

## Product datasheet for **RR200393**

### Gpx4 (NM\_017165) Rat Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Gpx4 (NM\_017165) Rat Tagged ORF Clone  
**Symbol:** Gpx4  
**Synonyms:** gpx-4; Gshpx-4; Phgpx; snGpx  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Cell Selection:** Neomycin  
**ORF Nucleotide Sequence:** >RR200393 representing NM\_017165  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCCGATCGCC

ATGAGCTGGGGCCGCTCTGAGCCGCTTATTGAAGCCAGCACTGCTGTGCGGGGCTCTGGCTGTGCCTGGCC  
TGGCTGGCACCATGTGTGCATCCCCGATGATTGGCGCTGTGCGCGCTCCATGCACGAATTCGCAGCCAA  
GGACATCGATGGGCACATGGTTTGCCTGGATAAGTACAGGGGTTGCGTGTGCATCGTCACCAACGTGGCC  
TCGCAATGAGGCAAACCGACGTAAACTACACTCAGTAGTCGATCTGCATGCCCGATACGCCGAGTGTG  
GTTTACGAATCCTGGCCTTCCCTTGAACCAAGTTCGGGAGGCAGGAGCCAGGAAGTAATCAAGAAATCAA  
GGAGTTTGCAGCCGGCTACAATGTCAGTTTGACATGTACAGCAAGATCTGTGTAATGGGGACGATGCC  
CACCCACTGTGGAATGGATGAAAGTCCAGCCCAAGGGCAGGGGCATGCTGGGAAATGCCATCAAATGGA  
ACTTTACCAAGTTTCTCATTGATAAGAACGCTGCGTGGTGAAGCGCTATGGTCCCATGGAGGAGCCCCA  
GGTGATAGAGAAGGACCTGCCGTGCTATCTC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >RR200393 representing NM\_017165  
Red=Cloning site Green=Tags(s)

MSWGRLSRLKPLLALCGALAVPGLAGTMCASRDDWRCARSMHEFAAKDIDGHMVCLDKYRGCVCIVTNVA  
 SQ\*GKTDVNYTQLVDLHARYAECGLRILAFPCNQFGRQEPGSNQEIKEFAAGYNVRFDMYSKICVNGDDA  
 HPLWKWMKVQPKGRGMLGNAIKWNFTKFLIDKNGCVVKRYGPMEEPQVIEKDLPCYL

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:** Sgfl-MluI

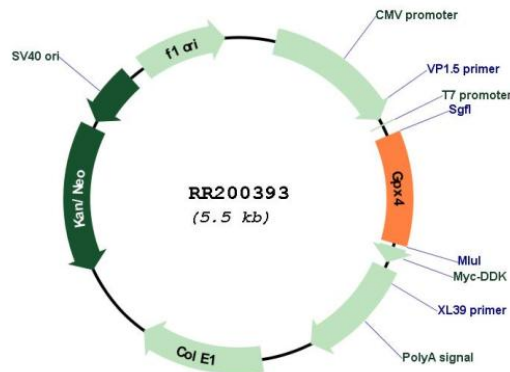


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**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_017165

**ORF Size:** 591 bp

**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.

<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_017165.4</a>
<b>RefSeq Size:</b>	923 bp
<b>RefSeq ORF:</b>	594 bp
<b>Locus ID:</b>	29328
<b>UniProt ID:</b>	<a href="#">P36970</a>
<b>Cytogenetics:</b>	7q11
<b>MW:</b>	22.2 kDa
<b>Gene Summary:</b>	<p>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. Disruption of this gene in mouse spermatocytes is associated with male infertility. 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. Pseudogenes of this locus have been identified on chromosomes 1, 10 and 14. [provided by RefSeq, Jan 2019]</p>