

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 μ 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 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

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 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.

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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 μ 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. Kim, S., et al. 2013. Aqueous extract of unripe *Rubus coreanus* fruit attenuates atherosclerosis by improving blood lipid profile and inhibiting NF κ B activation via phase II gene expression. *J. Ethnopharmacol.* 146: 515-524.
3. Phan, T.V., et al. 2014. Protection against ovariectomy-induced bone loss by tranilast. *PLoS ONE* 9: e95585.
4. Kasashima, H., et al. 2020. Stromal SOX2 upregulation promotes tumorigenesis through the generation of a SFRP1/2-expressing cancer-associated fibroblast population. *Dev. Cell.* E-published.

RESEARCH USE

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