

## GPx-1/2 (B-6): sc-133160



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 3p21.31, GPX2 (human) mapping to 14q23.3; Gpx1 (mouse) mapping to 9 F2, Gpx2 (mouse) mapping to 12 C3.

## SOURCE

GPx-1/2 (B-6) 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>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GPx-1/2 (B-6) is available conjugated to agarose (sc-133160 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133160 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133160 PE), fluorescein (sc-133160 FITC), Alexa Fluor® 488 (sc-133160 AF488), Alexa Fluor® 546 (sc-133160 AF546), Alexa Fluor® 594 (sc-133160 AF594) or Alexa Fluor® 647 (sc-133160 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133160 AF680) or Alexa Fluor® 790 (sc-133160 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

GPx-1/2 (B-6) 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), 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).

Molecular Weight of GPx-1 monomer: 23 kDa.

Molecular Weight of GPx-1 homotetramer: 92 kDa.

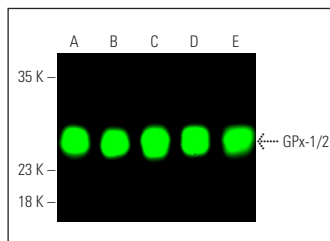
Molecular Weight of GPx-2 monomer: 23 kDa.

Molecular Weight of GPx-5: 26 kDa.

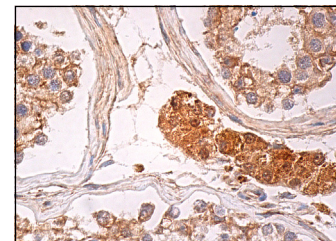
## STORAGE

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 (B-6): sc-133160. Near-infrared western blot analysis of GPx-1/2 expression in THP-1 whole cell lysate (A) and mouse liver (B), rat liver (C), mouse kidney (D) and rat kidney (E) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



GPx-1/2 (B-6): sc-133160. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells.

## SELECT PRODUCT CITATIONS

- Mandrafino, G., et al. 2010. Smoke exposure and circulating progenitor cells: evidence for modulation of antioxidant enzymes and cell count. *Clin. Biochem.* 43: 1436-1442.
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- Wu, C.H., et al. 2012. Nickel-induced epithelial-mesenchymal transition by reactive oxygen species generation and E-cadherin promoter hypermethylation. *J. Biol. Chem.* 287: 25292-25302.
- Li, R., et al. 2013. Imbalanced network biomarkers for traditional Chinese medicine syndrome in gastritis patients. *Sci. Rep.* 3: 1543.
- Yao, X., et al. 2014. Estrogen-provided cardiac protection following burn trauma is mediated through a reduction in mitochondria-derived DAMPs. *Am. J. Physiol. Heart Circ. Physiol.* 306: H882-H894.
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- Kim, Y.S., et al. 2018. α-lipoic acid reduces retinal cell death in diabetic mice. *Biochem. Biophys. Res. Commun.* 503: 1307-1314.
- Kaufmann, U., et al. 2019. Calcium signaling controls pathogenic Th17 cell-mediated inflammation by regulating mitochondrial function. *Cell Metab.* 29: 1104-1118.e6.

## RESEARCH USE

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

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