

GPx-1 (N-20): sc-22145

BACKGROUND

Glutathione peroxidase (GPx) enzymes are generally a selenium-containing tetrameric glycoprotein that helps prevent lipid peroxidation of cell membranes. GPx enzymes reduce lipid hydroperoxides to alcohols and reduce free hydrogen peroxide to water. GPx members are of 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. 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; its basal or inducible expression is dependent on Nrf2. GPx-3 is under regulation by hypoxic stress. The expression and deficiency of GPx-3 is associated with cardiovascular disease and stroke. GPx-5 is selenium-independent and 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; Gpx1 (mouse) mapping to 9 F2.

SOURCE

GPx-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GPx-1 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.

Blocking peptide available for competition studies, sc-22145 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

GPx-1 (N-20) is recommended for detection of GPx-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GPx-1 (N-20) is also recommended for detection of GPx-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GPx-1 siRNA (h): sc-40646, GPx-1 siRNA (m): sc-40647, GPx-1 shRNA Plasmid (h): sc-40646-SH, GPx-1 shRNA Plasmid (m): sc-40647-SH, GPx-1 shRNA (h) Lentiviral Particles: sc-40646-V and GPx-1 shRNA (m) Lentiviral Particles: sc-40647-V.

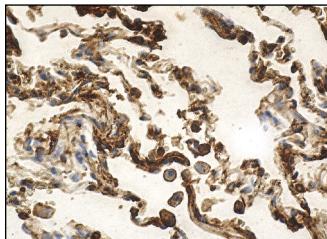
Molecular Weight of GPx-1 monomer: 23 kDa.

Molecular Weight of GPx-1 homotetramer: 92 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



GPx-1 (N-20): sc-22145. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of macrophages and pneumocytes.

SELECT PRODUCT CITATIONS

- Nishida, H., et al. 2007. Shengmai-san enhances antioxidant potential in C2C12 myoblasts through the induction of intracellular glutathione peroxidase. *J. Pharmacol. Sci.* 105: 342-352.
- de Tudela, M.V., et al. 2010. Human neuroblastoma cells with MYCN amplification are selectively resistant to oxidative stress by transcriptionally up-regulating glutamate cysteine ligase. *J. Neurochem.* 113: 819-825.
- Ng, K.M., et al. 2010. Melatonin reduces hippocampal β -amyloid generation in rats exposed to chronic intermittent hypoxia. *Brain Res.* 1354: 163-171.
- Lee, I., et al. 2010. A suggested role for mitochondria in Noonan syndrome. *Biochim. Biophys. Acta* 1802: 275-283.
- Veas-Perez de Tudela, M., et al. 2010. Human neuroblastoma cells with MYCN amplification are selectively resistant to oxidative stress by transcriptionally up-regulating glutamate cysteine ligase. *J. Neurochem.* 113: 819-825.
- Chen, D.D., et al. 2012. Endothelin 1 activation of endothelin A receptor/NADPH oxidase pathway and diminished antioxidants critically contribute to endothelial progenitor cell reduction and dysfunction in salt-sensitive hypertension. *Hypertension* 59: 1037-1043.

RESEARCH USE

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