

Recombinant Human GPX4 Protein

Cat. No. GPX4-23H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human Glutathione Peroxidase 4 (Non-tagged; 170 residues)

Species Human

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 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.

Purity ≥ 95% as judged by gel analysis

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Unit Definition	1 U of enzyme consumes 1 μ mol GSH per min in a Glutathione Reductase-coupled GPx assay containing 1 mM GSH, 0.5 mM Cumene Hydroperoxide, 15 nM Human Glutathione Reductase and 0.3 mM NADPH in TE buffer (50 mM Tris-HCl, 2 mM EDTA, pH 7.5)
Applications	Glutathione Reductase-coupled GPx assay; Inhibitor screening; etc.
Notes	Centrifuge the tube briefly before opening the lid
Storage	Store at -20 centigrade upon delivery.
Concentration	1 mg/mL
Storage Buffer	25 mM Tris-HCl (pH 8.0) with 250 mM KCl, 2 mM 2-Mercaptoethanol and 10% glycerol.
Shipping	Shipped in cold pack by courier service.

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; snPHGP; phospholipid hydroperoxide glutathione peroxidase; epididymis secretory sperm binding protein; phospholipid hydroperoxidase; phospholipid hydroperoxide glutathione peroxidase, mitochondrial; selenoprotein GPX4; sperm nucleus glutathione peroxidase; EC 1.11.1.12
Gene ID	2879

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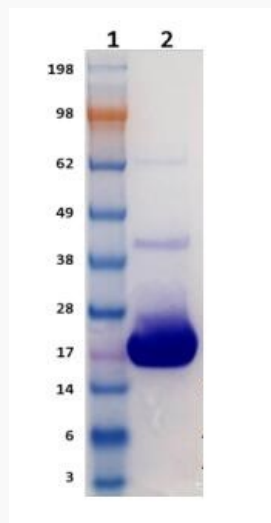
mRNA Refseq [NM_002085](#)

Protein Refseq [NP_002076](#)

MIM [138322](#)

UniProt ID [P36969](#)

**Coomassie stained
SDS PAGE analysis
of HGPX4 product**



Lane 1: Molecular weight marker

Lane 2: HGPX4

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