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SANTA CRUZ BIOTECHNOLOGY, INC.

PRX2 siRNA (m): sc-152532

BACKGROUND

The paired-class homeobox genes PRX1 and PRX2 are necessary for craniofacial and limb development and are expressed in similar patterns in the cranial mesenchyme, limb buds, axial mesoderm and branchial arches. These proteins exhibit different patterns of expression, however, in heart and brain tissue. Specifically, PRX1 is expressed in the endocardial cusions, semilunar and atrioventricular valves, whereas PRX2 is initially expressed in a diffuse myocardial pattern and is later expressed in the ventricular septum. Furthermore, PRX2 is never expressed in the brain, whereas PRX1 is expressed in the ventral hypothalamus and in the telencephalon. Murine mutants lacking PRX1 function demonstrate skeletal defects in the skull, limbs, and vertebral column. Mice lacking functional PRX2 alone do not demonstrate skeletal abnormalities, however, PRX1/PRX2 double mutants demonstrate novel abnormalities that are not visualized with the PRX1-deficient mice. Transcripts of neither PRX1 nor PRX2 are detected in normal adult rat pulmonary arteries, however vasular disease induces PRX gene expression wherein they co-localize to sites of Tenascin-C expression. The human PRX1 gene maps to chromosome 1q23 and the human PRX2 gene maps to chromosome 9q34.

REFERENCES

1. Leussink, B., et al. 1995. Expression patterns of the paired-related homeobox genes MHox/Prx1 and S8/Prx2 suggest roles in development of the heart and the forebrain. Mech. Dev. 52: 51-64.
2. Ten Berge, D., 1998. Prx1 and Prx2 in skeletogenesis: roles in the craniofacial region, inner ear and limbs. Development 125: 3831-3842.
3. Bergwerff, M., et al. 2000. Loss of function of the Prx1 and Prx2 homeobox genes alters architecture of the great elastic arteries and ductus arteriosus. Virchows Arch. 436: 12-19.
4. Norris, R.A., et al. 2000. Human PRRX1 and PRRX2 genes: cloning, expression, genomic localization, and exclusion as disease genes for Nager syndrome. Mamm. Genome 11: 1000-1005.
5. Jones, F.S., et al. 2001. Prx1 controls vascular smooth muscle cell proliferation and tenascin-C expression and is upregulated with Prx2 in pulmonary vascular disease. Circ. Res. 89: 131-138.
6. Ten Berge, D., et al. 2001. Prx1 and Prx2 are upstream regulators of sonic hedgehog and control cell proliferation during mandibular arch morphogenesis. Development 128: 2929-2938.

CHROMOSOMAL LOCATION

Genetic locus: Prrx2 (mouse) mapping to 2 B.

PRODUCT

PRX2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PRX2 shRNA Plasmid (m): sc-152532-SH and PRX2 shRNA (m) Lentiviral Particles: sc-152532-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

PRX2 siRNA (m) is recommended for the inhibition of PRX2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PRX2 gene expression knockdown using RT-PCR Primer: PRX2 (m)-PR: sc-152532-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.