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Product datasheet for MC215240

Gpx4 (NM_001037741) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Gpx4 (NM_001037741) Mouse Untagged Clone
Symbol:	Gpx4
Synonyms:	GPx-4; GSHPx-4; mtPHG; mtPHGPx; PHG; PHGPx; sn; snGPx
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

Fully Sequenced ORF:

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>MC215240 representing NM_001037741
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGGCCGCGCGGCCGCCCGCAAGCGGGGACGCTGCAGACAGCGCGGCGGATCCCCGAGAGGCCGGCGAC
GCCGTGGACCTGGACGCCAAAGTCCTAGGAAACGCCCGGGCCCTCGGCGAAGGAAAGCGCGCGCGCGCCG
CCGCAGGAGGGCGCGCCCTCGCCGGATGGAGCCCATTCCTGAACCTTTCAACCCGGGGCCTCTGCTGCAA
GAGCCTCCCCAGTACTGCAACAGCTCCGAGTTCCTGGGCTTGTGTGCATCCCGCGATGATTGGCGCTGTG
CGCGCTCCATGCACGAATTCTCAGCCAAGGACATCGACGGGCACATGGTCTGCCTGGATAAGTACAGGGG
TTTCGTGTGCATCGTCACCAACGTGGCCTCGCAATGAGGCAAAACTGACGTAAACTACACTCAGCTAGTC
GATCTGCATGCCCGATATGCTGAGTGTGGTTTACGAATCCTGGCCTTCCCCTGCAACCAGTTTGGGAGGC
AGGAGCCAGGAAGTAATCAAGAAATCAAGGAGTTTGCAGCCGGCTACAACGTCAAGTTTGACATGTACAG
CAAGATCTGTGTAAATGGGGACGATGCCCACCCACTGTGGAAATGGATGAAAGTCCAGCCCAAGGGCAGG
GGCATGCTGGGAAATGCCATCAAATGGAACTTTACCAAGTTTCTCATTGATAAGAACGGCTGCGTGGTGA
AGCGCTATGGTCCCATGGAGGAGCCCCAGGTGATAGAGAAGGACCTGCCGTGCTATCTCTAG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA
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Restriction Sites:	SgfI-MluI
ACCN:	NM_001037741

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OTI Disclaimer:	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.
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_001037741.3, NP_001032830.2
RefSeq Size:	1028 bp
RefSeq ORF:	762 bp
Locus ID:	625249
UniProt ID:	O70325
Cytogenetics:	10 39.72 cM

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Gene Summary: 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 10 and 17. [provided by RefSeq, Jan 2019]
Transcript Variant: This variant (2) contains an alternate 5' terminal exon compared to variant 1. The resulting isoform (B) has a longer and a distinct N-terminus compared to isoform A. A similar isoform in rat (snGPx) has been reported to be localized in the sperm nucleus (PMID:11344099). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.

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