

PRX VI (1A11): sc-59671

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: PRDX6 (human) mapping to 1q25.1.

SOURCE

PRX VI (1A11) is a mouse monoclonal antibody raised against recombinant full length PRX VI of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of HEPES with 0.15M NaCl, 50% glycerol, < 0.1% sodium azide, and 0.01% stabilizer protein.

APPLICATIONS

PRX VI (1A11) is recommended for detection of PRX VI of 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).

Suitable for use as control antibody for PRX VI siRNA (h): sc-62896, PRX VI shRNA Plasmid (h): sc-62896-SH and PRX VI shRNA (h) Lentiviral Particles: sc-62896-V.

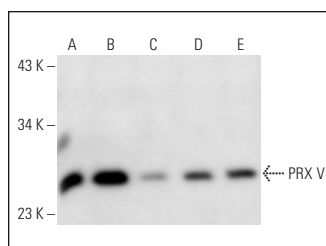
Molecular Weight of PRX VI: 25 kDa.

Positive Controls: PRX VI (h2): 293T Lysate: sc-116442, Caki-1 cell lysate: sc-2224 or A549 cell lysate: sc-2413.

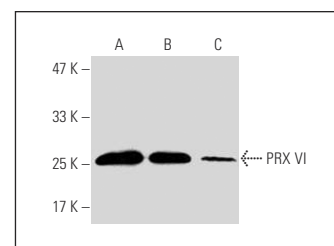
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

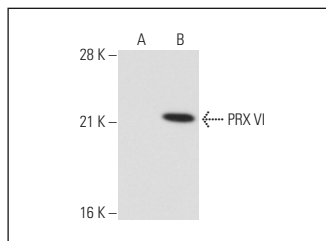
DATA



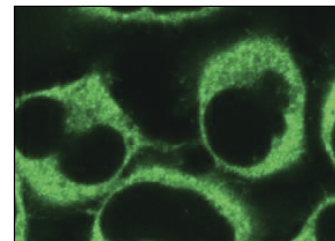
PRX VI (1A11): sc-59671. Western blot analysis of PRX VI expression in HeLa (A), Caki-1 (B), SHP-77 (C), A549 (D) and H69AR (E) whole cell lysates.



PRX VI (1A11): sc-59671. Western blot analysis of PRX VI expression in HeLa (A), 293T (B) and Jurkat (C) whole cell lysates.



PRX VI (1A11): sc-59671. Western blot analysis of PRX VI expression in non-transfected: sc-117752 (A) and human PRX VI transfected: sc-116442 (B) 293T whole cell lysates.



PRX VI (1A11): sc-59671. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Sofiadis, A., et al. 2012. Proteomic profiling of follicular and papillary thyroid tumors. *Eur. J. Endocrinol.* 166: 657-667.
- Wong, C.M., et al. 2013. Mechanism of protein decarboxylation. *Free Radic. Biol. Med.* 65: 1126-1133.
- Hughes, N.P., et al. 2018. A blood biomarker for monitoring response to anti-EGFR therapy. *Cancer Biomark.* 22: 333-344.
- Wagner, M.P., et al. 2022. Human peroxiredoxin 6 is essential for malaria parasites and provides a host-based drug target. *Cell Rep.* 39: 110923.

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.