

GPx-6 (m): 293T Lysate: sc-120618

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.

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.
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 GADD 45 levels in MCF-7 cells. *Free Radic. Biol. Med.* 37: 187-195.
7. Hussain, S.P., et al. 2004. p53-induced up-regulation of MnSOD and GPx but not catalase increases oxidative stress and apoptosis. *Cancer Res.* 64: 2350-2356.
8. Hamanishi, T., et al. 2004. Functional variants in the glutathione peroxidase-1 (GPx-1) gene are associated with increased intima-media thickness of carotid arteries and risk of macrovascular diseases in Japanese type 2 diabetic patients. *Diabetes* 53: 2455-2460.
9. Bierl, C., et al. 2004. Determinants of human plasma glutathione peroxidase (GPx-3) expression. *J. Biol. Chem.* 279: 26839-26845.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: Gpx6 (mouse) mapping to 13 A3.1.

PRODUCT

GPx-6 (m): 293T Lysate represents a lysate of mouse GPx-6 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

GPx-6 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GPx-6 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.