

[Ann Clin Lab Sci.](#) 1978 Jan-Feb;8(1):23-9.

Glutathione reductase in the red blood cells.

[Chang JC](#), [van der Hoeven LH](#), [Haddox CH](#).

Abstract

Glutathione reductase plays an important role in protecting hemoglobin, red cell enzymes, and biological cell membranes against oxidative damage by increasing the level of reduced glutathione (GSSGR) in the process of aerobic glycolysis. The enzyme deficiency may result in mild to moderately severe hemolytic anemia upon exposure to certain drugs or chemicals. However, hereditary deficiency of the enzyme is extremely rare. Recent studies on glutathione reductase in the red cell have shown more insight in the understanding of red cell metabolism and interactions with other enzymes, especially glucose-6-phosphate dehydrogenase (G-6-PD). Glutathione reductase in serum may be a source of error in any clinical laboratory test in which an enzyme activity is determined indirectly by measuring the change in reduced nicotinamide-adenine dinucleotide (NADH) or reduced nicotinamide adenine dinucleotide phosphate (NADPH) absorbance. Glutathione reductase levels are reduced in banked blood when citrate-phosphate-dextrose (CPD) is used as a preservative. Reviewed is the role of glutathione reductase in the metabolism of the red cell and its clinical implication and usefulness.

PMID: 623427 [PubMed - indexed for MEDLINE]