

# PRX1 (1E2): sc-293386

## 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.
5. Kim, Y.J., et al. 2007. Human PRX1 gene is a target of Nrf2 and is up-regulated by hypoxia/reoxygenation: implication to tumor biology. *Cancer Res.* 67: 546-554.
6. Jiang, F. and Stefanovic, B. 2008. Homeobox gene PRX1 is expressed in activated hepatic stellate cells and transactivates collagen  $\alpha 1(I)$  promoter. *Exp. Biol. Med.* 233: 286-296.
7. Hirose, K., et al. 2008. Leukemogenic properties of NUP98-PMX1 are linked to NUP98 and homeodomain sequence functions but not to binding properties of PMX1 to serum response factor. *Oncogene* 27: 6056-6067.

## CHROMOSOMAL LOCATION

Genetic locus: PRRX1 (human) mapping to 1q24.2; Prrx1 (mouse) mapping to 1 H2.1.

## SOURCE

PRX1 (1E2) is a mouse monoclonal antibody raised against amino acids 1-90 of PRX1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PRX1 (1E2) is recommended for detection of PRX1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PRX1 siRNA (h): sc-106455, PRX1 siRNA (m): sc-152531, PRX1 shRNA Plasmid (h): sc-106455-SH, PRX1 shRNA Plasmid (m): sc-152531-SH, PRX1 shRNA (h) Lentiviral Particles: sc-106455-V and PRX1 shRNA (m) Lentiviral Particles: sc-152531-V.

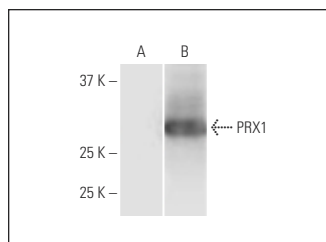
Molecular Weight of PRX1: 26 kDa.

Positive Control: PRX1 transfected 293T whole cell lysate or NIH/3T3 nuclear extract: sc-2138.

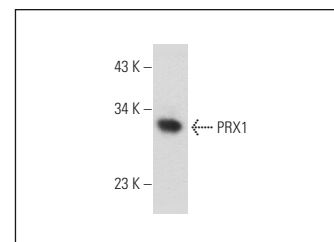
## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



PRX1 (1E2): sc-293386. Western blot analysis of PRX1 expression in non-transfected (A) and PRX1 transfected (B) 293T whole cell lysates.



PRX1 (1E2): sc-293386. Western blot analysis of PRX1 expression in NIH/3T3 nuclear extract.

## SELECT PRODUCT CITATIONS

1. Wei, W., et al. 2016. Targeting peroxiredoxin I potentiates 1,25-dihydroxyvitamin D<sub>3</sub>-induced cell differentiation in leukemia cells. *Mol. Med. Rep.* 13: 2201-2207.
2. Lan, K.C., et al. 2022. Targeted activation of androgen receptor signaling in the periosteum improves bone fracture repair. *Cell Death Dis.* 13: 123.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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