

Phospholipid hydroperoxide glutathione peroxidase, mitochondrial (GPX4) Recombinant Protein | GPX4 recombinant protein

Recombinant Human Phospholipid hydroperoxide glutathione peroxidase, mitochondrial (GPX4) , partial

CATALOG # AAA113267	HOST E Coli or Yeast or Baculovirus or Mammalian Cell
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PRODUCT SYNONYMS

Phospholipid hydroperoxide glutathione peroxidase; mitochondrial (GPX4); Recombinant Human Phospholipid hydroperoxide glutathione peroxidase; partial; GPX4 recombinant protein

PRODUCT SPECIFICATIONS

Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE.
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Sequence Positions	29-197aa(U73S); Partial
Sequence	CASRDDWRCA RSMHEFSAKD IDGHMVNLDK YRGFVCIVTN VASQSGKTEV NYTQLVDLHA RYAECLRLIL AFPCNQFGKQ EPGSNEEIKE FAAGYNVKFD MFSKICVNGD DAHPLWKWMK IQPKGKGILG NAIKWNFTKF LIDKNGCVVK RYGPMEEPLV IEKDLPHYF
Species	Human
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.

IMAGES

10	20	30	40	50
MSLGRLCRL	KPALLOGALA	APGLAGTMCA	SRDDWRCARS	MHEFSAKDID
60	70	80	90	100
GHMVNLDKTR	GFVCIVTNVA	SQCKTEVINY	TQLVDLHARY	AECGLRILAF
110	120	130	140	150
PCNQFGKQEP	GSNEEIKEFA	AGYNVKFDMF	SKICVNGDDA	HPLWKWMKIQ
160	170	180	190	
PKGKGILGNA	IKWNFTKFLI	DKNGCVVKRY	GPMEEPLVIE	KDLPHYF

Sequence

The amino acid at the 73 site is 'U' in UniProt (yellow highlighted with red arrow, reference P36969) and has been mutated to 'S' to manufacture the AAA113267 GPX4 recombinant protein. This is because 'U' selenocysteine, which is encoded by UGA, is normally used as a stop codon in prokaryotic cells,. The stop codon leads to early termination of translation. Hence the lab mutates 'U' at the 73 site to 'S' for protein expression. Additional information: Selenocysteine is a derivative of serine. Selenocysteine and cysteine as well as serine are highly similar. The lab typically mutates 'U' to serine for protein expression because mutating 'U' to cysteine may result in the formation of additional disulfide bonds, potentially affecting the expression and structure of the protein.

ADDITIONAL INFORMATION

Related Product Information for GPX4 recombinant protein	Glutathione peroxidase catalyzes the reduction of hydrogen peroxide, organic hydroperoxide, and lipid peroxides by reduced glutathione and functions in the protection of cells against oxidative damage. Human plasma glutathione peroxidase has been shown to be a selenium-containing enzyme and the UGA codon is translated into a selenocysteine. Through alternative splicing and transcription initiation, rat produces proteins that localize to the nucleus, mitochondrion, and cytoplasm. In humans, experimental evidence for alternative splicing exists; alternative transcription initiation and the cleavage sites of the mitochondrial and nuclear transit peptides need to be experimentally verified.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	90903238
NCBI GeneID	2879
NCBI Accession #	NP_001034936.1
NCBI GenBank Nucleotide #	NM_001039847.2
UniProt Accession #	P36969; O43381; Q6PJ59; Q9UPK2
Molecular Weight	19,525 Da
NCBI Official Full Name	phospholipid hydroperoxide glutathione peroxidase, mitochondrial isoform B
NCBI Official Synonym Full Names	glutathione peroxidase 4
NCBI Official Symbol	GPX4
NCBI Official Synonym Symbols	MCSP; SMDS; GPx-4; PHGPx; snGPx; GSHPx-4; snPHGPx
NCBI Protein Information	phospholipid hydroperoxide glutathione peroxidase, mitochondrial; phospholipid hydroperoxide glutathione peroxidase
UniProt Protein Name	Phospholipid hydroperoxide glutathione peroxidase
UniProt Gene Name	GPX4
UniProt Synonym Gene Names	GSHPx-4

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.