SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB5 siRNA (m): sc-75280

BACKGROUND

The Hox proteins are a family of transcription factors that 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. Hox proteins are involved in controlling axial patterning, leukemias and hereditary malformations. HoxB5 (homeobox protein Hox-B5), also known as HOX2, HU-1, HOX2A, Hox2.1 or HHO.C10, is a member of the Antp homeobox (Hox) family. It is a 269 amino acid long nuclear protein expressed in the central nervous system. HoxB5 contains one homeobox DNA-binding domain and plays a role in the regulation of lung and gut development, providing cells with positional identities on the anterior-posterior body axis.

REFERENCES

1. Sakach, M., et al. 1997. Localization of the HoxB5 protein in the developing CNS of late gestational mouse embryos. Int. J. Dev. Neurosci. 14: 567-573.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 142960. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Fu, M., et al. 2003. HOXB5 expression is spatially and temporarily regulated in human embryonic gut during neural crest cell colonization and differentiation of enteric neuroblasts. Dev. Dyn. 228: 1-10.
4. Wu, Y., et al. 2003. HoxB5 is an upstream transcriptional switch for differentiation of the vascular endothelium from precursor cells. Mol. Cell. Biol. 23: 5680-5691.
5. Chen, L.Y., et al. 2003. Influence of human cytomegalovirus infection on the expressions of HOXB.HOXB5, HOXB6, and HOXB9 genes in human embryo lung cells. Hunan Yi Ke Da Xue Xue Bao 26: 189-191.
6. Korshunov, A., et al. 2003. Gene expression patterns in ependymomas correlate with tumor location, grade, and patient age. Am. J. Pathol. 163: 1721-1727.
7. Neben, K., et al. 2005. Distinct gene expression patterns associated with FLT3- and NRAS-activating mutations in acute myeloid leukemia with normal karyotype. Oncogene 24: 1580-1588.

CHROMOSOMAL LOCATION

Genetic locus: Hoxb5 (mouse) mapping to 11 D.

PRODUCT

HoxB5 siRNA (m) is a pool of 2 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 HoxB5 shRNA Plasmid (m): sc-75280-SH and HoxB5 shRNA (m) Lentiviral Particles: sc-75280-V as alternate gene silencing products.

For independent verification of HoxB5 (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-75280A and sc-75280B.

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

HoxB5 siRNA (m) is recommended for the inhibition of HoxB5 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 HoxB5 gene expression knockdown using RT-PCR Primer: HoxB5 (m)-PR: sc-75280-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.

PROTOCOLS

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