SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB1 siRNA (m): sc-38687

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. The homeobox gene Hoxb-1 is critical to hindbrain development and has phenotypic features frequently observed in autism. Analysis of expression and targeted disruption of Hoxb-1 demonstrates that it is also essential for patterning progenitor cells along the entire DV axis of rhombomere 4 (r4). Hoxb-1 maintains this function by acting very early during hindbrain neurogenesis to specify effectors of the sonic hedgehog and Mash1 signaling pathways. HoxB2 is a homeodomain protein important in neural development that is also expressed during erythropoiesis, hindbrain development and normal human adult lung development. HoxB2 may modulate the amount of γ-globin mRNA expressed during development and differentiation. In addition, HoxB2 plays an important role in the patterning of hindbrain and pharyngeal arches in the zebrafish.

REFERENCES

1. Yan, Y.L., et al. 1998. Ectopic expression of HoxB2 after retinoic acid treatment or mRNA injection: disruption of hindbrain and craniofacial morphogenesis in zebrafish embryos. Dev. Dyn. 213: 370-385.
2. Case, S.S., et al. 1999. The γPE complex contains both SATB1 and HoxB2 and has positive and negative roles in human γ-globin gene regulation. DNA Cell Biol. 18: 805-817.
3. Ingram, J.L., et al. 2000. Discovery of allelic variants of HoxA1 and HoxB1: genetic susceptibility to autism spectrum disorders. Teratology 62: 393-405.
4. Gaufo, G.O., et al. 2000. HoxB1 controls effectors of sonic hedgehog and Mash1 signaling pathways. Development 127: 5343-5354.
5. Goodman, F.R., et al. 2001. Human HOX gene mutations. Clin. Genet. 59: 1-11.
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.

CHROMOSOMAL LOCATION

Genetic locus: Hoxb1 (mouse) mapping to 11 D.

PRODUCT

HoxB1 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 HoxB1 shRNA Plasmid (m): sc-38687-SH and HoxB1 shRNA (m) Lentiviral Particles: sc-38687-V as alternate gene silencing products.

For independent verification of HoxB1 (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-38687A, sc-38687B and sc-38687C.

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

HoxB1 siRNA (m) is recommended for the inhibition of HoxB1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxB1 gene expression knockdown using RT-PCR Primer: HoxB1 (m)-PR: sc-38687-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.