

PRX II (N-13): sc-23967

BACKGROUND

The peroxiredoxin (PRX) family comprises six antioxidant proteins, PRX I, II, III, IV, V and VI, which protect cells from reactive oxygen species (ROS) by preventing the metal-catalyzed oxidation of enzymes. The PRX proteins primarily utilize thioredoxin as the electron donor for antioxidantation, although they are fairly promiscuous with regard to the hydroperoxide substrate. In addition to protection from ROS, peroxiredoxins are also involved in cell proliferation, differentiation and gene expression. PRX I, II, IV and VI show diffuse cytoplasmic localization, while PRX III and V exhibit distinct mitochondrial localization. The human PRX I gene encodes a protein that is expressed in several tissues, including liver, kidney, testis, lung and nervous system. PRX II is expressed in testis, while PRX III shows expression in lung. PRX I, II and III are over-expressed in breast cancer and may be involved in its development or progression. Upregulated protein levels of PRX I and II in Alzheimer's disease and down syndrome indicate the involvement of PRX I and II in their pathogenesis. The human PRX IV gene is abundantly expressed in many tissues. PRX IV exists as a precursor protein, which is only detected in testis, and a processed secreted form. PRX V also exists as two forms, designated long and short. Like PRX IV, the long form of PRX V is highly expressed in testis. The short form of PRX V is more widely expressed, with high expression in liver, kidney, heart and lung. PRX VI, a 1-Cys peroxiredoxin (also known as antioxidant protein 2 or AOP2), is highly expressed in most tissues, particularly in epithelial cells. Localized to the cell cytosol, PRX VI functions independently of other peroxiredoxins and antioxidant proteins, specializing in antioxidant defense, lung phospholipid metabolism and protection of keratinocytes from cell death induced by reactive oxygen species.

CHROMOSOMAL LOCATION

Genetic locus: PRDX2 (human) mapping to 19p13.2; Prdx2 (mouse) mapping to 8 C3.

SOURCE

PRX II (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PRX II of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23967 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

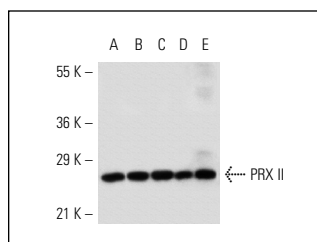
PRX II (N-13) is recommended for detection of PRX II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). PRX II (N-13) is also recommended for detection of PRX II in additional species, including porcine.

Suitable for use as control antibody for PRX II siRNA (h): sc-40831, PRX II siRNA (m): sc-40832, PRX II shRNA Plasmid (h): sc-40831-SH, PRX II shRNA Plasmid (m): sc-40832-SH, PRX II shRNA (h) Lentiviral Particles: sc-40831-V and PRX II shRNA (m) Lentiviral Particles: sc-40832-V.

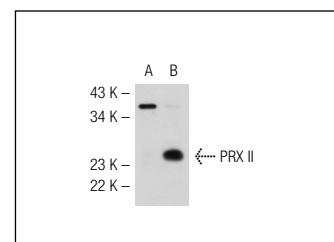
Molecular Weight of PRX II: 24 kDa.

Positive Controls: mouse brain extract: sc-2253, MCF7 whole cell lysate: sc-2206 or PRX II (m): 293T lysate: sc-122808.

DATA



PRX II (N-13): sc-23967. Western blot analysis of PRX II expression in MCF7 (A), SK-N-SH (B) and K-562 (C) whole cell lysates and rat heart (D) and mouse brain (E) tissue extracts.



PRX II (N-13): sc-23967. Western blot analysis of PRX II expression in non-transfected: sc-117752 (A) and mouse PRX II transfected: sc-122808 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Furuta, J. et al. 2003. Silencing of Peroxiredoxin 2 and aberrant methylation of 33 CpG islands in putative promoter regions in human malignant melanomas. *Cancer Res.* 66: 6080-6086.
2. Miyamoto, N., et al. 2009. Nipradilol and timolol induce Foxo3a and peroxiredoxin 2 expression and protect trabecular meshwork cells from oxidative stress. *Invest. Ophthalmol. Vis. Sci.* 50: 2777-2784.
3. Shiota, M., et al. 2011. Peroxiredoxin 2 in the nucleus and cytoplasm distinctly regulates androgen receptor activity in prostate cancer cells. *Free Radic. Biol. Med.* 51: 78-87.
4. Miyamoto, N., et al. 2011. Quercetin induces the expression of peroxiredoxins 3 and 5 via the Nrf2/NRF1 transcription pathway. *Invest. Ophthalmol. Vis. Sci.* 52: 1055-1063.

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Try **PRX II (A-2): sc-515428** or **PRX II (H-4): sc-515429**, our highly recommended monoclonal alternatives to PRX II (N-13).