SANTA CRUZ BIOTECHNOLOGY, INC.

GPx-5 (D-2): sc-376877

SANTA CRUZ BIOTECHNOLOGY

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 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 (GPx-5) transcripts are incorrectly spliced: implications for the role of GPx-5 in the male reproductive tract. Biochem. J. 333: 5-9.
3. Bilodeau, J.F., et al. 1999. Increased resistance of GPx-1 transgenic mice to tumor promoter-induced loss of glutathione peroxidase activity in skin. Int. J. Cancer 80: 863-867.
4. Mork, H., et al. 2000. Inverse mRNA expression of the selenocysteine-containing proteins GI-GPx and SeP in colorectal adenomas compared with adjacent normal mucosa. Nutr. Cancer 37: 108-116.
5. Crack, P.J., et al. 2001. Increased infarct size and exacerbated apoptosis in the glutathione peroxidase-1 (Gpx-1) knockout mouse brain in response to ischemia/reperfusion injury. J. Neurochem. 78: 1389-1399.
6. Nasr, M.A., et al. 2004. GPx-1 modulates Akt and P70S6K phosphorylation and Gadd45 levels in MCF-7 cells. Free Radic. Biol. Med. 37: 187-195.

CHROMOSOMAL LOCATION

Genetic locus: Gpx5 (mouse) mapping to 13 A3.1.

SOURCE

GPx-5 (D-2) is a mouse monoclonal antibody raised against amino acids 22-61 mapping near the N-terminus of GPx-5 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

GPx-5 (D-2) is recommended for detection of GPx-5 of mouse and rat 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).

Suitable for use as control antibody for GPx-5 siRNA (m): sc-62420, GPx-5 shRNA Plasmid (m): sc-62420-SH and GPx-5 shRNA (m) Lentiviral Particles: sc-62420-V.

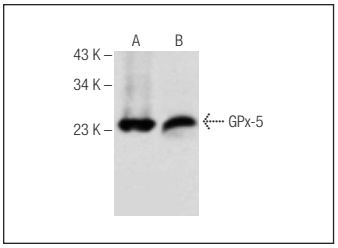
Molecular Weight of GPx-5 monomer: 25 kDa.

Positive Controls: mouse epididymis extract: sc-364240 or rat epididymis extract: sc-364804.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GPx-5 (D-2): sc-376877. Western blot analysis of GPx-5 expression in mouse epididymus (**A**) and rat epididymus (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Kolasa-Wołosiuk, A., et al. 2019. Antioxidant enzyme expression of mRNA and protein in the epididymis of finasteride-treated male rat offspring during postnatal development. Arch. Med. Sci. 15: 797-810.
2. Szypulska-Koziarska, D., et al. 2019. The effects of short-term immunosuppressive therapy on redox parameters in the livers of pregnant Wistar rats. Int. J. Environ. Res. Public Health 16: 1370.

RESEARCH USE

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