

Active Recombinant Human GSR protein

Cat. No. GSR-29083TH **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human GSR Purified from E.coli expressing the human Glutathione Reductase gene (44-522aa with additional 3 amino acids-GSH at N-term)
Species	Human
Source	E.coli
ProteinLength	44-522 a.a.
Description	Glutathione reductase (GR) is a member of pyridine nucleotide-disulfide oxidoreductases, which includes the closely related enzymes thioredoxin reductase, lipoamide dehydrogenase, trypanothione reductase and mercuric ion reductase. GR is a cytoplasmic flavoenzyme widely distributed in aerobic organisms. The dimeric protein is composed of two identical subunits, each containing 1 FAD and 1 redox-active disulfide/dithiol as components of the catalytic apparatus. It plays a role in maintaining glutathione (GSH) in its reduced form by catalyzing the reduction of glutathione disulfide (GSSG): $GSSG + NADPH + H^+ \rightleftharpoons 2GSH + NADP^+$ In most eukaryotic cells, GR maintains the ratio of $[GSH]/[GSSG]$ elevated, and participates in several vital functions such as the detoxification of reactive oxygen species as well as protein and DNA biosynthesis.
Form	Lyophilized from 20mM HEPES, pH 7.5

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Bio-activity	19.4U/mg
Molecular Mass	51.7 kDa
Purity	> 95% by SDS-PAGE
Unit Definition	One unit will reduce 1μmole of oxidized glutathione per min at pH 7.5 at 25 centigrade
Storage	Shipped at 4 centigrade. Store at -20 centigrade. After reconstitution, store at -80 centigrade and avoid frequent freeze and thaw.

GENE INFORMATION

Gene Name	GSR glutathione reductase [Homo sapiens]
Official Symbol	GSR
Synonyms	GSR; glutathione reductase; glutathione reductase, mitochondrial; GR; GRase; MGC78522;
Gene ID	2936
mRNA Refseq	NM_000637
Protein Refseq	NP_000628
MIM	138300
UniProt ID	P00390

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Chromosome Location	8p21.1
Pathway	Glutathione metabolism, organism-specific biosystem; Glutathione metabolism, organism-specific biosystem; Glutathione metabolism, conserved biosystem; Metabolism, organism-specific biosystem; Metabolism of nucleotides, organism-specific biosystem; Oxidative Stress, organism-specific biosystem; Selenium Pathway, organism-specific biosystem;
Function	NADP binding; electron carrier activity; flavin adenine dinucleotide binding; glutathione binding; glutathione-disulfide reductase activity; oxidoreductase activity; protein homodimerization activity;

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