

PRX VI (D-9): sc-166454

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 antioxidant, 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 (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 80-110 within an internal region of PRX VI of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRX VI (D-9) is available conjugated to agarose (sc-166454 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166454 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166454 PE), fluorescein (sc-166454 FITC), Alexa Fluor® 488 (sc-166454 AF488), Alexa Fluor® 546 (sc-166454 AF546), Alexa Fluor® 594 (sc-166454 AF594) or Alexa Fluor® 647 (sc-166454 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166454 AF680) or Alexa Fluor® 790 (sc-166454 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166454 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

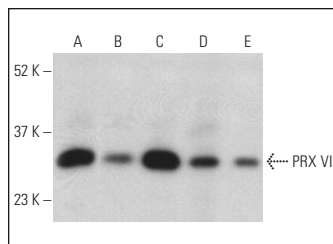
PRX VI (D-9) is recommended for detection of PRX VI of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

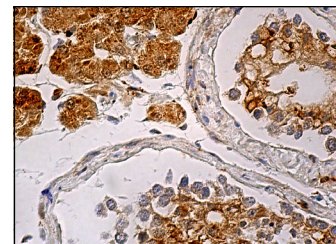
Molecular Weight of PRX VI: 25 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PC-3 cell lysate: sc-2220 or BJ whole cell lysate: sc-364359.

DATA



PRX VI (D-9): sc-166454. Western blot analysis of PRX VI expression in K-562 (A), HeLa (B), PC-3 (C), HEL 92.1.7 (D) and BJ (E) whole cell lysates. Detection reagent used: m-IgG₃ BP-HRP: sc-533670.



PRX VI (D-9): sc-166454. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and nuclear staining of cells in seminiferous ducts and Leydig cells.

SELECT PRODUCT CITATIONS

- Jung, E.J., et al. 2014. Proteomic analysis of SP600125-controlled TrkA-dependent targets in SK-N-MC neuroblastoma cells: inhibition of TrkA activity by SP600125. *Proteomics* 14: 202-215.
- Pereira, C.D., et al. 2024. Quantitative proteome analysis of LAP1-deficient human fibroblasts: a pilot approach for predicting the signaling pathways deregulated in LAP1-associated diseases. *Biochem. Biophys. Rep.* 39: 101757.

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 for detailed protocols and support products.