

PRX VI (h): 293T Lysate: sc-115407

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.

REFERENCES

1. Iwahara, S., et al. 1995. Purification, characterization, and cloning of a heme-binding protein (23 kDa) in rat liver cytosol. *Biochemistry* 34: 13398-13406.
2. Butterfield, L.H., et al. 1999. From cytoprotection to tumor suppression: the multifactorial role of peroxiredoxins. *Antioxid. Redox Signal.* 1: 385-402.
3. Mizusawa, H., et al. 2000. Peroxiredoxin I (macrophage 23 kDa stress protein) is highly and widely expressed in the rat nervous system. *Neurosci. Lett.* 283: 57-60.
4. Noh, D.Y., et al. 2001. Overexpression of peroxiredoxin in human breast cancer. *Anticancer Res.* 21: 2085-2090.
5. Kim, S.H., et al. 2001. Protein levels of human peroxiredoxin subtypes in brains of patients with Alzheimer's disease and Down syndrome. *J. Neural Transm. Suppl.* 61: 223-235.
6. Kinnula, V.L., et al. 2002. Cell specific expression of peroxiredoxins in human lung and pulmonary sarcoidosis. *Thorax* 57: 157-164.
7. Hofmann, B., et al. 2002. Peroxiredoxins. *Biol. Chem.* 383: 347-364.
8. Fujii, J., et al. 2002. Advances in our understanding of peroxiredoxin, a multifunctional, mammalian redox protein. *Redox Rep.* 7: 123-130.

CHROMOSOMAL LOCATION

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

PRODUCT

PRX IV (h): 293T Lysate represents a lysate of human PRX IV transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PRX IV (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PRX IV antibodies. Recommended use: 10-20 µl per lane.

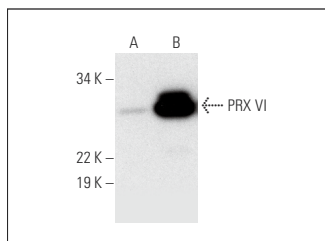
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PRX VI (G-7): sc-393025 is recommended as a positive control antibody for Western Blot analysis of enhanced human PRX IV expression in PRX IV transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

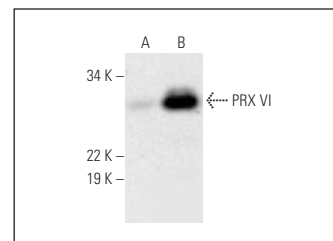
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PRX VI (G-7): sc-393025. Western blot analysis of PRX VI expression in non-transfected: sc-117752 (A) and human PRX VI transfected: sc-115407 (B) 293T whole cell lysates.



PRX VI (A-11): sc-393024. Western blot analysis of PRX VI expression in non-transfected: sc-117752 (A) and human PRX VI transfected: sc-115407 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.