SANTA CRUZ BIOTECHNOLOGY, INC.

Pitx3 siRNA (h): sc-44017

BACKGROUND

Pitx1 and Pitx2 are highly homologous, bicoid-related transcription factors. Pitx1 is a bicoid-related homeodomain factor that exhibits preferential expression in the hindlimb, as well as expression in the developing anterior pituitary gland and first branchial arch. Deletion of the Pitx1 locus results in decreased distal expression of the hindlimb-specific marker, the T box factor (Tbx4). Pitx1 may modulate morphogenesis, growth and patterning of a specific hindlimb region and serves as a component of the variables that influence morphological and growth distinctions in forelimb and hindlimb identity. Pitx2 was initially identified as the gene responsible for human Rieger syndrome, an autosomal dominant condition that causes developmental abnormalities. Pitx2 is a transcription factor that regulates cardiac positioning and pituitary and tooth morphogenesis. Pitx2 also regulates lung symmetry by encoding "leftness" of the lung. Pitx2 is asymmetrically expressed in the left lateral-plate mesoderm, and mutant mice with laterality defects show altered patterns of Pitx2 expression that correlate with changes in the visceral symmetry. The genes which encode Pitx1 and Pitx2 map to human chromosomes 5q31 and 4q25, respectively.

REFERENCES

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2. Semina, E., Ferrell, R., Mintz-Hittner, H., Bitoun, P., Alward, W., Reiter, R., Funkhauser,C., Daack-Hirsch, S. and Murray, J. 1998. A novel homeobox gene PITX3 in mutated in families with autosomal-dominant cataracts and ASMD. Nat. Genet. 19: 167-170.
3. Semina, E., Murray, J., Reiter, R., Hrstka, R. and Graw, J. 2000. Deletion in the promoter region and altered expression of Pitx3 homoebox gene in aphakia. Hum. Mol. Genet. 9: 1575-1585.
4. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 602669. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Lebel, M., Gauthier, Y., Moreau, A. and Drouin, J. 2001. Pitx3 activates mouse tyrosine hydroxylase promoter via a high-affinity binding site. J. Neurochem. 77: 558-567.
6. Rieger, D., Reichenberger, E., McLean, W., Sidow, A. and Olsen, B. 2001. A double-deletion mutation in the Pitx3 gene caused arrested lenz development in aphakia mice. Genomics 72: 61-72.
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CHROMOSOMAL LOCATION

Genetic locus: PITX3 (human) mapping to 10q24.32.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

Pitx3 siRNA (h) is a target-specific 19-25 nt siRNA 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 Pitx3 shRNA Plasmid (h): sc-44017-SH and Pitx3 shRNA (h) Lentiviral Particles: sc-44017-V as alternate gene silencing products.

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

Pitx3 siRNA (h) is recommended for the inhibition of Pitx3 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 Pitx3 gene expression knockdown using RT-PCR Primer: Pitx3 (h)-PR: sc-44017-PR (20 µl, 582 bp). 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.