SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB9 siRNA (m): sc-45670

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. The mammalian HOX gene complex consists of 39 genes that are located on 4 linkage groups, which are dispersed over 4 chromosomes. HOX genes that occupy the same relative position along the 5' to 3' coordinate *(trans*-paralogous genes) are more similar in sequence and expression pattern than adjacent HOX genes on the same chromosome. In mice, the HoxB cluster contains HoxB1 to HoxB9 and HoxB13, which are transcribed in the same direction. HoxB9 associates with the transcriptional cofactors BTG1 and BTG2, which enhance HoxB9 transcription. Alterations in HoxB9 expression, as with other Hox family member, has been implicated in leukemia.

REFERENCES

1. Ohnishi, K., et al. 1998. Modulation of homeobox B6 and B9 genes expression in human leukemia cell lines during myelomonocytic differentiation. Leuk. Lymphoma 31: 599-608.
2. Chen, F., et al. 1999. Paralogous mouse Hox genes, HoxA9, HoxB9, and HoxD9, function together to control development of the mammary gland in response to pregnancy. Proc. Natl. Acad. Sci. USA 96: 541-546.
3. Calvo, R., et al. 2000. Altered HOX and WNT7A expression in human lung cancer. Proc. Natl. Acad. Sci. USA 97: 12776-12781.
4. Medina-Martinez, O., et al. 2000. A large targeted deletion of HoxB1-HoxB9 produces a series of single-segment anterior homeotic transformations. Dev. Biol. 222: 71-83.
5. Prevot, D., et al. 2000. The leukemia-associated protein Btg1 and the p53-regulated protein Btg2 interact with the homeoprotein HoxB9 and enhance its transcriptional activation. J. Biol. Chem. 275: 147-153.
6. 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: Hoxb9 (mouse) mapping to 11 D.

PRODUCT

HoxB9 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 HoxB9 shRNA Plasmid (m): sc-45670-SH and HoxB9 shRNA (m) Lentiviral Particles: sc-45670-V as alternate gene silencing products.

For independent verification of HoxB9 (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-45670A, sc-45670B and sc-45670C.

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 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

HoxB9 shRNA (m) Lentiviral Particles is recommended for the inhibition of HoxB9 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

HoxB9 (H-8): sc-398500 is recommended as a control antibody for monitoring of HoxB9 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 HoxB9 gene expression knockdown using RT-PCR Primer: HoxB9 (m)-PR: sc-45670-PR (20 µl). 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.