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# PRX1 siRNA (m): sc-152531

## BACKGROUND

The homeobox DNA-binding domain is a 60 amino acid motif that is conserved among many species and functions to bind DNA via a helix-turn-helix structure, thereby playing a role in transcriptional regulation and the control of gene expression. PRX1 (paired related homeobox 1), also known as PRRX1, PMX1 or PHOX1, is a 245 amino acid protein that contains one OAR domain and one homeobox DNA-binding domain and belongs to the paired homeobox family. Localized to the nucleus, PRX1 functions as a transcriptional co-activator that enhances the DNA-binding activity of serum response factor (SRF), thereby mediating the induction of SRF-dependent gene expression by growth and differentiation factors. Additionally, PRX1 regulates the transcriptional activities of creatine kinase-M (muscle), thereby playing a role in the establishment of mesodermal muscle types. PRX1 exists as two alternatively spliced isoforms, designated PMX1-A and PMX1-B.

## REFERENCES

1. Grueneberg, D.A., et al. 1992. Human and *Drosophila* homeodomain proteins that enhance the DNA-binding activity of serum response factor. *Science* 257: 1089-1095.
2. Nakamura, T., et al. 1999. Nup98 is fused to PMX1 homeobox gene in human acute myelogenous leukemia with chromosome translocation t(1;11)(q23;p15). *Blood* 94: 741-747.
3. 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.
4. 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.

## CHROMOSOMAL LOCATION

Genetic locus: Prx1 (mouse) mapping to 1 H2.1.

## PRODUCT

PRX1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PRX1 shRNA Plasmid (m): sc-152531-SH and PRX1 shRNA (m) Lentiviral Particles: sc-152531-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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PRX1 siRNA (m) is recommended for the inhibition of PRX1 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

PRX1 (1E2): sc-293386 is recommended as a control antibody for monitoring of PRX1 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 PRX1 gene expression knockdown using RT-PCR Primer: PRX1 (m)-PR: sc-152531-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Kim, J.H., et al. 2012. Functional dissection of Nrf2-dependent phase II genes in vascular inflammation and endotoxic injury using Keap1 siRNA. *Free Radic. Biol. Med.* 53: 629-640.
2. Phan, T.V., et al. 2014. Protection against ovariectomy-induced bone loss by tranilast. *PLoS ONE* 9: e95585.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.