

## Product datasheet for **SC126725**

### Glutathione Peroxidase 1 (GPX1) (NM\_201397) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Glutathione Peroxidase 1 (GPX1) (NM_201397) Human Untagged Clone
Symbol:	Glutathione Peroxidase 1
Synonyms:	GPXD; GSHPX1
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_201397, the custom clone sequence may differ by one or more nucleotides

ATGTGTGCTGCTCGGCTAGCGGCGGCGGCGGCGGCCAGTCGGTGTATGCCTTCTCGGCGGCCCCG  
TGGCCGGCGGGGAGCCTGTGAGCCTGGGCTCCCTGCGGGGCAAGGTACTACTTATCGAGAATGTGGCGTC  
CCTCTGAGGCACCACGGTCCGGGACTACACCCAGATGAACGAGCTGCAGCGGCGCCTCGGACCCCGGGG  
CTGGTGGTGTCTCGGCTTCCCGTGCAACCAAGTTGGGCATCAGGTGCGCCGGGCGGAGCGGGCGGGCGG  
GGCGGACGTGCAGTAG

#### 5' Read Nucleotide Sequence:

>OriGene 5' read for NM\_201397 unedited  
CCTGTTCAAGATTTGTAATACGACTCACTTATAGGGCGGCCGCGATTTCGGCACGAGGGGC  
GCTCCGCTGGCTTCTTGGACAATTGCGCCATGTGTGCTGCTCGGCTAGCGGCGGCGGCGG  
CCCAGTCGGTGTATGCCTTCTCGGCGGCCCCGCTGGCCGGCGGGGAGCCTGTGAGCCTGG  
GCTCCCTGCGGGGCAAGGTACTACTTATCGAGAATGTGGCGTCCCTCTGAGGCACCACGG  
TCCGGGACTACACCCAGATGAACGAGCTGCAGCGGCGCCTCGGACCCCGGGGCTGGTGG  
TGCTCGGCTTCCCGTGCAACCAAGTTGGGCATCAGGAGAACGCCAAGAACGAAGAGATT  
TGAATTCCTCAAGTACGTCCGGCCTGGTGGTGGTTTCGAGCCCAACTTCATGCTTTCG  
AGAAGTGCAGGTTGAACGGTGCAGGGGCGCACCCCTCTTTCGCTTCTCGGGGAGGCC  
TGCCAGCTCCCAGCGACGACGCCACCGCCTTATGACCGACCCCAAGCTCATCACCTGGT  
CTCCGGTGTGTCGAACGATGTTGCCTGGAACCTTGGAGAAGTTCTGGTGGGCCCTGACG  
GTGTGCCCTACGCAGGTACAGCCGCGCTTCCAGACATTGACATCGAGCCTGACATCG  
AAGCCCTGCTGTCTCAAGGGCCAGCTGTGCCTAGGGCGCCCTCCTACCCCGGTGCTT  
GGCAGTTGCAGTGTGCTGTCTCGGNGGGTTTTTCATCTATGAAGGTGTTTCTCTAAAC  
CTACGAGGGGAGGACACCCTGATCTTACANGAAATACCACCTCGAGATGGGCTGCTGGTC  
CTGTTGATCCCAGTCTCTGCCAGACCAAGCCGAAGTTTCCCACTATAAAGTGGCGGTNTG  
CCAGCAAACAAAAAC



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<b>Restriction Sites:</b>	NotI-NotI
<b>ACCN:</b>	NM_201397
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP). The expression of this clone is not guaranteed due to the nature of selenoproteins.
<b>OTI Annotation:</b>	This clone encodes a selenoprotein containing the rare amino acid selenocysteine (Sec). Sec is encoded by UGA codon, which normally signals translational termination. Expression of this clone is not guaranteed due to the nature of selenoproteins.
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_201397.1</a> , <a href="#">NP_958799.1</a>
<b>RefSeq Size:</b>	1200 bp
<b>Locus ID:</b>	2876
<b>Cytogenetics:</b>	3p21.31
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Amyotrophic lateral sclerosis (ALS), Arachidonic acid metabolism, Glutathione metabolism, Huntington's disease

**Gene Summary:**

The protein encoded by this gene belongs to the glutathione peroxidase family, members of which catalyze the reduction of organic hydroperoxides and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) by glutathione, and thereby protect cells against oxidative damage. Other studies indicate that H<sub>2</sub>O<sub>2</sub> is also essential for growth-factor mediated signal transduction, mitochondrial function, and maintenance of thiol redox-balance; therefore, by limiting H<sub>2</sub>O<sub>2</sub> accumulation, glutathione peroxidases are also involved in modulating these processes. Several isozymes of this gene family exist in vertebrates, which vary in cellular location and substrate specificity. This isozyme is the most abundant, is ubiquitously expressed and localized in the cytoplasm, and whose preferred substrate is hydrogen peroxide. It 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. This gene contains an in-frame GCG trinucleotide repeat in the coding region, and three alleles with 4, 5 or 6 repeats have been found in the human population. The allele with 4 GCG repeats has been significantly associated with breast cancer risk in premenopausal women. Alternatively spliced transcript variants have been found for this gene. Pseudogenes of this locus have been identified on chromosomes X and 21. [provided by RefSeq, Aug 2017]

Transcript Variant: This variant (2) retains an intron, which causes a frameshift compared to variant 1. The resulting isoform (2) has a shorter and distinct C-terminus compared to isoform 1.