

Recombinant Human GPX4 Protein, His-tagged

Cat. No. GPX4-01H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human GPX4 protein (1-170) with a N-terminal His-tag was expressed in E. coli strain C321.ΔA.exp.
Species	Human
Source	E.coli
ProteinLength	1-170
Description	The protein encoded by this gene belongs to the glutathione peroxidase family, members of which catalyze the reduction of hydrogen peroxide, organic hydroperoxides and lipid hydroperoxides, and thereby protect cells against oxidative damage. Several isozymes of this gene family exist in vertebrates, which vary in cellular location and substrate specificity. This isozyme has a high preference for lipid hydroperoxides and protects cells against membrane lipid peroxidation and cell death. It is also required for normal sperm development; thus, it has been identified as a 'moonlighting' protein because of its ability to serve dual functions as a peroxidase, as well as a structural protein in mature spermatozoa. Mutations in this gene are associated with Sedaghatian type of spondylometaphyseal dysplasia (SMDS). This isozyme is also a selenoprotein, containing the rare amino acid selenocysteine (Sec) at its active site. Sec is encoded by the UGA codon, which normally signals translation termination. The 3' UTRs of selenoprotein mRNAs contain a conserved stem-loop structure, designated the Sec insertion sequence (SECIS) element, that is necessary for the recognition of UGA as a Sec codon, rather

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than as a stop signal. Transcript variants resulting from alternative splicing or use of alternate promoters have been described to encode isoforms with different subcellular localization.

Form	50 mM potassium phosphate buffer, pH 7.6, with 0.1 mM DTT and 5% glycerol
Molecular Mass	21.2 kDa
Purity	≥65% estimated by SDS-PAGE
Unit Definition	One unit is defined as the amount of enzyme required to produce 1 μmol of NADP ⁺ per minute at 25 centigrade in 50 mM Tris-HCl, pH 7.6, with 5 mM EDTA, 1 mM GSH, 0.076 units glutathione reductase, and 263 μM NADPH
Applications	Enzyme Activity, WB, ELISA
Stability	≥ 1 year
Storage	Store at -80 centigrade

GENE INFORMATION

Gene Name	GPX4 glutathione peroxidase 4 [Homo sapiens (human)]
Official Symbol	GPX4
Synonyms	GPX4; glutathione peroxidase 4; MCSP; SMDS; GPx-4; PHGPx; snGPx; GSHPx-4; snPHGPx; phospholipid hydroperoxide glutathione peroxidase; epididymis secretory sperm binding protein; phospholipid hydroperoxidase; phospholipid hydroperoxide glutathione peroxidase, mitochondrial; sperm nucleus glutathione peroxidase

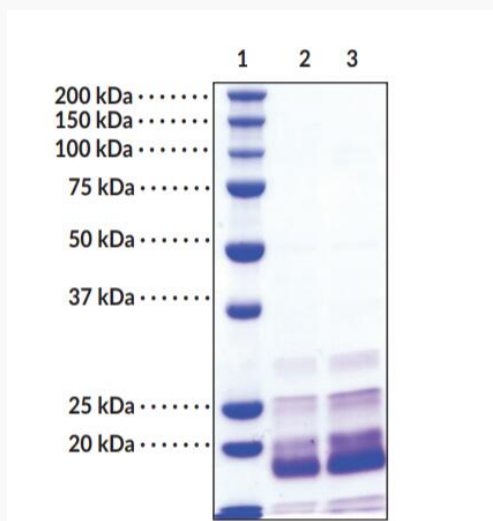
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Gene ID	2879
mRNA Refseq	NM_001039847
Protein Refseq	NP_001034936
MIM	138322
UniProt ID	P36969

SDS-PAGE Analysis of GPX4

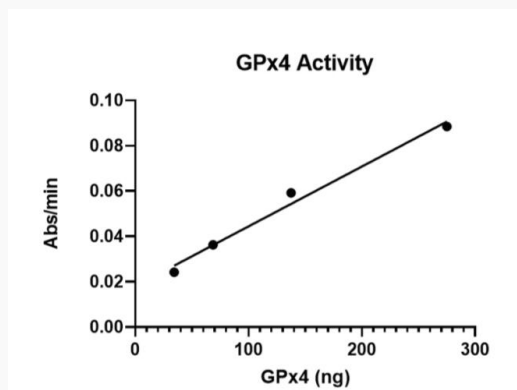


Lane 1: MW Markers, Lane 2: GPX4 (2 μ g), Lane 3: GPX4 (4 μ g), SDS-PAGE analysis of GPX4. Representative gel image shown; actual purity may vary between each batch.

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GPX4 activity was determined using our Glutathione Peroxidase Assay Kit.

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