Anti-Glutathione peroxidase 1 Antibody [C5-A10]

EM1901-56

Product Type:	Mouse monoclonal IgG2b, primary antibodies
Species reactivity:	Human, Mouse
Applications:	WB, IF-Cell, FC, IHC-P
Molecular Wt:	Predicted band size: 22 kDa
Clone number:	C5-A10

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: Recombinant protein within Human Glutathione Peroxidase 1 aa 20-203 / 203.

Positive control: HEK-293 cell lysate, HepG2 cell lysate, SH-SY5Y cell lysate, HT-29 cell lysate, human liver tissue lysate, human kidney tissue lysate, THP-1, human liver tissue.

Subcellular location: Cytoplasm.

Database links: SwissProt: P07203 Human | P11352 Mouse

Recommended Dilutions:

WB	1:2,000
IF-Cell	1:100
FC	1:1:1,000
IHC-P	1:2,000

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% 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: Protein G affinity purified.

Images

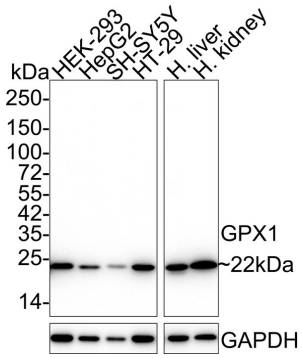

Fig1: Western blot analysis of Glutathione peroxidase 1 on different lysates with Mouse anti-Glutathione peroxidase 1 antibody (EM1901-56) at 1/2,000 dilution.

Lane 1: HEK-293 cell lysate (20 µg/Lane)
Lane 2: HepG2 cell lysate (20 µg/Lane)
Lane 3: SH-SY5Y cell lysate (20 µg/Lane)
Lane 4: HT-29 cell lysate (20 µg/Lane)
Lane 5: Human liver tissue lysate (40 µg/Lane)
Lane 6: Human kidney tissue lysate (40 µg/Lane)

Predicted band size: 22 kDa
Observed band size: 22 kDa

Exposure time: 24 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (EM1901-56) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

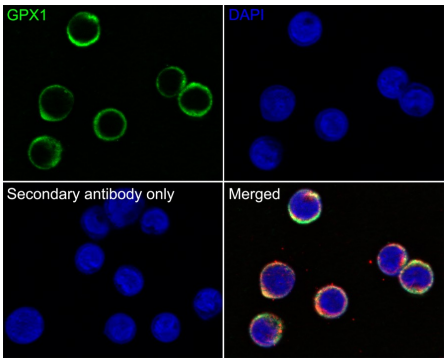

Fig2: Immunocytochemistry analysis of THP-1 cells labeling Glutathione peroxidase 1 with Mouse anti-Glutathione peroxidase 1 antibody (EM1901-56) at 1/100 dilution.

Cells were fixed in 80% precooled methanol for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-Glutathione peroxidase 1 antibody (EM1901-56) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

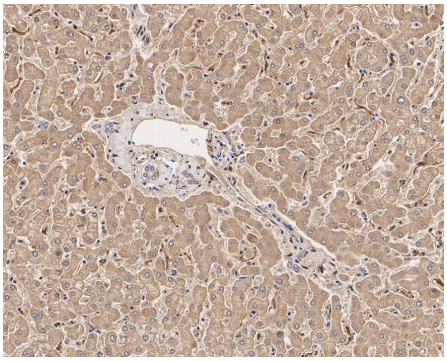

Fig3: Immunohistochemical analysis of paraffin-embedded human liver tissue with Mouse anti-Glutathione peroxidase 1 antibody (EM1901-56) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-56) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

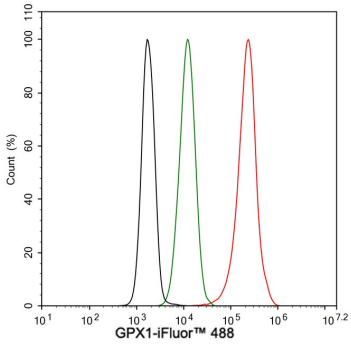

Fig4: Flow cytometric analysis of THP-1 cells labeling Glutathione peroxidase 1.

Cells were fixed and permeabilized. Then stained with the primary antibody (EM1901-56, 1μg/mL) (red) compared with Mouse IgG1 Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Mouse IgG Secondary antibody (HA1125) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Zhang Q. et. al. High Gpx1 expression predicts poor survival in laryngeal squamous cell carcinoma. Auris Nasus Larynx. 2018 Feb;45(1):13-19.
2. Yan J. et. al. GPx1 knockdown suppresses chondrogenic differentiation of ATDC5 cells through induction of reductive stress. Acta Biochim Biophys Sin (Shanghai). 2017 Feb 6;49(2):110-118.