

# HoxB6 siRNA (h): sc-38694

## BACKGROUND

Hox genes play a fundamental role in the development of the vertebrate central nervous system, heart, axial skeleton, limbs, gut, urogenital tract and external genitalia. There are multiple transcripts of the HoxB3 gene, and the anterior boundaries of its expression vary at different stages of development. HoxB3 plays a role in the proliferation and differentiation of both early myeloid and lymphoid developmental pathways. HoxB3 also has overlapping function in mediating the migration of pharyngeal organ primordia and is expressed in very restricted domains in the future hindbrain. HoxB6 controls the generation, proliferation and survival of erythroid progenitor cells. The HoxB6 protein is expressed in the suprabasal layer of the early developing epidermis and throughout the upper layers of late fetal and adult human skin. HoxB6 is cytoplasmically expressed throughout fetal epidermal development, but displays nuclear expression in normal adult skin. HoxB6 protein also has nuclear expression in hyperproliferative skin conditions, but appears to be localized in the cytoplasm in basal and squamous cell carcinomas. HoxB6 genes are also expressed in normal adult lung.

## REFERENCES

1. Godsavage, S., et al. 1994. Expression patterns of HoxB genes in the *Xenopus* embryo suggest roles in anteroposterior specification of the hindbrain and in dorsoventral patterning of the mesoderm. *Dev. Biol.* 166: 465-476.
2. Sauvageau, G., et al. 1997. Overexpression of HoxB3 in hematopoietic cells causes defective lymphoid development and progressive myeloproliferation. *Immunity* 6: 13-22.
3. Manley, N.R., et al. 1998. Hox group 3 paralogs regulate the development and migration of the thymus, thyroid, and parathyroid glands. *Dev. Biol.* 195: 1-15.
4. Kappen, C. 2000. Disruption of the homeobox gene HoxB6 in mice results in increased numbers of early erythrocyte progenitors. *Am. J. Hematol.* 65: 111-118.
5. Komuves, L.G., et al. 2000. Changes in HoxB6 homeodomain protein structure and localization during human epidermal development and differentiation. *Dev. Dyn.* 218: 636-647.
6. Goodman, F.R., et al. 2001. Human HOX gene mutations. *Clin. Genet.* 59: 1-11.

## CHROMOSOMAL LOCATION

Genetic locus: HOXB6 (human) mapping to 17q21.32.

## PRODUCT

HoxB6 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HoxB6 shRNA Plasmid (h): sc-38694-SH and HoxB6 shRNA (h) Lentiviral Particles: sc-38694-V as alternate gene silencing products.

For independent verification of HoxB6 (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-38694A, sc-38694B and sc-38694C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

HoxB6 siRNA (h) is recommended for the inhibition of HoxB6 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  $\mu$ M in 66  $\mu$ 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

HoxB6 (B-12): sc-166950 is recommended as a control antibody for monitoring of HoxB6 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxB6 gene expression knockdown using RT-PCR Primer: HoxB6 (h)-PR: sc-38694-PR (20  $\mu$ l, 424 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](http://www.scbt.com) for detailed protocols and support products.