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# Anti-GPX1 Antibody Picoband™ (monoclonal, 8B10)

Catalog # ABO14842

## Product Information

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| **Application** | WB, IHC, IF, ICC, FC |
| **Primary Accession** | P07203 |
| **Host** | Mouse |
| **Isotype** | Mouse IgG2b |
| **Reactivity** | Rat, Human, Mouse |
| **Clonality** | Monoclonal |
| **Format** | Lyophilized |
| **Description** | Anti-GPX1 Antibody Picoband™ (monoclonal, 8B10) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. |
| **Reconstitution** | Add 0.2ml of distilled water will yield a concentration of 500 □g/ml. |

## Additional Information

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| **Gene ID** | 2876 |
| **Other Names** | Glutathione peroxidase 1, GPx-1, GSHPx-1, 1.11.1.9, Cellular glutathione peroxidase, Phospholipid-hydroperoxide glutathione peroxidase GPX1, 1.11.1.12, GPX1 (HGNC:4553) |
| **Calculated MW** | 22088 |
| **Application Details** | Western blot, 0.1-0.5 □g/ml<br>Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml<br>Immunocytochemistry/Immunofluorescence, 5 □g/ml<br>Flow Cytometry, 1-3 □g/1x10^6 cells |
| **Subcellular Localization** | Cytoplasm |
| **Source** | Eukaryota |
| **Contents** | Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3. |
| **Clone Names** | Clone: 8B10 |
| **Immunogen** | A synthetic peptide corresponding to a sequence in the middle region of human GPX1, different from the related mouse sequence by six amino acids and from the related rat sequence by five amino acids. |
| **Cross Reactivity** | No cross-reactivity with other proteins. |
| **Storage** | Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C |

for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

## Protein Information

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| **Name** | GPX1 ( HGNC:4553) |
| **Function** | Catalyzes the reduction of hydroperoxides in a glutathione- dependent manner thus regulating cellular redox homeostasis (PubMed:11115402, PubMed:36608588). Can reduce small soluble hydroperoxides such as H2O2, cumene hydroperoxide and tert-butyl hydroperoxide, as well as several fatty acid-derived hydroperoxides (PubMed:11115402, PubMed:36608588). In platelets catalyzes the reduction of 12-hydroperoxyeicosatetraenoic acid, the primary product of the arachidonate 12-lipoxygenase pathway (PubMed:11115402). |
| **Cellular Location** | Cytoplasm {ECO:0000250\|UniProtKB:P11352}. Mitochondrion {ECO:0000250\|UniProtKB:P11352} |
| **Tissue Location** | Expressed in platelets (at protein level). |

## Background

Glutathione peroxidase 1, also known as, GPX-1 is an enzyme that in humans is encoded by the GPX1 gene. It is mapped to 3p21.31. This gene encodes a member of the glutathione peroxidase family, consisting of eight known glutathione peroxidases (Gpx1-8) in humans. Glutathione peroxidase functions in the detoxification of hydrogen peroxide, and is one of the most important antioxidant enzymes in humans. It has been reported that the protein encoded by this gene protects from CD95-induced apoptosis in cultured breast cancer cells and inhibits 5-lipoxygenase in blood cells, and its overexpression delays endothelial cell growth and increases resistance to toxic challenges. GPX1 is one of only a 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.

## Images

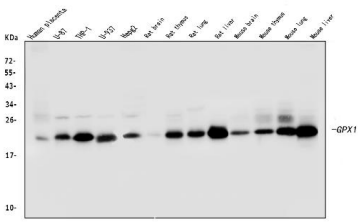



Figure 1. Western blot analysis of GPX1 using anti-GPX1 antibody (M01019-2).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.
The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human placenta tissue lysates,
Lane 2: human U-87 whole cell lysates,
Lane 3: human THP-1 whole cell lysates,
Lane 4: human U-937 whole cell lysates,
Lane 5: human HepG2 whole cell lysates,
Lane 6: rat brain tissue lysates,
Lane 7: rat thymus tissue lysates,
Lane 8: rat lung tissue lysates,
Lane 9: rat liver tissue lysates,
Lane 10: mouse brain tissue lysates,
Lane 11: mouse thymus tissue lysates,
Lane 12: mouse lung tissue lysates,
Lane 13: mouse liver tissue lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes.

Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-GPX1 antigen affinity purified monoclonal antibody (Catalog # M01019-2) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for GPX1 at approximately 22KD. The expected band size for GPX1 is at 22KD.

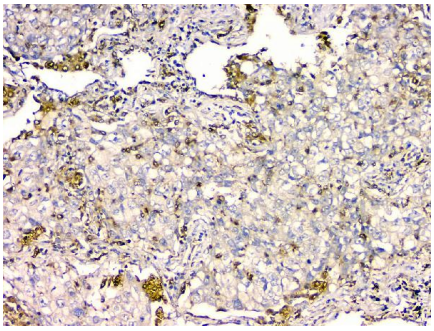


Figure 2. IHC analysis of GPX1 using anti GPX1 antibody (M01019-2).
GPX1 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-GPX1 Antibody (M01019-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

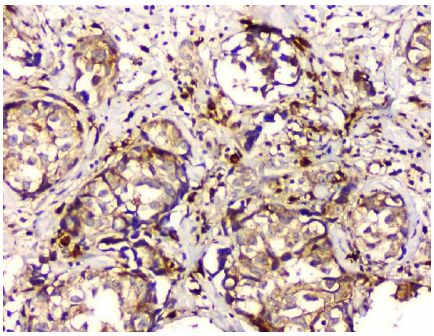


Figure 3. IHC analysis of GPX1 using anti GPX1 antibody (M01019-2).
GPX1 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-GPX1 Antibody (M01019-2) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

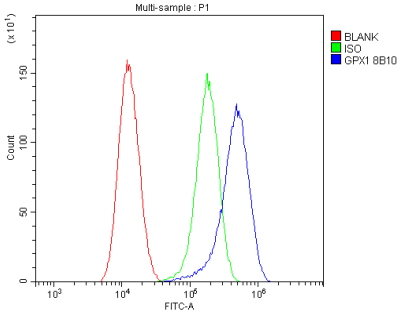
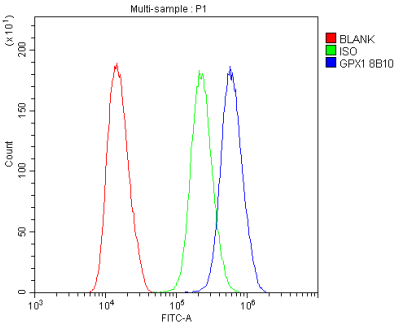



Figure 4. Flow Cytometry analysis of U87 cells using anti-GPX1 antibody (M01019-2).
Overlay histogram showing U87 cells stained with M01019-2 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-GPX1 Antibody (M01019-2, 1 µg/1x$10^6$ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x$10^6$ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x$10^6$) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Figure 5. Flow Cytometry analysis of U251 cells using anti-GPX1 antibody (M01019-2).
Overlay histogram showing U251 cells stained with M01019-2 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse




anti-GPX1 Antibody (M01019-2, 1 µg/1x10$^6$ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10$^6$ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10$^6$) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

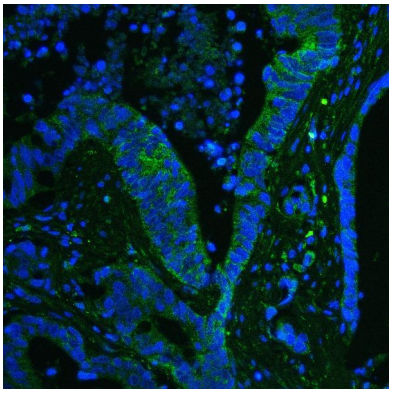


Figure 6. IF analysis of GPX1 using anti-GPX1 antibody (M01019-2).
GPX1 was detected in paraffin-embedded section of human colon cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. And then incubated with 5 µg/ml mouse anti-GPX1 Antibody (M01019-2) overnight at 4°C. Biotin conjugated goat anti-mouse IgG (BA1001) was used as secondary antibody and incubated for 30 minutes at 37°C. The section was developed using DyLight®488 Conjugated Avidin (BA1128). Visualize using a fluorescence microscope and filter sets appropriate for the label used.

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