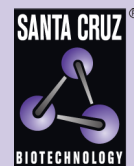


# GPx-1/2 (E-7): sc-74498



The Power to Question

## BACKGROUND

Glutathione peroxidase (GPx) enzymes are generally selenium-containing tetrameric glycoproteins that help prevent lipid peroxidation of cell membranes. GPx enzymes reduce lipid hydroperoxides to alcohols, and reduce free hydrogen peroxide to water. GPx members are among the few proteins known in higher vertebrates to contain selenocysteine, which occurs at the active site of glutathione peroxidase and is coded by the nonsense (stop) codon TGA. There are eight GPx homologs (GPx-1–8). GPx-1, GPx-2 and Gpx-3 exist as homotetramers. GPx-4 has a high tendency to form high molecular weight oligomers. GPx-1 plays an important role in the antioxidant defense of the vascular wall and neural cells in response to oxidative stress. GPx-2 is the major isoform in the lungs and its basal or inducible expression is dependent on Nrf2. GPx-3 is under regulation by hypoxic stress and the expression and deficiency of GPx-3 is associated with cardiovascular disease and stroke. GPx-5 is selenium-independent; it is bound to the acrosome of sperm, where it may protect sperm from premature acrosome reaction in the epididymis.

## CHROMOSOMAL LOCATION

Genetic locus: GPX1 (human) mapping to 3q21.31, GPX2 (human) mapping to 14q23.3; Gpx1 (mouse) mapping to 9 F2, Gpx2 (mouse) mapping to 12 C3.

## SOURCE

GPx-1/2 (E-7) is a mouse monoclonal antibody raised against amino acids 50-201 mapping at the C-terminus of GPx-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GPx-1/2 (E-7) is recommended for detection of GPx-1 and GPx-2 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).

Molecular Weight of GPx-1 monomer: 23 kDa.

Molecular Weight of GPx-1 homotetramer: 92 kDa.

Molecular Weight of GPx-2 monomer: 23 kDa.

Molecular Weight of GPx-5: 26 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, rat liver extract: sc-2395 or mouse liver extract: sc-2256.

## RESEARCH USE

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

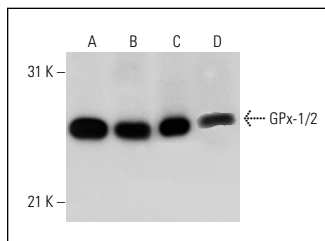
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

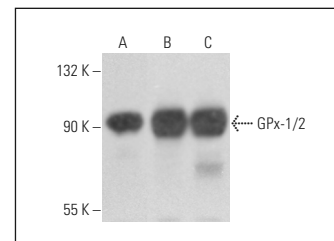
## STORAGE

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

## DATA



GPx-1/2 (E-7): sc-74498. Western blot analysis of GPx-1/2 expression in THP-1 whole cell lysate (A) and mouse kidney (B), mouse liver (C) and rat kidney (D) tissue extracts.



GPx-1/2 (E-7): sc-74498. Western blot analysis of GPx-1/2 expression in SK-N-SH whole cell lysate (A) and human prostate (B) and rat liver (C) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Pei, J., et al. 2013. Oxidative stress is involved in the pathogenesis of Keshan disease (an endemic dilated cardiomyopathy) in China. *Oxid. Med. Cell. Longev.* 2013: 474203.
2. Bagulho, A., et al. 2015. The extracellular matrix modulates H<sub>2</sub>O<sub>2</sub> degradation and redox signaling in endothelial cells. *Redox Biol.* 6: 454-460.
3. Soeur, J., et al. 2015. Skin resistance to oxidative stress induced by resveratrol: from Nrf2 activation to GSH biosynthesis. *Free Radic. Biol. Med.* 78: 213-223.
4. Ballmann, C., et al. 2017. Long-term dietary quercetin enrichment as a cardioprotective countermeasure in mdx mice. *Exp. Physiol.* 102: 635-649.
5. Ballmann, C., et al. 2017. Lifelong quercetin enrichment and cardioprotection in Mdx/Utrn<sup>+/-</sup> mice. *Am. J. Physiol. Heart Circ. Physiol.* 312: H128-H140.
6. Perianes-Cachero, A., et al. 2019. Oxidative stress and lymphocyte alterations in chronic relapsing experimental allergic encephalomyelitis in the rat hippocampus and protective effects of an ethanolamine phosphate salt. *Mol. Neurobiol.* 57: 860-878.
7. Hernández-Arciga, U., et al. 2020. Effect of long-term moderate-exercise combined with metformin-treatment on antioxidant enzymes activity and expression in the gastrocnemius of old female Wistar rats. *Biogerontology* 21: 787-805.
8. Li, J., et al. 2021. Hesperetin ameliorates hepatic oxidative stress and inflammation via the PI3K/Akt-Nrf2-ARE pathway in oleic acid-induced Hep G2 cells and a rat model of high-fat diet-induced NAFLD. *Food Funct.* 12: 3898-3918.

## CONJUGATES

See **GPx-1/2 (B-6): sc-133160** for GPx-1/2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.