Catalog No. LF-P0021

ACTIVE PROTEIN

Thioredoxin Reductase 1
(mutant : Selcys498cys) (Human)

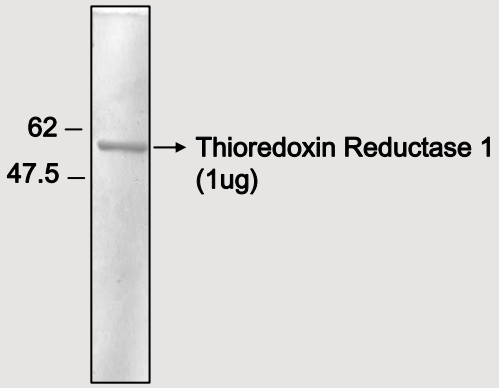
Background: The mammalian thioredoxin reductases (TrxRs) are a family of selenocysteine-containing pyridine nucleotide-disulfide oxido-reductases. All the mammalian TrxRs are homologous to glutathione reductase with respect to primary structure including the conserved redox catalytic site (-Cys-Val-Asn-Val-Gly- Cys-) . However, they are distinct with a C-terminal extension containing a catalytically active enultimate selenocysteine (SeCys) residue in the conserved sequence(-Gly-Cys-SeCys- Gly). Each monomer in the homodimeric protein TrxR includes an FAD prosthetic group, a NADPH binding site and a redox catalytic site. Electrons are transferred from NADPH and the active-site disulfide to C-terminal SeCys-containing redox center. Then this reduces substrates like thioredoxin. The members of TrxR family range from 55 to 58 kilodalton in molecular size and are composed of three isoforms. Such isoforms include cytosolic TrxR1, mitochondrial TrxR2, and TrxR3, also known as Trx and GSSG reductase (TGR). TrxR plays a key role in protection of cells against oxidative stress and is part of the redox-regulatory mechanism of transcription factors and various biological phenomena

Molecular Weight : 54.7kDa

Packaging size : 0.5 mg

Concentration : 1.0 mg/ml

Storage : Thioredoxin Reductase 1 is supplied with a vial of storage buffer (20mM HEPES, pH7.0 / 1mM EDTA). Store at -80°C.



Background Reference :

1) Mustacich, D. and Powis,G. (2000) Biochem J. 15. 346 Pt 1:1-8.

Source : Purified from *E.coli* expressing the human thioredoxin reductase 1 gene

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