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# HoxB13 siRNA (h): sc-43851

## 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. HoxB13 is a sequence-specific transcription factor which is part of a developmental regulatory system that provides cells with specific positional identities on the anterior-posterior axis. HoxB13 is highly expressed in the prostate gland from the embryonic stages to adulthood and is required for normal differentiation and secretory function of that organ. HoxB13 is primarily expressed in the nucleus, but is cytoplasmic throughout fetal skin development and some hyperproliferative skin conditions.

## REFERENCES

1. Nakahara, Y., et al. 1992. Allergic bronchopulmonary aspergillosis caused by *Aspergillus terreus* presenting lobar collapse. Intern. Med. 31: 140-142.
2. Zeltser, L., et al. 1996. HoxB13: a new Hox gene in a distant region of the HOXB cluster maintains colinearity. Development 122: 2475-2484.
3. Stelnicki, E.J., et al. 1998. Modulation of the human homeobox genes PRX2 and HoxB13 in scarless fetal wounds. J. Invest. Dermatol. 111: 57-63.
4. Economides, K.D., et al. 2003. HoxB13 is required for normal differentiation and secretory function of the ventral prostate. Development 130: 2061-2069.
5. Komuves, L.G., et al. 2003. HoxB13 homeodomain protein is cytoplasmic throughout fetal skin development. Dev. Dyn. 227: 192-202.
6. Jung, C., et al. 2004. HoxB13 homeodomain protein suppresses the growth of prostate cancer cells by the negative regulation of T cell factor 4. Cancer Res. 64: 3046-3051.

## CHROMOSOMAL LOCATION

Genetic locus: HOXB13 (human) mapping to 17q21.32.

## PRODUCT

HoxB13 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HoxB13 shRNA Plasmid (h): sc-43851-SH and HoxB13 shRNA (h) Lentiviral Particles: sc-43851-V as alternate gene silencing products.

For independent verification of HoxB13 (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-43851A, sc-43851B and sc-43851C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

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

## APPLICATIONS

HoxB13 siRNA (h) is recommended for the inhibition of HoxB13 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

HoxB13 (F-9): sc-28333 is recommended as a control antibody for monitoring of HoxB13 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxB13 gene expression knockdown using RT-PCR Primer: HoxB13 (h)-PR: sc-43851-PR (20  $\mu$ l, 422 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## SELECT PRODUCT CITATIONS

1. Begum, A., et al. 2009. Identification of PAK4 as a putative target gene for amplification within 19q13.12-q13.2 in oral squamous-cell carcinoma. Cancer Sci. 100: 1908-1916.
2. Hamid, S.M., et al. 2014. HoxB13 contributes to G<sub>1</sub>/S and G<sub>2</sub>/M checkpoint controls in prostate. Mol. Cell. Endocrinol. 383: 38-47.
3. Zhang, E., et al. 2017. H3K27 acetylation activated-long non-coding RNA CCAT1 affects cell proliferation and migration by regulating SPRY4 and HoxB13 expression in esophageal squamous cell carcinoma. Nucleic Acids Res. 45: 3086-3101.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.