ACTIVE PROTEIN



Glutathione Reductase (Human)

Background: 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 cytoplasmic flavoenzyme widely distributed in aerobic organisms. The dimeric protein is composed of two identical subunits, each containing 1 FAD and 1 disulfide/dithiol redox-active 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⁺ \Leftrightarrow 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 (2). **Source**: Purified from *E.coli* expressing the

human Glutathione reductase gene

Molecular Weight: 51.7 kDa

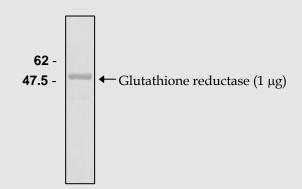
Packaging size: 10 U

Specific activity: 50 U/mg

(Unit definition : One unit will reduce 1µmole of oxidized glutathione per min at pH 7.5 at 25°C)

Concentration: 1.0 mg/ml

Storage: Glutathione reductase is supplied with a vial of storage buffer (20mM HEPES, pH 7.5/ 10% glycerol). Store at -80°C.



Background Reference:

- (1) Carlberg, I. and Mannervik, B. (1985) *J. Biol. Chem.* **261**: 1629-1635.
- 2) Picaud, T. and Desbois, A. (2002) *J. Biol. Chem.* **277**: 31715-31721.

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