

Glutathione Peroxidase 4 Antibody (Clone 1H11)
Mouse Monoclonal Antibody
Catalog # ABV11175**Specification**

Glutathione Peroxidase 4 Antibody (Clone 1H11) - Product Information

Application	IP
Primary Accession	P36969
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG1

Glutathione Peroxidase 4 Antibody (Clone 1H11) - Additional Information**Gene ID** 2879

Positive Control	WB and IP: HL60 cell lysate
Application & Usage	IP: 1-2 µl, ELISA.

Other Names

Phospholipid hydroperoxide glutathione peroxidase, mitochondrial, GPX4

Target/Specificity

Glutathione Peroxidase 4

Antibody Form

Liquid

Appearance

Colorless liquid

Formulation

100 µl of antibody in HEPES with 0.15 M NaCl, 0.01 % BSA, 0.03 % sodium azide, and 50 % glycerol

Handling

The antibody solution should be gently mixed before use.

Reconstitution & Storage

-20 °C

Background Descriptions**Precautions**

Glutathione Peroxidase 4 Antibody (Clone 1H11) is for research use only and not for use in diagnostic or therapeutic procedures.

Glutathione Peroxidase 4 Antibody (Clone 1H11) - 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:24439385). 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:11115402). 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:11115402, PubMed:36608588). Can also reduce small soluble hydroperoxides such as H₂O₂, cumene hydroperoxide and tert-butyl hydroperoxide (PubMed:36608588, PubMed:17630701).

Cellular Location

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

Tissue Location

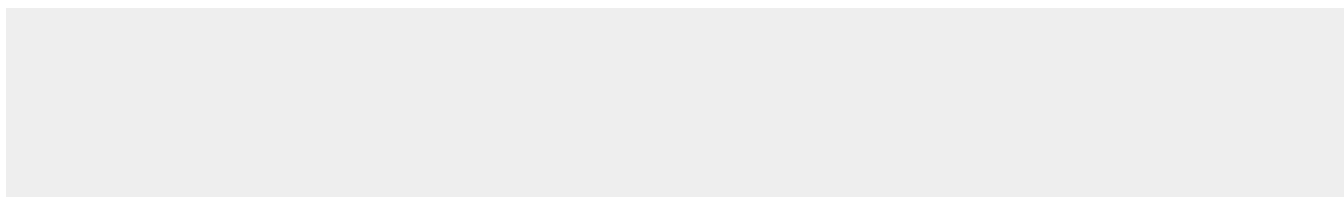
Present primarily in testis. Expressed in platelets (at protein level) (PubMed:11115402).

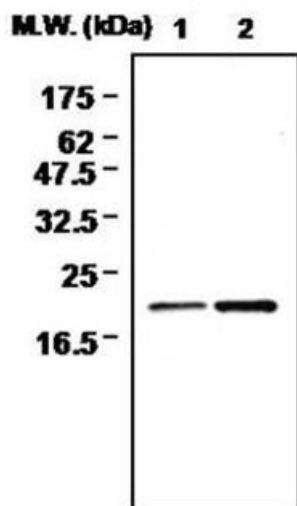
Glutathione Peroxidase 4 Antibody (Clone 1H11) - Protocols

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](#)

Glutathione Peroxidase 4 Antibody (Clone 1H11) - Images





IP analysis of HL60 cell lysates. Lane 1: Input, Lane 2: Precipitated sample

Glutathione Peroxidase 4 Antibody (Clone 1H11) - Background

Glutathione peroxidases (Gpxs) are ubiquitously expressed proteins which catalyze the reduction of hydrogen peroxides and organic hydroperoxides by glutathione. There are several isoforms which differ in their primary structure and localization. The classical cytosolic /mitochondrial GPx1 (cGPx) is a selenium-dependent enzyme, first of the GPx family to be discovered. GPx2, also known as gastrointestinal GPx (GI-GPx), is an intracellular enzyme expressed only at the epithelium of the gastrointestinal tract. Extracellular plasma GPx (pGPx or GPx3) is mainly expressed by the kidney from where it is released into the blood circulation. Phospholipid hydroperoxide GPx4 (PH-GPx) expressed in most tissues, can reduce many hydroperoxides including hydroperoxides integrated in membranes, hydroperoxy lipids in low density lipoprotein or thymine. All mammalian GPx family members, except for the recently described Cys containing GPx3 and epididymis-specific secretory GPx (eGPx or GPx5) isoforms, possess selenocysteine at the active site.