

Product datasheet for **RG221176**

Glutathione Peroxidase 1 (GPX1) (NM_201397) Human Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Glutathione Peroxidase 1 (GPX1) (NM_201397) Human Tagged ORF Clone
Symbol: GPX1
Synonyms: GPXD; GSHPX1
Vector: pCMV6-AC-GFP (PS100010)
E. coli Selection: Ampicillin (100 ug/mL)
Cell Selection: Neomycin
ORF Nucleotide Sequence: >RG221176 representing NM_201397
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGTGTGCTGCTCGGCTAGCGGGCGGGCGGGCGGCCAGTCGGTGTATGCCTTCTCGGCGGCCCGC
TGGCCGGCGGGGAGCCTGTGAGCCTGGGCTCCCTGCGGGCAAGTACTACTTATCGAGAATGTGGCGTC
CCTCTGAGGCACCACGGTCCGGGACTACACCCAGATGAACGAGCTGCAGCGGCCCTCGACCCCGGGGC
CTGGTGGTGTCTCGGCTTCCCGTGCAACCAAGTTTGGGCATCAGGTGCGCCGGCGGAGCGGGCGGGCGG
GGCGGACGTGCAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >RG221176 representing NM_201397
Red=Cloning site Green=Tags(s)
MCAARLAAAAAAQSVYAFSARPLAGGEPVSLGSLRGKVLIIENVASL*GTTVRDYTMNELQRRLGPRG
LVVLGFPCNQFGHQVRRRAERGGAGADVQ

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

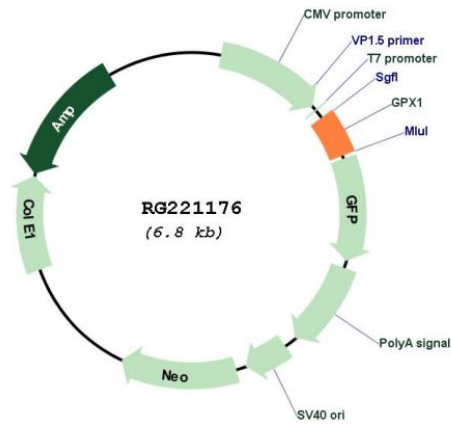


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Cloning Scheme:



Plasmid Map:



ACCN:

NM_201397

OTI Disclaimer:	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info The expression of this clone is not guaranteed due to the nature of selenoproteins.
OTI Annotation:	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.
Components:	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).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.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.
RefSeq:	NM_201397.3
RefSeq Size:	1200 bp
RefSeq ORF:	297 bp
Locus ID:	2876
Cytogenetics:	3p21.31
Protein Families:	Druggable Genome
Protein Pathways:	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 (H₂O₂) by glutathione, and thereby protect cells against oxidative damage. Other studies indicate that H₂O₂ is also essential for growth-factor mediated signal transduction, mitochondrial function, and maintenance of thiol redox-balance; therefore, by limiting H₂O₂ 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]