

Product datasheet for **RC214095**

Glutathione Peroxidase 4 (GPX4) (NM_001039848) Human Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Glutathione Peroxidase 4 (GPX4) (NM_001039848) Human Tagged ORF Clone
Symbol: GPX4
Synonyms: GPx-4; GSHPx-4; MCSP; PHGPx; SMD5; snGPx; snPHGPx
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
Cell Selection: Neomycin
ORF Nucleotide Sequence: >RC214095 representing NM_001039848
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGGCCGCGGGCGCAGGCTCCCCGGGCGCCGAGGCAGCGGTGCCAGAGCCGGGGCAGCGGGCGGC
CGCGAGCCCTCGGCGGGGAAGGCCAGCCAGCGTGCAGGCGCAGGAGGGCGCGCGCCGGCGGAAGAAGCC
CTGTCCCCGAGCTTGCAGCCGAGATCCACGAATGTCCAAGTCCCAGGACCCGTGCGCGTCCCAGGAC
GACTGGCGCTGTGCGCGCTCCATGCACGAGTTTTCCGCCAAGGACATCGACGGGCACATGGTTAACCTGG
ACAAGTACCGGGGCTTCGTGTGCATCGTACCAACGTGGCCTCCAGTGAGGCAAGACCGAAGTAACTA
CACTCAGCTCGTGCACCTGCACGCCGATACGCTGAGTGTGGTTTGCAGTCTTCCGCTTCCCGTGTAA
CAGTTCGGGAAGCAGGAGCCAGGAGTAACGAAGAGATCAAAGAGTTCGCCGCGGGCTACAACGTCAAAT
TCGATATGTTAGCAAGATCTGCGTGAACGGGACGACGCCACCCGCTGTGGAAGTGGATGAAGATCCA
ACCAAGGGCAAGGCATCCTGGGAAATGCCATCAAGTGAACCTACCAAGTTCCTCATCGACAAGAAC
GGCTGCGTGGTGAAGCGCTACGGACCCATGGAGGAGCCCTGGTATAGAGAAGGACCTGCCCACTATT
TC

ACGCGTACGCGGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC214095 representing NM_001039848
Red=Cloning site Green=Tags(s)

MGRAGAGSPGRRRQRCQSRGRRRPRAPRRRKAPACRRRRARRRRKPCPRSLRPEIHECPKSQDPCASRD
DWRCARSMHEFSAKDIDGHMVNLDKYRGFVCIITNVASQ*GKTEVNYTQLVDLHARYAECGLRILAFPCN
QFGKQEPGSNEEIKEFAAGYNVFKDFMSKICVNGDDAHLWKMKIQPKGKILGNAIKWNFTKFLIDKN
GCVVKRYGPMEEPLVIEKDLPHYF

TRTRPLEQKLISEEDLAANDILDYKDDDDKV



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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:	<u>NM_001039848.4</u>
RefSeq Size:	1031 bp
RefSeq ORF:	705 bp
Locus ID:	2879
Cytogenetics:	19p13.3
Protein Families:	Druggable Genome
Protein Pathways:	Arachidonic acid metabolism, Glutathione metabolism
Gene Summary:	<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. Mutations in this gene are associated with Sedaghatian type of spondylometaphyseal dysplasia (SMDS). 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. [provided by RefSeq, Dec 2018]</p>