

## Product datasheet for **RR204828**

### Gpx2 (NM\_183403) Rat Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Gpx2 (NM\_183403) Rat Tagged ORF Clone  
**Symbol:** Gpx2  
**Synonyms:** GPX-GI; GSHPx-2; GSHPx-GI  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**ORF Nucleotide Sequence:** >RR204828 representing NM\_183403  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGCTTACATCGCCAAGTCTTTTTACGATCTCAGTGCCATCGGCCTGGATGGGGAGAAGATAGACTTCA  
 ACACGTTCCGAGGCAGGGCCGTGCTGATTGAGAATGTGGCCTCGCTCTGAGGAACAACACTCCCGGGACTA  
 CACCCAGCTCAATGAGTTGCAGTGCCGCTTTCCAGGCGCCTAGTGGTCTCGGCTTCCCTTGCAACCAG  
 TTCGGACATCAGGAGAAGTGTGAGAATGAGGAGATCCTGAACAGCCTCAAGTATGTCCGCCCTGGGGGTG  
 GGTTCCAGCCACCTTCAGTCTTACCCAAAAGTGTGATGTCATGAGGAGGAGATCAGCATCTGTCTTTGC  
 CTACCTGAAAGACAAGCTGCCCTACCCCTTATGACGACCCATTCTCCCTCATGACCGATCCCAAGCTCATC  
 ATATGGAGTCCGGTGCGCCGCTCAGATGTGCTCCTGGAACTTTGAGAAGTTCCTCATAGGGCCAGAAGGGG  
 AGCCTTCCGTCGCTACAGCCGACCTTCCAGACCATCAACATCGAGCCTGACATCAAACGTCTCTCAA  
 AGTTGCCATC

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >RR204828 representing NM\_183403  
 Red=Cloning site Green=Tags(s)

MAYIAKSFYDLSAIGLDGEKIDFNTRGRAVLIENVASL\*GTTTRDYTLNELQCRFPRLVVLGFPCNQ  
 FGHQENCQNEEILNSLKYYRPGGFQPTFSLTQKCDVNGQNQHPVFAYLKDKLPYPYDDPFLMTDPKLI  
 IWSPVRRSDVSWNFKFLIGPEGEPFRYSRTFQTINIEPDIKRLKVAI

**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:** SgfI-MluI



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**Cloning Scheme:**



**ACCN:** NM\_183403

**ORF Size:** 570 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.

**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:**
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\\_183403.2](#), [NP\\_899653.2](#)

**RefSeq Size:** 1028 bp

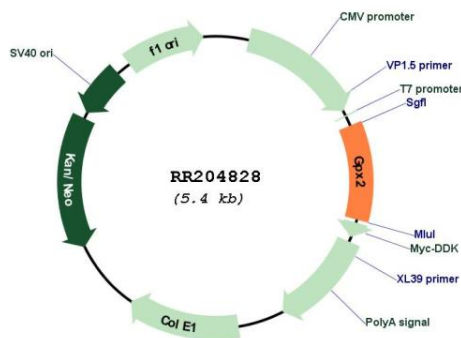
**RefSeq ORF:** 573 bp

**Locus ID:** 29326

**Cytogenetics:** 6q24  
**MW:** 21.9 kDa

**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. Several isozymes of this gene family exist in vertebrates, which vary in cellular location and substrate specificity. This isozyme is predominantly expressed in the gastrointestinal tract in rodents, is localized in the cytoplasm, and whose preferred substrate is hydrogen peroxide. Knockout studies in mice lacking this gene suggest a role for this isozyme in intestinal inflammation and colon cancer development. 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. Pseudogenes of this locus have been identified on chromosomes 2 and X. [provided by RefSeq, Aug 2017]

**Product images:**



Circular map for RR204828