SANTA CRUZ BIOTECHNOLOGY, INC.

PRX II (A-2): sc-515428

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, α1-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 (A-2) is a mouse monoclonal antibody raised against amino acids 1-40 mapping at the N-terminus of PRX II of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRX II (A-2) is available conjugated to agarose (sc-515428 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515428 PE), fluorescein (sc-515428 FITC), Alexa Fluor® 488 (sc-515428 AF488), Alexa Fluor® 546 (sc-515428 AF546), Alexa Fluor® 594 (sc-515428 AF594) or Alexa Fluor® 647 (sc-515428 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515428 AF680) or Alexa Fluor® 790 (sc-515428 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

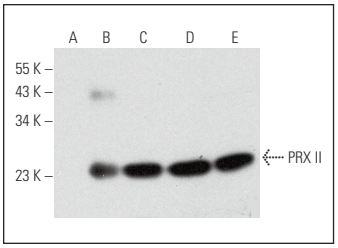
PRX II (A-2) is recommended for detection of PRX II of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 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.

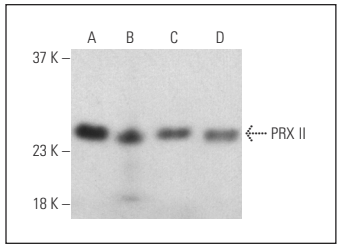
Molecular Weight of PRX II: 24 kDa.

Positive Controls: PRX II (m): 293T Lysate: sc-122808, K-562 whole cell lysate: sc-2203 or MCF7 whole cell lysate: sc-2206.

DATA



PRX II (A-2): sc-515428. Western blot analysis of PRX II expression in non-transfected 293T: sc-117752 (**A**), mouse PRX II transfected 293T: sc-122808 (**B**), K-562 (**C**), MCF7 (**D**) and Hep G2 (**E**) whole cell lysates.



PRX II (A-2) HRP: sc-515428 HRP. Direct western blot analysis of PRX II expression in SK-N-SH (**A**), SP2/0 (**B**), MCF7 (**C**) and Hep G2 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nagakannan, P. and Eftekharpour, E. 2017. Differential redox sensitivity of cathepsin B and L holds the key to autophagy-apoptosis interplay after thioredoxin reductase inhibition in nutritionally stressed SH-SY5Y cells. Free Radic. Biol. Med. 108: 819-831.
2. 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.
3. Dahou, H., et al. 2021. Genetic inactivation of peroxiredoxin-I impairs the growth of human pancreatic cancer cells. Antioxidants 10: 570.
4. Ujcikova, H., et al. 2023. Protracted morphine withdrawal induces up-regulation of peroxiredoxin II and reduces 14-3-3 protein levels in the rat brain cortex and hippocampus. Brain Res. 1813: 148428.
5. Martínez-Vieyra, I., et al. 2024. Oxidative stress and cytoskeletal reorganization in hypertensive erythrocytes. Antioxidants 14: 5.

RESEARCH USE

For research use only, not for use in diagnostic procedures.