SANTA CRUZ BIOTECHNOLOGY, INC.

# HoxC12 siRNA (m): sc-146071

## BACKGROUND

The Homeobox (Hox) proteins are a family of transcription factors that 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. Hox proteins are involved in controlling axial patterning, leukemias and hereditary malformations. In mammals, there are four gene clusters encoding Hox proteins, namely HoxA, HoxB, HoxC and HoxD, that are located on different chromosomes, each consisting of 9-11 tandemly arranged genes. HoxC12 (Homeobox C12), also known as Hox3, Hox3F or HOC3F, is a member of the Abd-B homeobox (Hox) family and is encoded by a gene from the HoxC cluster. HoxC12 is a 282 amino acid long nuclear protein that contains one homeobox DNA-binding domain.

## REFERENCES


1. Acampora, D., et al. 1989. The human HOX gene family. Nucleic Acids Res. 17: 10385-10402.
2. McAlpine, P.J. and Shows, T.B. 1990. Nomenclature for human homeobox genes. Genomics 7: 460.
3. Scott, M.P. 1992. Vertebrate homeobox gene nomenclature. Cell 71: 551-553.
4. Flagiello, D., et al. 1997. Distinct patterns of all-*trans* retinoic acid dependent expression of HOXB and HOXC homeogenes in human embryonal and small-cell lung carcinoma cell lines. FEBS Lett. 415: 263-267.
5. Shang, L., et al. 2002. Hoxc12 expression pattern in developing and cycling murine hair follicles. Mech. Dev. 113: 207-210.
6. Kosaki, K., et al. 2002. Complete mutation analysis panel of the 39 human HOX genes. Teratology 65: 50-62.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 142975. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Nicolas, S., et al. 2003. The spatial restrictions of 5'HoxC genes expression are maintained in adult newt spinal cord. Biol. Cell 95: 589-594.


## CHROMOSOMAL LOCATION

Genetic locus: Hoxc12 (mouse) mapping to 15 F3.

## PRODUCT

HoxC12 siRNA (m) is a pool of 2 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 HoxC12 shRNA Plasmid (m): sc-146071-SH and HoxC12 shRNA (m) Lentiviral Particles: sc-146071-V as alternate gene silencing products.

For independent verification of HoxC12 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146071A and sc-146071B.

## 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

HoxC12 siRNA (m) is recommended for the inhibition of HoxC12 expression in mouse 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

HoxC12 (LX-0): sc-81966 is recommended as a control antibody for monitoring of HoxC12 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 HoxC12 gene expression knockdown using RT-PCR Primer: HoxC12 (m)-PR: sc-146071-PR (20 µl). 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.