Catalog No. LF-P0006

ACTIVE PROTEIN

Thioredoxin 2 (Human, W/O MLS)

Background : Thioredoxins (Trx) are small, multi-functional proteins with oxidoreductase activity and are ubiquitous in essentially all living cells. Trx contains a redox-active disulfide/dithiol group within the conserved Cys-Gly-Pro-Cys active site. The two cysteine residues in the conserved active centers can be oxidized to form intramolecular disulfide bonds (1). Reduction of the active site disulfide in oxidized Trx is catalyzed by Trx reductase with NADPH as the electron donor. The reduced Trx is a hydrogen donor for ribonucleotide reductase, the essential enzyme for DNA synthesis, and a potent general protein disulfide reductase with numerous functions in growth and redox regulations (2). Specific protein disulfide targets for reduction by Trx include protein disulfide –isomerase (PDI) (3) and a number of transcription factors such as p53 (4), NF-kB (5) and AP-1 (T1-151). Trx is also capable of removing H_2O_2, particularly when it is coupled with either methionine sulfoxide reductase or several isoforms of peroxiredoxins (6-7).

Source : Purified from *E.coli* expressing the human thioredoxin 2 gene (without mitochondrial leader sequence)

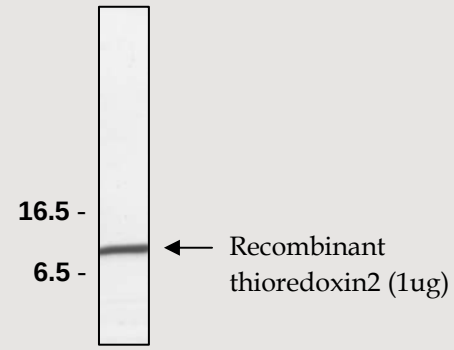
Molecular Weight : 12 kDa

Packaging size : 1 U

Specific activity : 9.7 U/mg
(Unit definition : One unit will cause a ΔA_{650} of 1.0 in 1 min at 25°C in the insulin reduction assay)

Concentration : 1.0 mg/ml

Storage : Thioredoxin 2 is supplied with a vial of storage buffer (20mM HEPES, pH7.0/ 10% Glycerol). Store at -80°C.



Background Reference:

1) Andoh, T. et al. (2002) J.Biol.Chem. 277, 9655-9660
2) Arner, E. S. and Holmgren, A. (2000) Eur. J. Biochem. 267, 6102-6109.
3) Lundstrom, J. and Holmgren, A. (1990) J. Biol. Chem. 265, 1994-9120.
4) Nordberg, J. and Arner, E. S. J. (2001) Free Radic. Biol. Med. 31, 1287-1312
5) Matthews, J. R. et al. (1992) Nucleic Acids Res. 20, 3821-3830.
6) Wei, S. J. (2000) Cancer Res. 60, 6688-6695.
7) Chae, H. Z. (1999) Methods Enzymol. 300, 219-226.

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