

Glutathione reductase from E. coli, Recombinant

Cat. No. NATE-1574

Lot. No. (See product label)

Introduction

Description

Glutathione reductase (GR) is a crucial flavoenzyme in the antioxidant defense system. Reduced glutathione (GSH) is used by glutathione peroxidase to detoxify hydrogen peroxide and in the process is converted to oxidized glutathione (GSSG). The GSSG is then recycled back to GSH by glutathione reductase (GR) using NADPH that is then converted to NADP⁺. The regenerated GSH is then available to detoxify more hydrogen peroxide. The enzyme uses FAD as a cofactor. GR and glutathione peroxidase may inhibit lipid peroxidation by functioning as antioxidant enzymes in sperm. Glutathione reductase shares a structural motif with a number of other proteins including aspartyl proteases, Citrate synthase, EF hands, hemoglobins, lipocalins, and α/β hydrolases. GR is stimulated by melatonin and is reportedly irreversibly inhibited by a number of oxygen radical generating systems.

Synonyms

GR; glutathione reductase; glutathione reductase (NADPH); NADPH-glutathione reductase; GSH reductase; GSSG reductase; NADPH-GSSG reductase; glutathione S-reductase; NADPH:oxidized-glutathione oxidoreductase

Product Information

Species	E. coli
Source	E. coli
Form	3.2 M ammonium sulphate
EC Number	EC 1.8.1.7
CAS No.	9001-48-3
Molecular Weight	49.5 kDa
Purity	>95% as judged by SDS-PAGE
Activity	35 U/mg protein, 98 U/ml.
Optimum pH	7.5
Optimum temperature	25 °C
Unit Definition	One Unit of glutathione reductase was defined as the amount of enzyme responsible for the oxidation of 1 μ mole of NADPH at 25 °C and pH 7.5.

Storage and Shipping Information

Storage	Glutathione reductase should be stored at 4 °C or and will remain stable up to 3 years if stored as specified.
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