Anti-GPX4 Antibody

ER1803-15

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

Description: Essential antioxidant peroxidase that directly reduces phospholipid hydroperoxide even if they are incorporated in membranes and lipoproteins . Can also reduce fatty acid hydroperoxide, cholesterol hydroperoxide and thymine hydroperoxide . Plays a key role in protecting cells from oxidative damage by preventing membrane lipid peroxidation. Required to prevent cells from ferroptosis, a non-apoptotic cell death resulting from an iron-dependent accumulation of lipid reactive oxygen species . The presence of selenocysteine (Sec) versus Cys at the active site is essential for life: it provides resistance to overoxidation and prevents cells against ferroptosis . The presence of Sec at the active site is also essential for the survival of a specific type of parvalbumin-positive interneurons, thereby preventing against fatal epileptic seizures . May be required to protect cells from the toxicity of ingested lipid hydroperoxides . Required for normal sperm development and male fertility. Essential for maturation and survival of photoreceptor cells. Plays a role in a primary T-cell response to viral and parasitic infection by protecting T-cells from ferroptosis and by supporting T-cell expansion.

Immunogen: Recombinant protein within Human GPX4 aa 1-100 / 197.

Positive control: Rat testis tissue lysate, HepG2, LOVO, MCF-7, mouse testis tissue.

Subcellular location: Cytoplasm. Mitochondrion.

Database links: SwissProt: P36969 Human | O70325 Mouse | P36970 Rat

Recommended Dilutions:

WB	1:500-1:1,000
IF-Cell	1:50-1:100
IHC-P	1:50 -1:600
FC	1:50-1:100

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: Immunogen affinity purified.

Images

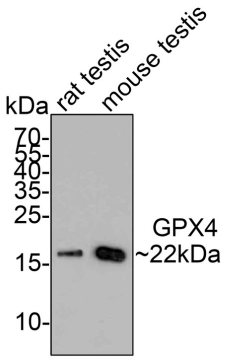

Fig1: Western blot analysis of GPX4 on different lysates with Rabbit anti-GPX4 antibody (ER1803-15) at 1/1,000 dilution.

Lane 1: Rat testis tissue lysate (20 µg/Lane)
Lane 2: Mouse testis tissue lysate (20 µg/Lane)

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

Exposure time: 2 minutes;

15% 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 (ER1803-15) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:300,000 dilution was used for 1 hour at room temperature.

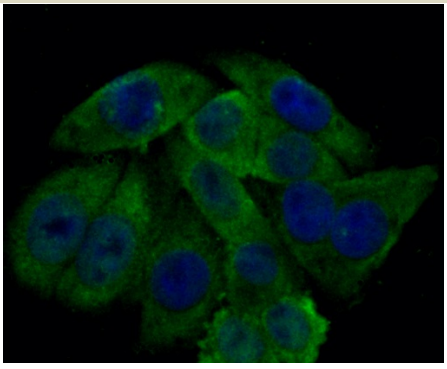

Fig2: ICC staining GPX4 in HepG2 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

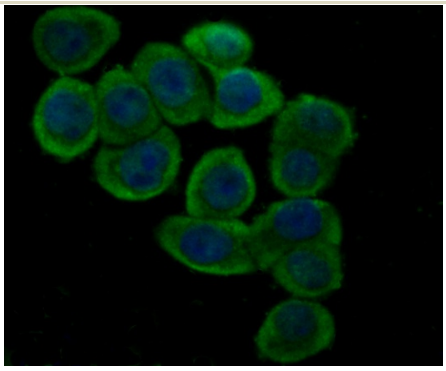

Fig3: ICC staining GPX4 in LOVO cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

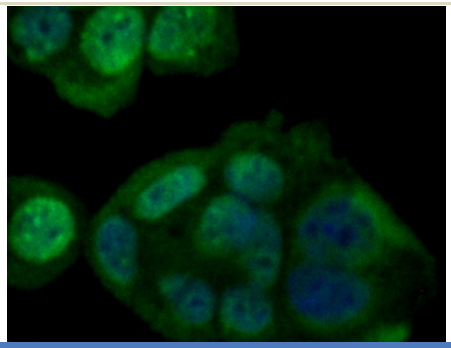

Fig4: ICC staining GPX4 in MCF-7 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

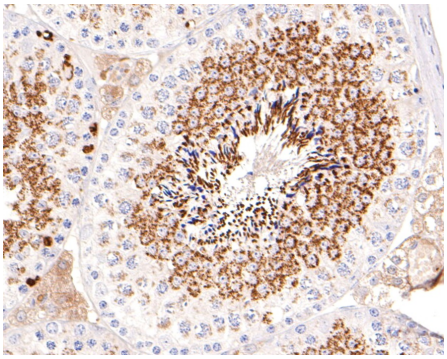

Fig5: Immunohistochemical analysis of paraffin-embedded mouse testis tissue using anti- GPX4 antibody. Counter stained with hematoxylin.

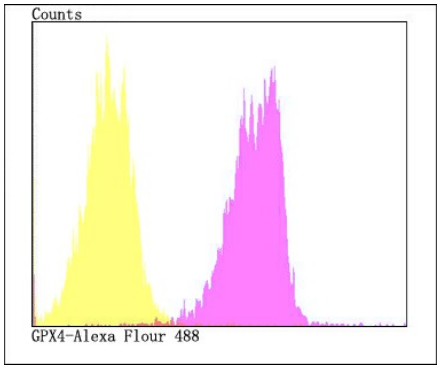

Fig6: Flow cytometric analysis of HepG2 cells with GPX4 antibody at 1/100 dilution (fuchsia) compared with an unlabelled control (cells without incubation with primary antibody; yellow). Alexa Fluor 488-conjugated goat anti-rabbit IgG was used as the secondary antibody.

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

Background References

1. Yang W S et al. Regulation of ferroptotic cancer cell death by GPX4. Cell 156:317-331(2014).
2. Scheerer P. Structural basis for catalytic activity and enzyme polymerization of phospholipid hydroperoxide glutathione peroxidase-4 (GPx4). Biochemistry 46:9041-9049(2007).