SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB3 siRNA (h): sc-38690

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. Godsave, 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. Golpon, H.A., et al. 2001. HOX genes in human lung: altered expression in primary pulmonary hypertension and emphysema. Am. J. Pathol. 158: 955-966.
7. Goodman, F.R. et al. 2001. Human HOX gene mutations. Clin. Genet. 59: 1-11.
8. Kwan, C.T., et al. 2001. Regulatory analysis of the mouse Hoxb3 gene: multiple elements work in concert to direct temporal and spatial patterns of expression. Dev. Biol. 232: 176-190.

CHROMOSOMAL LOCATION

Genetic locus: HOXB3 (human) mapping to 17q21.32.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

HoxB3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HoxB3 shRNA Plasmid (h): sc-38690-SH and HoxB3 shRNA (h) Lentiviral Particles: sc-38690-V as alternate gene silencing products.

For independent verification of HoxB3 (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-38690A, sc-38690B and sc-38690C.

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

HoxB3 siRNA (h) is recommended for the inhibition of HoxB3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxB3 gene expression knockdown using RT-PCR Primer: HoxB3 (h)-PR: sc-38690-PR (20 µl, 554 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Weiss, F.U., et al. 2009. Retinoic acid receptor antagonists inhibit miR-10a expression and block metastatic behavior of pancreatic cancer. Gastroenterology 137: 2136-2145.

PROTOCOLS

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