

Product datasheet for **TR316568**

Glutathione Peroxidase 4 (GPX4) Human shRNA Plasmid Kit (Locus ID 2879)

Product data:

| | |
|---------------------------|---|
| Product Type: | shRNA Plasmids |
| Product Name: | Glutathione Peroxidase 4 (GPX4) Human shRNA Plasmid Kit (Locus ID 2879) |
| Locus ID: | 2879 |
| Synonyms: | GPx-4; GSHPx-4; MCSP; PHGPx; SMDS; snGPx; snPHGPx |
| Vector: | pRS (TR20003) |
| E. coli Selection: | Ampicillin |
| Mammalian Cell Selection: | Puromycin |
| Format: | Retroviral plasmids |
| Components: | GPX4 - Human, 4 unique 29mer shRNA constructs in retroviral untagged vector(Gene ID = 2879). 5µg purified plasmid DNA per construct 29-mer scrambled shRNA cassette in pRS Vector, TR30012, included for free. |
| RefSeq: | NM_001039847 , NM_001039848 , NM_002085 , NM_002085.1 , NM_002085.2 , NM_002085.3 , NM_002085.4 , NM_001039847.1 , NM_001039847.2 , NM_001039848.1 , NM_001039848.2 , NM_001039848.3 , BC039849 , BC039849.1 , BC010157 , BC011836 , BC021567 , BC022071 , BC032695 , BC046163 , BC058329 , BM764133 , NM_001367832 , NM_001039847.3 , NM_001039848.4 , NM_002085.5 |
| UniProt ID: | P36969 |



[View online »](#)

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. 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]

shRNA Design:

These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact techsupport@origene.com. If you need a special design or shRNA sequence, please utilize our [custom shRNA service](#).

Performance Guaranteed:

OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.

For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at techsupport@origene.com. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).