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Datasheet for 600-401-972

Glutathione Peroxidase 4 Antibody

Overview

Description:	Anti-Glutathione Peroxidase 4 (GPX4) (RABBIT) Antibody - 600-401-972
Item No.:	600-401-972
Size:	100 µg
Applications:	ELISA, WB
Reactivity:	Mouse, Rat, Guinea Pig
Host Species:	Rabbit

Product Details

Background:	This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. Glutathione Peroxidase 4 (GPx4, also known as PHGPx) functions as an antioxidant and also plays a role in redox regulation, sexual maturation, inflammation, apoptosis, and differentiation. GPx4 was found to have an important role in preventing lipid peroxidation, and has been discussed primarily as the glutathione peroxidase protecting biomembranes against oxidative stress. GPx4 can react with free hydrogen peroxide as well as with a wide range of lipid hydroperoxides, including those derived from cholesterol and cholesteryl esters. GPx4 is the only GPx to use phospholipid hydroperoxides as substrates. It can also reduce thymine hydroperoxide. In contrast to GPx1 and GPx3, GPx4 can use a wide range of reducing substrates in addition to glutathione. GPx4 is expressed in high levels in testes, suggesting a role in male fertility. It has also been identified as an enzymatically inactive structural protein of the mitochondrial capsule of sperm.
Synonyms:	rabbit anti-Gpx4 antibody, rabbit anti-glutathione peroxidase 4/Gpx4 antibody, rabbit anti-glutathione peroxidase 4 antibody, PHGPx antibody, Phospholipid hydroperoxide glutathione peroxidase antibody, Gpx-4, Gpx 4
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	Gpx4

Reactivity:	Mouse, Rat, Guinea Pig
Immunogen Type:	Conjugated Peptide
Immunogen:	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to amino acids near the carboxyl terminus of mouse GPx4 protein.
Purity/Specificity:	This affinity purified antibody is directed against mouse GPx4 protein. The product was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with GPx4 protein from mouse, rat and guinea pig based on 100% homology with the immunizing sequence. Cross-reactivity with human GPx4 is also predicted based on a 94% homology with the immunizing sequence. Reactivity against homologues from other sources is not known.
Relevant Links:	• NCBI - 13508533 • UniProtKB - O70325 • GeneID - 625249

Application Details

Tested Applications:	ELISA, WB
Application Note:	This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 19 kDa in size corresponding to GPx4 protein by western blotting in the appropriate cell lysate or extract.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:7,000 - 1:30,000
IHC:	User Optimized
WB:	1:500 - 1:3,000

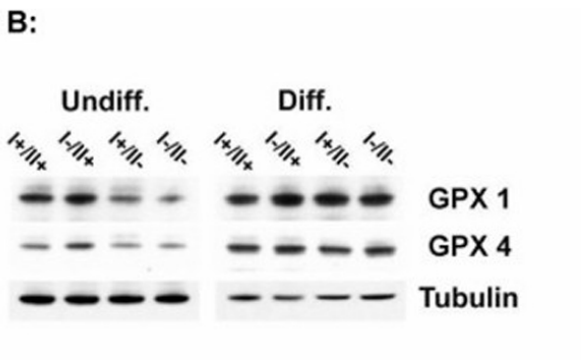
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.15 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

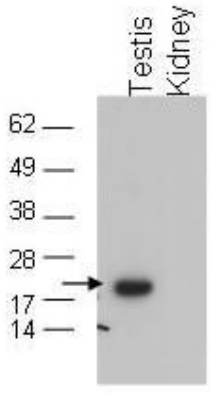
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Western Blot
Mitochondrial and cellular antioxidant defenses. (B) Glutathione peroxidases 1 and 4 (GPX 1, GPX 4). Fig. 6.
PMID: 35714845



Western Blot
Western blot using Rockland's affinity purified anti-GPx4 to detect GPx4 in testis extract (arrow). Tissue extract (40 µg) was electrophoresed and transferred to nitrocellulose. The membrane was probed with the primary antibody at a 1:1,000 dilution. Personal Communication, Dolph Hatfield, CCR-NCI, Bethesda, MD.

References

- Flierl A et al. The mitochondrial adenine nucleotide transporters in myogenesis. *Free Radic Biol Med.* (2022)

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