

# GPx-1/2 (H-151): sc-30147

## 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 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.

## REFERENCES

1. Chu, F.F., et al. 1997. Expression and chromosomal mapping of mouse Gpx2 gene encoding the gastrointestinal form of glutathione peroxidase, GPX-GI. *Biomed. Environ. Sci.* 10: 156-162.
2. Hall, L., et al. 1998. The majority of human glutathione peroxidase type 5 (GPX5) transcripts are incorrectly spliced: implications for the role of GPX5 in the male reproductive tract. *Biochem. J.* 333: 5-9.

## SOURCE

GPx-1/2 (H-151) is a rabbit polyclonal antibody raised against amino acids 50-201 mapping at the C-terminus of GPx-1/2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GPx-1/2 (H-151) is recommended for detection of GPx-1, GPx-2 and, to a lesser extent, GPx-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

GPx-1/2 (H-151) is also recommended for detection of GPx-1, GPx-2, and to a lesser extent, GPx-5 in additional species, including equine.

Molecular Weight of GPx-1 monomer/homotetramer: 23/92 kDa.

Molecular Weight of GPx-2/GPx-5: 23/26 kDa.

Positive Controls: rat liver extract: sc-2395, THP-1 cell lysate: sc-2238 or mouse liver extract: sc-2256.

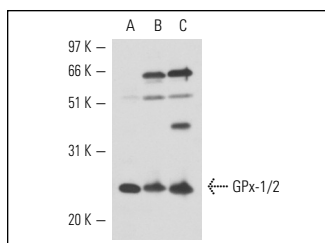
## STORAGE

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

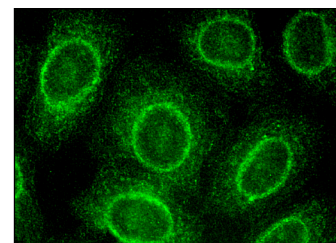
## RESEARCH USE

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

## DATA



GPx-1/2 (H-151): sc-30147. Western blot analysis of GPx-1/2 expression in THP-1 (A) whole cell lysate and rat liver (B) and mouse liver (C) tissue extracts. Note the presence of GPx multimers.



GPx-1/2 (H-151): sc-30147. Immunofluorescence staining of methanol-fixed HeLa cells showing perinuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Farina, M., et al. 2009. Probuco increases glutathione peroxidase-1 activity and displays long-lasting protection against methylmercury toxicity in cerebellar granule cells. *Toxicol. Sci.* 112: 416-426.
2. Hoffman-Goetz, L., et al. 2009. Voluntary exercise training in mice increases the expression of antioxidant enzymes and decreases the expression of TNF-α in intestinal lymphocytes. *Brain Behav. Immun.* 23: 498-506.
3. Lebiedzinska, M., et al. 2009. Age-related changes in levels of p66Shc and serine 36-phosphorylated p66Shc in organs and mouse tissues. *Arch. Biochem. Biophys.* 486: 73-80.
4. Colle, D., et al. 2013. Probuco increases striatal glutathione peroxidase activity and protects against 3-nitropropionic acid-induced pro-oxidative damage in rats. *PLoS ONE* 8: e67658.
5. Lukic, I., et al. 2014. Lymphocyte levels of redox-sensitive transcription factors and antioxidative enzymes as indicators of pro-oxidative state in depressive patients. *Neuropsychobiology* 70: 1-9.
6. Martin-Montañez, E., et al. 2014. Involvement of IGF-II receptors in the antioxidant and neuroprotective effects of IGF-II on adult cortical neuronal cultures. *Biochim. Biophys. Acta* 1842: 1041-1051.
7. Ortiz, F., et al. 2015. Melatonin blunts the mitochondrial/NLRP3 connection and protects against radiation-induced oral mucositis. *J. Pineal Res.* 58: 34-49.
8. Todorovic, N., et al. 2016. Olanzapine modulation of hepatic oxidative stress and inflammation in socially isolated rats. *Eur. J. Pharm. Sci.* 81: 94-102.


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Try **GPx-1/2 (B-6): sc-133160** or **GPx-1/2 (D-12): sc-133152**, our highly recommended monoclonal alternatives to GPx-1/2 (H-151). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **GPx-1/2 (B-6): sc-133160**.