

# PRX IV (F-2): sc-376668

## 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 overexpressed in breast cancer and may be involved in its development or progression. Upregulated protein levels of PRX I and II in Alzheimer's disease (AD) and Down syndrome (DS) 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: PRDX4 (human) mapping to Xp22.11; Prdx4 (mouse) mapping to X F3.

## SOURCE

PRX IV (F-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 121-155 within an internal region of PRX IV of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRX IV (F-2) is available conjugated to agarose (sc-376668 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376668 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376668 PE), fluorescein (sc-376668 FITC), Alexa Fluor® 488 (sc-376668 AF488), Alexa Fluor® 546 (sc-376668 AF546), Alexa Fluor® 594 (sc-376668 AF594) or Alexa Fluor® 647 (sc-376668 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376668 AF680) or Alexa Fluor® 790 (sc-376668 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376668 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

PRX IV (F-2) is recommended for detection of PRX IV of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

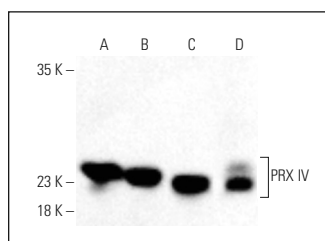
Suitable for use as control antibody for PRX IV siRNA (h): sc-40835, PRX IV siRNA (m): sc-40836, PRX IV shRNA Plasmid (h): sc-40835-SH, PRX IV shRNA Plasmid (m): sc-40836-SH, PRX IV shRNA (h) Lentiviral Particles: sc-40835-V and PRX IV shRNA (m) Lentiviral Particles: sc-40836-V.

Molecular Weight of membrane-bound PRX IV: 31 kDa.

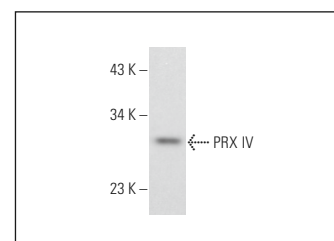
Molecular Weight of PRX IV processed secreted form: 27 kDa.

Positive Controls: U266 whole cell lysate: sc-364800, human testis extract: sc-363781 or K-562 whole cell lysate: sc-2203.

## DATA



PRX IV (F-2): sc-376668. Western blot analysis of PRX IV expression in K-562 (A), U266 (B) and RPMI-8226 (C) whole cell lysates and human testis tissue extract (D). Detection reagent used: m-IgGκc BP-HRP: sc-516102.



PRX IV (F-2): sc-376668. Western blot analysis of PRX IV expression in U266 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Schumacher, M.M., et al. 2015. The prenyltransferase UBIAD1 is the target of geranylgeraniol in degradation of HMG CoA reductase. *Elife* 4: e05560.
- Unuma, K., et al. 2019. Increased circulating peroxiredoxin-4 in sepsis model rats involves secretion from hepatocytes and is mitigated by GYY4137. *J. Toxicol. Pathol.* 32: 305-310.
- Xie, D.P., et al. 2020. Anti-tumor properties of *Picrasma quassioides* extracts in H-Ras<sup>G12V</sup> liver cancer are mediated through ROS-dependent mitochondrial dysfunction. *Anticancer Res.* 40: 3819-3830.
- Jin, Y.Z., et al. 2021. Peroxiredoxin V silencing elevates susceptibility to doxorubicin-induced cell apoptosis via ROS-dependent mitochondrial dysfunction in AGS gastric cancer cells. *Anticancer Res.* 41: 1831-1840.

## 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.