SANTA CRUZ BIOTECHNOLOGY, INC.

HoxA5 siRNA (h): sc-38678

BACKGROUND

HoxA5 (previously identified as Hox-1.3) is a transcriptional regulator of multiple target genes, including p53 and the progesterone receptor. It is a potent transactivator of p53 and may affect the response of breast cancer cells to DNA damage. In primary breast carcinomas, loss of p53 expression is coupled with loss of HoxA5 expression, suggesting that the loss of HoxA5 expression is important in tumorigenesis. HoxA5 is dynamically expressed during gut development and organogenesis of the respiratory tract, and is continuously expressed from the neonatal period into adult stages in cerebellar Purkinje cells. Expression of HoxA5 is necessary for the region-specific differentiation of the endoderm and differentiation of the myeloid pathway. HoxA5 is also essential for correct specification of the cervical and upper thoracic region of the skeleton and for proper patterning of the embryo.

REFERENCES

1. Aubin, J., et al. 1998. Transcriptional interferences at the HoxA4/HoxA5 locus: importance of correct HoxA5 expression for the proper specification of the axial skeleton. Dev. Dyn. 212: 141-156.
2. Sanlioglu, S., et al. 1998. Regulation of Purkinje cell-specific promoter by homeodomain proteins: repression by engrailed-2 vs. synergistic activation by HoxA5 and HoxB7. J. Neurobiol. 36: 559-571.
3. Aubin, J., et al. 1999. Loss of HoxA5 gene function in mice perturbs intestinal maturation. Am. J. Physiol. 277: 965-973.
4. Crooks, G.M., et al. 1999. Constitutive HoxA5 expression inhibits erythropoiesis and increases myelopoiesis from human hematopoietic progenitors. Blood 94: 519-528.
5. Larochelle, C., et al. 1999. Multiple *cis*-acting regulatory regions are required for restricted spatio-temporal HoxA5 gene expression. Dev. Dyn. 214: 127-140.
6. Nowling, T., et al. 1999. HoxA5 gene regulation: a gradient of binding activity to a brachial spinal cord element. Dev. Biol. 208: 134-146.
7. Raman, V., et al. 2000. Compromised HoxA5 function can limit p53 expression in human breast tumours. Nature 405: 974-978.
8. Raman, V., et al. 2000. HoxA5 regulates expression of the progesterone receptor. J. Biol. Chem. 275: 26551-26555.

CHROMOSOMAL LOCATION

Genetic locus: HOXA5 (human) mapping to 7p15.2.

PRODUCT

HoxA5 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 HoxA5 shRNA Plasmid (h): sc-38678-SH and HoxA5 shRNA (h) Lentiviral Particles: sc-38678-V as alternate gene silencing products.

For independent verification of HoxA5 (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-38678A, sc-38678B and sc-38678C.

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

HoxA5 siRNA (h) is recommended for the inhibition of HoxA5 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.

GENE EXPRESSION MONITORING

HoxA5 (C-11): sc-365784 is recommended as a control antibody for monitoring of HoxA5 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 HoxA5 gene expression knockdown using RT-PCR Primer: HoxA5 (h)-PR: sc-38678-PR (20 µl, 512 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 for detailed protocols and support products.