Recombinant Human GPX4 Protein, 170 residues

Cat. No. GPX4-21H **Lot. No.** (See product label)

SPECIFICATION

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

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Purity	≥ 95% as judged by gel analysis
Unit definition	1 U of enzyme consumes 1 μmol 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.
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. Store at -20 centigrade upon delivery.
References	1. Cheng Q, Arnér ES. (2017) Selenocysteine Insertion at a Predefined UAG Codon in a Release Factor 1 (RF1)-depleted Escherichia coli Host Strain Bypasses Species Barriers in Recombinant Selenoprotein Translation. J Biol Chem. 292:5476-5487.

GENE INFORMATION

Gene Name	GPX4 glutathione peroxidase 4 [Homo sapiens (human)]
Official Symbol	GPX4
Synonyms	GPX4; glutathione peroxidase 4; glutathione peroxidase 4 (phospholipid hydroperoxidase); phospholipid hydroperoxide glutathione peroxidase, mitochondrial; MCSP; PHGPx; phospholipid hydroperoxidase; sperm nucleus glutathione

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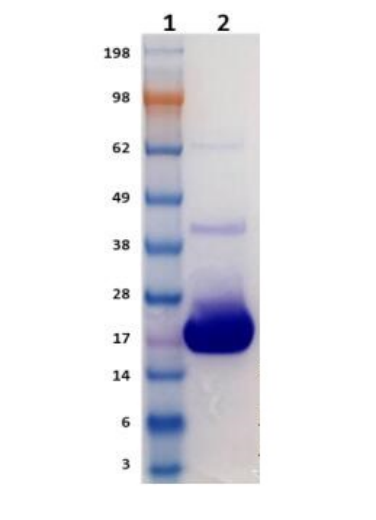
	peroxidase; GPx-4; snGPx; GSHPx-4; snPHGPx
Gene ID	2879
mRNA Refseq	NM_001039847
Protein Refseq	NP_001034936
MIM	138322
UniProt ID	P36969
Coomassie stained SDS PAGE analysis of 30 µg HGPX4.	 Lane 1: Molecular weight marker (SeeBlue Plus2) Lane 2: HGPX4

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