SANTA CRUZ BIOTECHNOLOGY, INC.

HoxA9 siRNA (h): sc-38682

BACKGROUND

The Hox homeobox genes encode proteins that play a role in embryonic development. The HoxA9 gene encodes a class I homeodomain protein, which is expressed in normal adult and fetal thymic tissue, and may play a role in regulating early differentiation of thymocytes. The HoxA9 homeodomain protein cooperatively binds consensus DNA sequences with Meis1 and Pbx1. In addition, the HoxA9 protein, along with the MEIS1 and Pbx 1 proteins, have been implicated in leukemic transformation in both mice and humans. Further-more, overexpression of both HoxA9 and Meis1 in primary bone marrow cells in syngenic mice induced growth factor-dependent acute myeloid leukemia (AML). Chromosomal translocation of t(7;11)(p15;p15) has been demonstrated in patients with human AML and chronic myelogenous leukemia (CML), resulting in the fusion gene NUP98-HoxA9. Mice transplanted with bone marrow cells expressing NUP98-NoxA9 acquire a myeloproliferative disease (MPD) which ultimately degrades to AML.

REFERENCES

1. Nakamura, T., et al. 1996. Fusion of the nucleoporin gene NUP98 to HoxA9 by the chromosome translocation t(7;11)(p15;p15) in human myeloid leukaemia. Nat. Genet.12: 154-158.
2. Izon, D.J., et al. 1998. Loss of function of the homeobox gene HoxA9 perturbs early T cell development and induces apoptosis in primitive thymocytes. Blood 92: 383-393.
3. Kroon, E., et al. 1998. HoxA9 transforms primary bone marrow cells through specific collaboration with Meis1a but not Pbx1b. EMBO J. 17: 3714-3725.
4. Taylor, H.S., et al. 1998. HoxA10 is expressed in response to sex steroids at the time of implantation in the human endometrium. J. Clin. Invest. 101: 1379-1384.
5. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 142956. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Kroon, E., et al. 2001. NUP98-HoxA9 expression in hemopoietic stem cells induces chronic and acute myeloid leukemias in mice. EMBO J. 20: 350-361.

CHROMOSOMAL LOCATION

Genetic locus: HOXA9 (human) mapping to 7p15.2.

PRODUCT

HoxA9 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 HoxA9 shRNA Plasmid (h): sc-38682-SH and HoxA9 shRNA (h) Lentiviral Particles: sc-38682-V as alternate gene silencing products.

For independent verification of HoxA9 (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-38682A, sc-38682B and sc-38682C.

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

HoxA9 siRNA (h) is recommended for the inhibition of HoxA9 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

HoxA9 (HOX5I043): sc-81291 is recommended as a control antibody for monitoring of HoxA9 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 HoxA9 gene expression knockdown using RT-PCR Primer: HoxA9 (h)-PR: sc-38682-PR (20 µl, 521 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.