SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB4 siRNA (m): sc-38693

BACKGROUND

The homeobox genes encode a family of transcription factors that regulate development and postnatal tissue homeostasis. Encoded by the HoxB4 gene, the nuclear phosphoprotein HoxB4 plays a key role in regulating the balance between hematopoietic stem cell renewal and differentiation. Hematopoietic expression of HoxB4 is regulated by the binding of USF-1 and USF-2, the binding of which may be favored by cytokines promoting stem cell self-renewal versus differentiation. HoxB4 is dependent on AP-1 expression to induce changes in cellular proliferation and differentiation, which increases the levels of cyclin D1, thereby linking HoxB4 with key elements of the cell cycle machinery. HoxB4 also participates in the down-regulation of c-Myc expression. It is expressed in developing hair follicles as well as in K-562 and HL-60 cells.

REFERENCES

1. Rabin, M., et al. 1985. Two homoeo box loci mapped in evolutionarily related mouse and human chromosomes. Nature 314: 175-178.
2. Pan, Q., et al. 1999. c-Myc intron element-binding proteins are required for 1,24-dihydroxyvitamin D_3 regulation of c-myc furing HL-60 cell differentiation and the involvement of HoxB4. J. Biol. Chem. 274: 8437-8444.
3. Giannola, D.M., et al. 2000. Hematopoietic expression of HoxB4 is regulated in normal and leukemic stem cells through transcriptional activation of the HoxB4 promoter by upstream stimulating factor (USF)-1 and USF-2. J. Exp. Med. 192: 1479-1490.
4. Krosl, J., et al. 2000. AP-1 complex is effector of Hox-induced cellular proliferation and transformation. Oncogene 19: 5134-5141.
5. Packer, A.I., et al. 2000. HoxA4 expression in developing mouse hair follicles and skin. Mech. Dev. 99: 153-157.
6. Pan, Q., et al. 2001. Antisense knockout of HoxB4 blocks 1,25-dihydrooxyvitamin D_3 inhibition of c-Myc expression. J. Endocrinol. 169: 153-159.

CHROMOSOMAL LOCATION

Genetic locus: Hoxb4 (mouse) mapping to 11 D.

PRODUCT

HoxB4 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 HoxB4 shRNA Plasmid (m): sc-38693-SH and HoxB4 shRNA (m) Lentiviral Particles: sc-38693-V as alternate gene silencing products.

For independent verification of HoxB4 (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-38693A, sc-38693B and sc-38693C.

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

HoxB4 siRNA (m) is recommended for the inhibition of HoxB4 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

HoxB4 (C-10): sc-271083 is recommended as a control antibody for monitoring of HoxB4 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 HoxB4 gene expression knockdown using RT-PCR Primer: HoxB4 (m)-PR: sc-38693-PR (20 µl). 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.