35586

BACKGROUND

The Hox proteins play a role in patterns of embryonic development and cellular differentiation by regulating downstream target genes. *In vivo,* the HoxD9 protein interacts with the autoregulatory and cross-regulatory enhancers of the murine HoxB1 and human HoxD9 genes. Specifically, the HoxD9 protein interacts with the human control region (HCR) of the HoxD9 gene, thus inducing transcription of the HoxD9 promoter. HoxD9 may be a multifunctional transcriptional regulator, as it contains different activation domains. Activation of HoxD9 depends on the structure of the target regulatory element, and results in differential cofactor interaction. The HoxD9 protein is expressed in the early stages of mouse joint development, primarily in the articular cartilage. HoxD9 transcripts are also detected in the synovial tissue of arthritic mice, but not in that of normal mice, suggesting that HoxD9 may have a role in the pathology of arthritis. Furthermore, the HoxD9 protein is highly expressed in the synoviocytes of patients with rheumatoid arthritis (RA), but not in osteoarthritis patients. The human HoxD9 protein is also differentially expressed in the human cervical cancer cell line HeLa, but is not expressed in the normal cervix and may thus play a role in tumorigenesis.

REFERENCES

1. Zappavigna, V., et al. 1994. Specificity of Hox protein function depends on DNA-protein and protein-protein interactions, both mediated by the homeo domain. Genes Dev. 8: 732-744.
2. Vigano, M.A., et al. 1998. Definition of the transcriptional activation domains of three human Hox proteins depends on the DNA-binding context. Mol. Cell. Biol. 18: 6201-6212.
3. Khoa, N.D., et al. 1999. Expression of murine HoxD9 during embryonic joint patterning and in human T lymphotropic virus type I tax transgenic mice with arthropathy resembling rheumatoid arthritis. Arthritis Rheum. 42: 686-696.
4. Khoa, N.D., et al. 2001. Potential role of HoxD9 in synoviocyte proliferation. Arthritis Rheum. 44: 1013-1021.
5. Li, H., et al. 2002. Expression of homeobox genes in cervical cancer. Gynecol. Oncol. 84: 216-221.

CHROMOSOMAL LOCATION

Genetic locus: Hoxd9 (mouse) mapping to 2 C3.

PRODUCT

HoxD9 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HoxD9 shRNA Plasmid (m): sc-35586-SH and HoxD9 shRNA (m) Lentiviral Particles: sc-35586-V as alternate gene silencing products.

For independent verification of HoxD9 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35586A, sc-35586B and sc-35586C.

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

HoxD9 siRNA (m) is recommended for the inhibition of HoxD9 expression in mouse 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

HoxD9 (H-2): sc-137134 is recommended as a control antibody for monitoring of HoxD9 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 HoxD9 gene expression knockdown using RT-PCR Primer: HoxD9 (m)-PR: sc-35586-PR (20 µl, 580 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.