

# PRX V (H-5): sc-133072

## 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 antioxidation, 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,  $\alpha$ -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: PRDX5 (human) mapping to 11q13.1; Prdx5 (mouse) mapping to 19 A.

## SOURCE

PRX V (H-5) is a mouse monoclonal antibody raised against amino acids 1-214 representing full length PRX V of human origin.

## PRODUCT

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

PRX V (H-5) is available conjugated to agarose (sc-133072 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133072 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133072 PE), fluorescein (sc-133072 FITC), Alexa Fluor® 488 (sc-133072 AF488), Alexa Fluor® 546 (sc-133072 AF546), Alexa Fluor® 594 (sc-133072 AF594) or Alexa Fluor® 647 (sc-133072 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133072 AF680) or Alexa Fluor® 790 (sc-133072 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

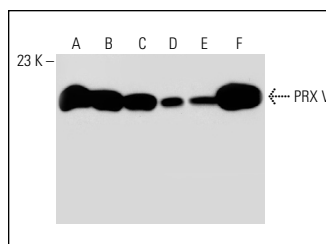
PRX V (H-5) is recommended for detection of PRX V of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 V siRNA (h): sc-40837, PRX V siRNA (m): sc-40838, PRX V shRNA Plasmid (h): sc-40837-SH, PRX V shRNA Plasmid (m): sc-40838-SH, PRX V shRNA (h) Lentiviral Particles: sc-40837-V and PRX V shRNA (m) Lentiviral Particles: sc-40838-V.

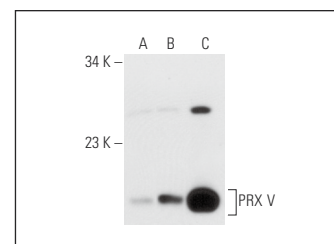
Molecular Weight of PRX V: 17 kDa.

Positive Controls: PRX V (h): 293T Lysate: sc-111816, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

## DATA



PRX V (H-5): sc-133072. Western blot analysis of PRX V expression in HeLa (A), SHP-77 (B), Hep G2 (C), EOC 20 (D), c4 (E) and KNRK (F) whole cell lysates.



PRX V (H-5): sc-133072. Western blot analysis of PRX V expression in non-transfected 293T: sc-117752 (A), human PRX V transfected 293T: sc-111816 (B) and Hep G2 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Yu, J., et al. 2011. Vitamin E ameliorates iodine-induced cytotoxicity in thyroid. *J. Endocrinol.* 209: 299-306.
- Yang, L., et al. 2020. Small GTPase RAB6 deficiency promotes alveolar progenitor cell renewal and attenuates PM2.5-induced lung injury and fibrosis. *Cell Death Dis.* 11: 827.
- Sim, H., et al. 2020. Quantitative proteomic analysis of primitive neural stem cells from LRRK2 G2019S-associated Parkinson's disease patient-derived iPSCs. *Life* 10: 331.
- Park, M., et al. 2022. The role of extracellular vesicles in optic nerve injury: neuroprotection and mitochondrial homeostasis. *Cells* 11: 3720.

## 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.