

Product Name: KD-Validated Glutathione Peroxidase 1 Recombinant Rabbit Monoclonal Antibody

Catalog #: KVA00784

For research use only.

Summary

Description	KO&KD-Validated antibody
Host	Rabbit
Application	WB,FCM,ICC
Reactivity	Human,Rat
Conjugation	Unconjugated
Modification	Unmodified
Isotype	Rabbit IgG
Clonality	Rabbit mAb
Form	Liquid
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Supplied in PBS (pH 7.4) containing 50% glycerol, and 0.02% sodium azide.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:1,000-1:5,000; FC 1:200-1:2,000; ICC 1:100-1:1,000
Molecular Weight	Calculated MW: 22.1kDa

Antigen Information

Gene Name	GPX1
Alternative Names	GPX1; Glutathione Peroxidase 1; Cellular Glutathione Peroxidase; Selenoprotein GPX1; EC 1.11.1.9; GSHPx-1; EC 1.11.1; GSHPX1; GPx-1; GPXD
Gene ID	2876.0
SwissProt ID	P07203
Immunogen	A synthesized peptide derived from human Glutathione Peroxidase 1

Background

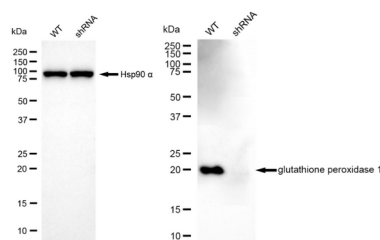
The protein encoded by this gene belongs to the glutathione peroxidase family, members of which catalyze the reduction of organic hydroperoxides and hydrogen peroxide (H₂O₂) by glutathione, and thereby protect cells against oxidative damage.

Other studies indicate that H₂O₂ is also essential for growth-factor mediated signal transduction, mitochondrial function, and maintenance of thiol redox-balance; therefore, by limiting H₂O₂ accumulation, glutathione peroxidases are also involved in modulating these processes. Several isozymes of this gene family exist in vertebrates, which vary in cellular location and substrate specificity. This isozyme is the most abundant, is ubiquitously expressed and localized in the cytoplasm, and whose preferred substrate is hydrogen peroxide. It 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. This gene contains an in-frame GCG trinucleotide repeat in the coding region, and three alleles with 4, 5 or 6 repeats have been found in the human population. The allele with 4 GCG repeats has been significantly associated with breast cancer risk in premenopausal women. Alternatively spliced transcript variants have been found for this gene. Pseudogenes of this locus have been identified on chromosomes X and 21. [provided by RefSeq, Aug 2017]

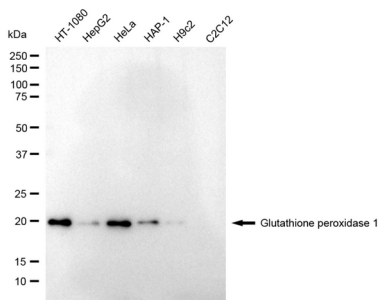
Research Area

Signal Transduction,Cell Biology,Cancer,Metabolism

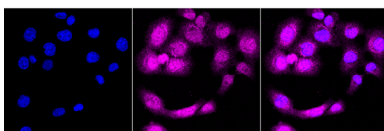
Image Data



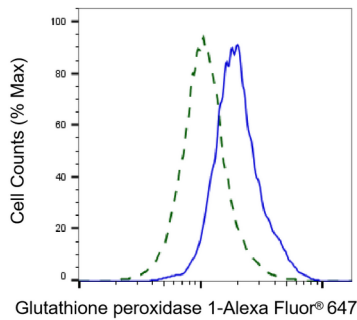
Western blotting analysis using glutathione peroxidase 1 antibody (KVA00784). Glutathione peroxidase 1 expression in wild type (WT) and glutathione peroxidase 1 (GPX1) shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with glutathione peroxidase 1 antibody (KVA00784, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



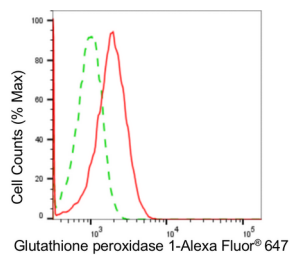
Western blotting analysis using glutathione peroxidase 1 antibody (KVA00784). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with glutathione peroxidase 1 antibody (KVA00784, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



Immunocytochemical staining of HT-1080 cells with Glutathione peroxidase 1 antibody (KVA00784, 1:1,000). Nuclei were stained blue with DAPI; Glutathione peroxidase 1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 µm.



Validation of Glutathione peroxidase 1 knockdown using flow cytometry. Wild-type(WT, Blue) and knockdown(KD, Green) HeLa cells were stained with Glutathione peroxidase 1 antibody (KVA00784, 1:2,000) and analyzed using BD flow cytometer.



Flow cytometric analysis of glutathione peroxidase 1 expression in HT-1080 cells using glutathione peroxidase 1 antibody (KVA00784, 1:2,000). Green, isotype control; red, glutathione peroxidase 1.