

**Anti-GPX4 Picoband Antibody**  
**Catalog # ABO12311****Specification**

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**Anti-GPX4 Picoband Antibody - Product Information**

Application	<b>WB, IHC-P</b>
Primary Accession	<a href="#">P36969</a>
Host	<b>Rabbit</b>
Reactivity	<b>Human, Mouse, Rat</b>
Clonality	<b>Polyclonal</b>
Format	<b>Lyophilized</b>

**Description**

Rabbit IgG polyclonal antibody for Phospholipid hydroperoxide glutathione peroxidase, mitochondrial(GPX4) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-GPX4 Picoband Antibody - Additional Information**

**Gene ID** 2879

**Other Names**

Phospholipid hydroperoxide glutathione peroxidase, mitochondrial, PHGPx, 1.11.1.12, Glutathione peroxidase 4, GPx-4, GSHPx-4, GPX4

**Calculated MW**

22175 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat  
Western blot, 0.1-0.5 µg/ml, Mouse, Rat, Human

**Subcellular Localization**

Isoform Mitochondrial: Mitochondrion.

**Tissue Specificity**

Present primarily in testis.

**Protein Name**

Phospholipid hydroperoxide glutathione peroxidase, mitochondrial

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human GPX4(30-60aa ASRDDWRCARSMHEFSAKDIDGHMVNLDKYR), different from the related mouse sequence by one amino acid, and from the related rat sequence by two amino acids.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage**

**At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

**Anti-GPX4 Picoband Antibody - Protein Information**

**Name** GPX4 {ECO:0000303|PubMed:9705830, ECO:0000312|HGNC:HGNC:4556}

**Function**

Essential antioxidant peroxidase that directly reduces phospholipid hydroperoxide even if they are incorporated in membranes and lipoproteins (By similarity). Can also reduce cholesterol hydroperoxide and thymine hydroperoxide (By similarity). Plays a key role in protecting cells from oxidative damage by preventing membrane lipid peroxidation (By similarity). Required to prevent cells from ferroptosis, a non-apoptotic cell death resulting from an iron- dependent accumulation of lipid reactive oxygen species (PubMed:<a href="http://www.uniprot.org/citations/24439385" target="\_blank">24439385</a>). 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 (By similarity). 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 (By similarity). May be required to protect cells from the toxicity of ingested lipid hydroperoxides (By similarity). Required for normal sperm development and male fertility (By similarity). Essential for maturation and survival of photoreceptor cells (By similarity). 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 (By similarity). Plays a role of glutathione peroxidase in platelets in the arachidonic acid metabolism (PubMed:<a href="http://www.uniprot.org/citations/11115402" target="\_blank">11115402</a>). Reduces hydroperoxy ester lipids formed by a 15-lipoxygenase that may play a role as down- regulator of the cellular 15-lipoxygenase pathway (By similarity). Can reduce fatty acid-derived hydroperoxides (PubMed:<a href="http://www.uniprot.org/citations/11115402" target="\_blank">11115402</a>, PubMed:<a href="http://www.uniprot.org/citations/36608588" target="\_blank">36608588</a>). Can also reduce small soluble hydroperoxides such as H2O2, cumene hydroperoxide and tert-butyl hydroperoxide (PubMed:<a href="http://www.uniprot.org/citations/17630701" target="\_blank">17630701</a>, PubMed:<a href="http://www.uniprot.org/citations/36608588" target="\_blank">36608588</a>).

**Cellular Location**

[Isoform Mitochondrial]: Mitochondrion {ECO:0000250|UniProtKB:O70325}

**Tissue Location**

Present primarily in testis. Expressed in platelets (at protein level) (PubMed:11115402).

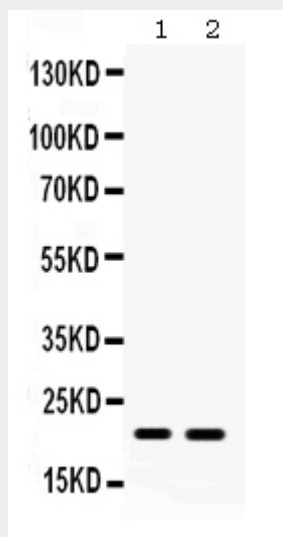
**Anti-GPX4 Picoband Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

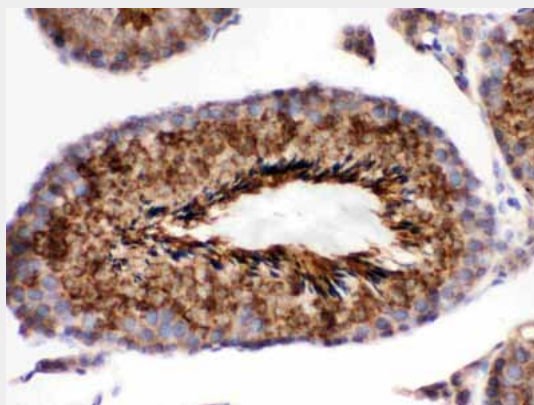
- [Western Blot](#)

- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

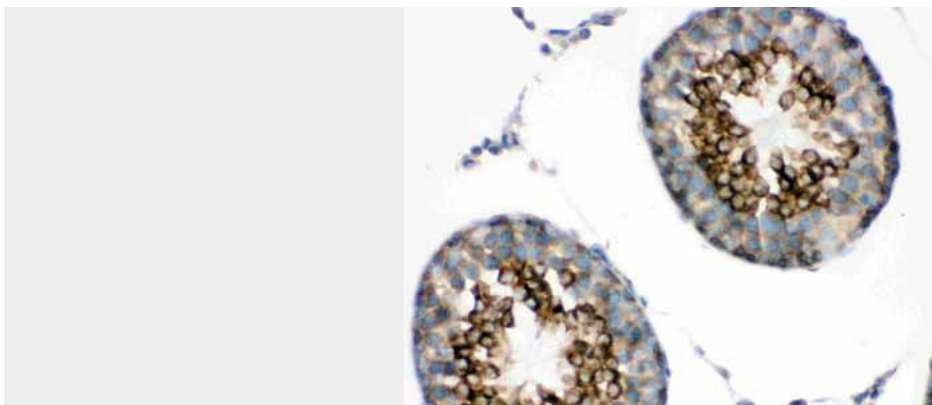
## Anti-GPX4 Picoband Antibody - Images



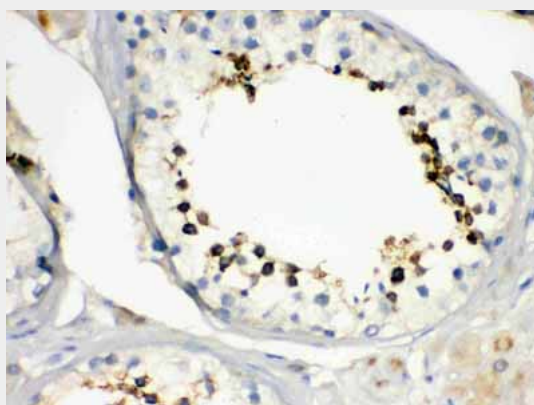
Anti- GPX4 Picoband antibody, ABO12311, Western blotting  
All lanes: Anti GPX4 (ABO12311) at 0.5ug/ml  
Lane 1: Rat Testis Tissue Lysate at 50ug  
Lane 2: Mouse Testis Tissue Lysate at 50ug  
Predicted bind size: 22KD  
Observed bind size: 22KD



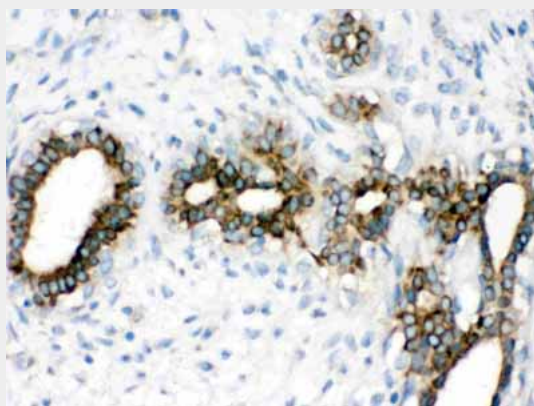
Anti- GPX4 Picoband antibody, ABO12311, IHC(P)  
IHC(P): Mouse Testis Tissue



Anti- GPX4 Picoband antibody, ABO12311, IHC(P)IHC(P): Rat Testis Tissue



Anti- GPX4 Picoband antibody, ABO12311, IHC(P)IHC(P): Human Testis Tissue



Anti- GPX4 Picoband antibody, ABO12311, IHC(P)IHC(P): Human Mammary Cancer Tissue

#### **Anti-GPX4 Picoband Antibody - Background**

Glutathione peroxidase 4, also known as GPX4, is an enzyme that in humans is encoded by the GPX4 gene. This gene encodes a member of the glutathione peroxidase protein family. Glutathione peroxidase catalyzes the reduction of hydrogen peroxide, organic hydroperoxide, and lipid peroxides by reduced glutathione and functions in the protection of cells against oxidative damage. Human plasma glutathione peroxidase has been shown to be a selenium-containing enzyme and the UGA codon is translated into a selenocysteine. The encoded protein has been identified as a moonlighting protein based on its ability to serve dual functions as a peroxidase as well as a structural protein in mature spermatozoa. Through alternative splicing and transcription initiation, rat produces proteins that localize to the nucleus, mitochondrion, and cytoplasm. In humans, alternative transcription initiation and the cleavage sites of the mitochondrial and nuclear transit

peptides need to be experimentally verified. Alternative splicing results in multiple transcript variants.