SANTA CRUZ BIOTECHNOLOGY, INC.

SHOX siRNA (h): sc-91583

BACKGROUND

Homeodomain proteins (HP) are transcriptional regulators that coordinate the expression of genes involved in development, differentiation and cellular transformation. HPs are characterized by a conserved domain of 60 amino acid residues that recognize and bind a site in the regulatory region of the target gene. SHOX, a member of the bicoid subfamily of the paired homeobox family, controls fundamental aspects of growth and development and undergoes splicing resulting in two isoforms, SHOXA and SHOXB. SHOXA is expressed in skeletal muscle, placental, pancreas, heart and bone marrow fibroblast and, to a lesser extent, in kidney and lung. SHOXB is highly expressed in osteogenic cells, but not expressed in brain, kidney, liver or lung. Defects in the gene SHOXX cause Leri-Weill dyschondrosteosis (LWD) and Langer mesomelic dysplasia (LMD).

REFERENCES

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2. Semina, E.V., Reiter, R.S., Murray, J.C. 1998. A new human homeobox gene Ogl2x is a member of the most conserved homeobox gene family and is expressed during heart development in mouse. Hum. Mol. Genet. 7: 415-422.
3. Blaschke, R.J., et al. 2003. Transcriptional and translational regulation of the Leri-Weill and Turner syndrome homeobox gene SHOX. J. Biol. Chem. 278: 47820-47826.
4. Marchini, A., et al. 2004. The short stature homeodomain protein SHOX induces cellular growth arrest and apoptosis and is expressed in human growth plate chondrocytes. J. Biol. Chem. 279: 37103-37114.
5. Blaschke, R.J., et al. 2001. SHOX in short stature syndromes. Horm. Res. 55: 21-23.
6. Blaschke, R.J., et al. 1998. SHOT, a SHOX-related homeobox gene, is implicated in craniofacial, brain, heart, and limb development. Proc. Natl. Acad. Sci. USA 95: 2406-2411.

CHROMOSOMAL LOCATION

Genetic locus: SHOX (human) mapping to Xp22.33/Yp11.32.

PRODUCT

SHOX 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 SHOX shRNA Plasmid (h): sc-91583-SH and SHOX shRNA (h) Lentiviral Particles: sc-91583-V as alternate gene silencing products.

For independent verification of SHOX (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-91583A, sc-91583B and sc-91583C.

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

SHOX siRNA (h) is recommended for the inhibition of SHOX 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SHOX gene expression knockdown using RT-PCR Primer: SHOX (h)-PR: sc-91583-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.