Anti-Glutathione Peroxidase 1 Antibody

R1401-12

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse
Applications:	WB, IF-Cell, IHC-P, FC
Molecular Wt:	Predicted band size: 22 kDa

Description: 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 tendancy 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.

Immunogen: Synthetic peptide within C-terminalhuman Glutathione peroxidase 1.

Positive control: Mouse liver tissue, human liver tissue, 293T, human breast cancer tissue, human kidney tissue, mouse brain tissue, HepG2.

Subcellular location: Cytoplasm.

Database links: SwissProt: P07203 Human | P11352 Mouse

Recommended Dilutions:

WB	1:500-1:1,000
IF-Cell	1:100-1:200
IHC-P	1:50-1:200
FC	1:50-1:100

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Immunogen affinity purified.

Images

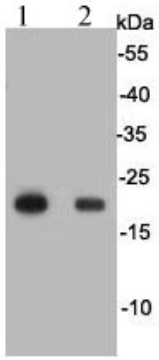

Fig1: Western blot analysis of Glutathione Peroxidase 1 on different lysates. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody was used at a 1:500 dilution in 5% BSA at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:5,000 dilution was used for 1 hour at room temperature.
Positive control:
Lane 1: Mouse liver tissue lysate, untreated
Lane 2: Human liver tissue lysate, untreated

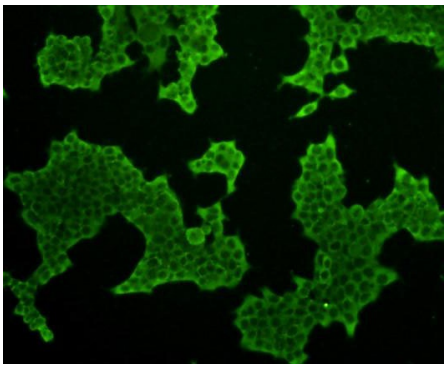

Fig2: ICC staining Glutathione Peroxidase 1 in 293T cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the antibody (R1401-12) at a dilution of 1:100 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™ 488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/100 dilution.

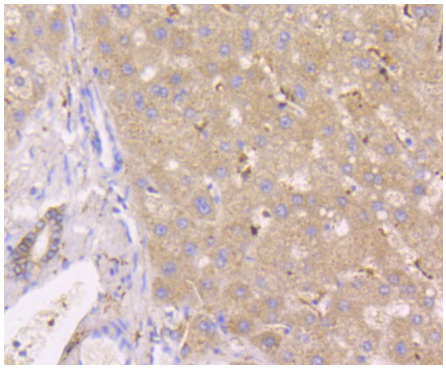

Fig3: Immunohistochemical analysis of paraffin-embedded human liver tissue using anti-Glutathione Peroxidase 1 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (R1401-12) at 1/200 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. Counter stained with hematoxylin and mounted with DPX.

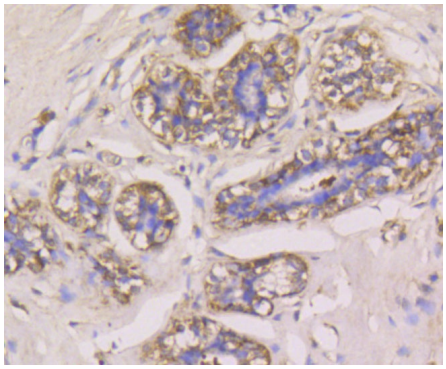

Fig4: Immunohistochemical analysis of paraffin-embedded human breast cancer tissue using anti-Glutathione Peroxidase 1 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (R1401-12) at 1/50 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. Counter stained with hematoxylin and mounted with DPX.

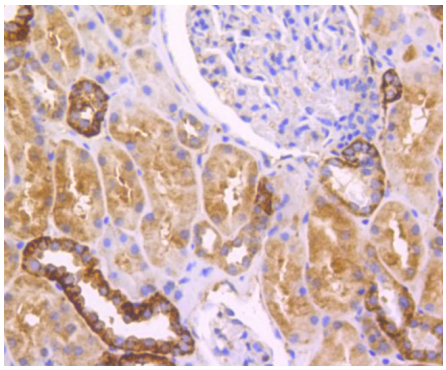

Fig5: Immunohistochemical analysis of paraffin-embedded human kidney tissue using anti-Glutathione Peroxidase 1 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (R1401-12) at 1/200 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. Counter stained with hematoxylin and mounted with DPX.

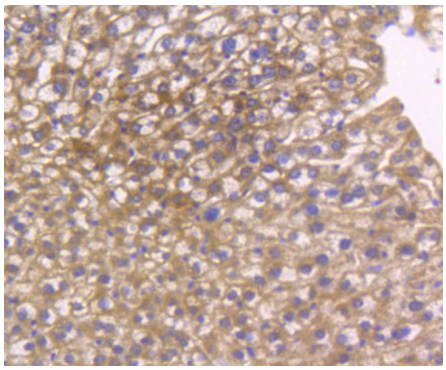

Fig6: Immunohistochemical analysis of paraffin-embedded mouse liver tissue using anti-Glutathione Peroxidase 1 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (R1401-12) at 1/200 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. Counter stained with hematoxylin and mounted with DPX.

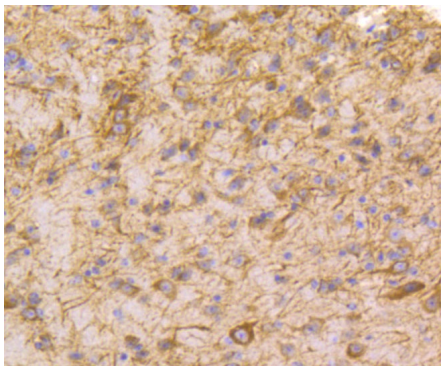

Fig7: Immunohistochemical analysis of paraffin-embedded mouse brain tissue using anti-Glutathione Peroxidase 1 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (R1401-12) at 1/100 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. Counter stained with hematoxylin and mounted with DPX.

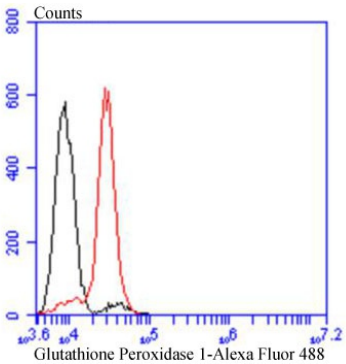

Fig8: Flow cytometric analysis of Glutathione Peroxidase 1 was done on HepG2 cells. The cells were fixed, permeabilized and stained with Glutathione Peroxidase 1 antibody at 1/100 dilution (red) compared with an unlabelled control (cells without incubation with primary antibody; black). After incubation of the primary antibody on room temperature for an hour, the cells was stained with a Alexa Fluor™ 488-conjugated goat anti-rabbit IgG Secondary antibody at 1/500 dilution for 30 minutes.

Background References

1. Crilly MJ et al. The role of Nrf2 in skeletal muscle contractile and mitochondrial function. J Appl Physiol (1985) 121:730-40 (2016).
2. Di Filippo C et al. Daily Oxygen/O3 Treatment Reduces Muscular Fatigue and Improves Cardiac Performance in Rats Subjected to Prolonged High Intensity Physical Exercise. Oxid Med Cell Longev 2015:190640 (2015).