



Pitx3 siRNA (m): sc-152282

BACKGROUND

Pitx genes play an important role in eye, tooth, pituitary and umbilical region development. Pitx3, for paired-like homeodomain transcription factor 3, is a member of the homeodomain family of DNA binding proteins referred to as the RIEG/PITX homeobox gene family. Pitx3 is associated with anterior segment dysgenesis and congenital cataracts. Mouse Pitx3 is associated with early ocular development and is later expressed in other organs and limbs. Pitx3 is expressed in the developing lens, neuronal tissue and in the central nervous system. Mouse Pitx3 is expressed in the midbrain dopaminergic (MesDA) neurons. A double deletion of the mouse Pitx3 gene causes arrested lens development in the recessive aphakia (ak) mouse mutant, characterized by small eyes which lack lenses. The human Pitx3 gene maps to chromosome 10q25 and encodes a 302 amino acid protein.

REFERENCES

1. Semina, E., Reiter, R. and Murray, J. 1997. Isolation of a new homeobox gene belonging to the Pitx/Rieg family: expression during lens development and mapping to the aphakia region of mouse chromosome 19. *Hum. Mol. Genet.* 6: 2109-2116.
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., Hrsk, R. and Graw, J. 2000. Deletion in the promoter region and altered expression of Pitx3 homeobox 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. LocusLink Report (LocusID: 5309). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Pitx3 (mouse) mapping to 19 C3.

PRODUCT

Pitx3 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pitx3 shRNA Plasmid (m): sc-152282-SH and Pitx3 shRNA (m) Lentiviral Particles: sc-152282-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Pitx3 siRNA (m) is recommended for the inhibition of Pitx3 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Pitx3 gene expression knockdown using RT-PCR Primer: Pitx3 (m)-PR: sc-152282-PR (20 μ l). 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.