

Recombinant Human GPX4 Protein, Flag-tagged

Cat. No. GPX4-1895H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human GPX4 Protein with a Flag tag was expressed in E. coli.

Species Human

Source E.coli

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

Molecular Mass	~ 20.6 kDa, reducing conditions
AA Sequence	SMCASRDDWRCARSMHEFSAKDIDGHMVNLDKYRGFVCIVTNVASQCCKTEVNYT QLVDLHARYAECGLRILAFPCNQFGKQEPGSNEEIKEFAAGYNVKFDMSKICVNGD DAHPLWKWMKIQPKGKGILGNAIKWNFTKFLIDKNGCVVKRYGPMEEPLVIEKDLPH YFDYKDDDDK
Endotoxin	< 1 EU/μg
Purity	>90%, by SDS-PAGE
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Concentration	0.15 mg/mL
Storage Buffer	Supplied as a 0.2 μm filtered solution in 30 mM Tris, 300mM NaCl, pH 9.0

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; 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
SDS-PAGE	12% reducing SDS-PAGE analysis of purified hGPX4-flag (~ 2 µg protein loaded)

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