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# HoxB7 shRNA (h) Lentiviral Particles: sc-45835-V

## 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. The mammalian HOX gene complex consists of 39 genes that are located on four linkage groups, which are dispersed over four chromosomes. A segment of the HoxB7 proximal promoter drives renal expression of reporter genes specifically in the ureteric bud and collecting ducts. Expression levels of HoxB7 are lower in lymph node metastasis-positive cancer tissues than negative cancer tissues. These results suggest that aberrant expression of HOX genes is related to the development of breast cancer and malignant behavior of cancer cells.

## REFERENCES

1. Felicetti, F., et al. 2004. Role of PLZF in melanoma progression. *Oncogene* 23: 4567-4576.
2. Oxburgh, L., et al. 2004. TGF $\beta$  superfamily signals are required for morphogenesis of the kidney mesenchyme progenitor population. *Development* 131: 4593-4605.
3. Watanabe, T. and Costantini, F. 2004. Real-time analysis of ureteric bud branching morphogenesis *in vitro*. *Dev. Biol.* 271: 98-108.
4. Yu, O.H., et al. 2004. Over-expression of Ret leads to vesicoureteric reflux in mice. *Am. J. Physiol. Renal Physiol.* 287: F1123-F1130.
5. Makiyama, K., et al. 2005. Aberrant expression of HOX genes in human invasive breast carcinoma. *Oncol. Rep.* 13: 673-679.
6. SWISS-PROT/TrEMBL (P09629). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: HOXB7 (human) mapping to 17q21.32.

## PRODUCT

HoxB7 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see HoxB7 siRNA (h): sc-45835 and HoxB7 shRNA Plasmid (h): sc-45835-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ$  C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

HoxB7 shRNA (h) Lentiviral Particles is recommended for the inhibition of HoxB7 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  lentiviral transducing particles per milliliter; contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

HoxB7 (C-17): sc-46361 is recommended as a control antibody for monitoring of HoxB7 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HoxB7 gene expression knockdown using RT-PCR Primer: HoxB7 (h)-PR: sc-45835-PR (20  $\mu$ l, 547 bp). Annealing temperature for the primers should be  $55-60^\circ$  C and the extension temperature should be  $68-72^\circ$  C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.