

HoxA13 siRNA (h): sc-45666

BACKGROUND

The Hox proteins 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. HoxA13 and HoxD13 also bind to other BMP and TGF- β /Activin-regulated Smad proteins including Smad1 and Smad2, but not Smad4. In humans and mice, loss of HOXA13 function causes defects in the growth and patterning of the digits and interdigital tissues. Analysis of HoxA13 expression reveals a pattern of localization overlapping with sites of reduced Bmp2 and Bmp7 expression in HoxA13 mutant limbs. HoxA13 regulates Bmp2 and Bmp7 expression, providing a link between HoxA13, its target genes and the specific developmental processes affected by loss of HoxA13 function.

REFERENCES

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- Grier, D.G., et al. 2005. The pathophysiology of HOX genes and their role in cancer. *J. Pathol.* 205: 154-171.
- Williams, T.M., et al. 2005. Range of HOX/TALE superclass associations and protein domain requirements for HOXA13:MEIS interaction. *Dev. Biol.* 277: 457-471.
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- Archontis, G., et al. 2005. Glycogen phosphorylase inhibitors: a free energy perturbation analysis of glucopyranose spirohydantoin analogues. *Proteins* 61: 984-998.
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CHROMOSOMAL LOCATION

Genetic locus: HOXA13 (human) mapping to 7p15.2.

PRODUCT

HoxA13 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HoxA13 shRNA Plasmid (h): sc-45666-SH and HoxA13 shRNA (h) Lentiviral Particles: sc-45666-V as alternate gene silencing products.

For independent verification of HoxA13 (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-45666A, sc-45666B and sc-45666C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

HoxA13 shRNA (h) Lentiviral Particles is recommended for the inhibition of HoxA13 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 μ M in 66 μ l. 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 HoxA13 gene expression knockdown using RT-PCR Primer: HoxA13 (h)-PR: sc-45666-PR (20 μ l, 413 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Li, H., et al. 2016. HoxA13 stimulates myometrial cells to secrete IL-1 β and enhance the expression of contraction-associated proteins. *Endocrinology* 157: 2129-2139.
- Shi, Q., et al. 2018. Downregulation of HOXA13 sensitizes human esophageal squamous cell carcinoma to chemotherapy. *Thorac. Cancer* 9: 836-846.
- Wang, Y., et al. 2021. Homeobox-A13 acts as a functional prognostic and diagnostic biomarker via regulating P53 and Wnt signaling pathways in lung cancer. *Cancer Biomark.* 31: 239-254.

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.