Thioredoxin from *E. coli*, recombinant, overexpressed in *E. coli*

Product Number T 0910
Storage Temperature –20 °C

CAS# 52500-60-4
GenBank Accession Number M26133

**Product Description**

Thioredoxin from *E. coli* has a molecular weight of approximately 11.7 kDa (SDS-PAGE). The active site of thioredoxin contains two vicinal cysteine residues having the amino acid sequence Cys-Gly-Pro-Cys. In the reduced form two sulfhydryl groups are present and when oxidized they form a disulfide bridge. The thioredoxin system includes thioredoxin, which is reduced by thioredoxin reductase with NADPH that serves as the hydrogen donor.

Thioredoxin is implicated in ribonucleotide reduction,¹ in assimilatory sulfate reduction,² and in a regulatory scheme involving oxidation and reduction of protein sulfhydryl groups.³ It has been shown to be required for filamentous phage assembly in vivo⁴ and it catalyzes refolding of various proteins.⁵

The product is supplied as an essentially salt-free, lyophilized powder,

Purity: minimum 90% (SDS-PAGE)

Specific Activity: minimum 3 units/mg protein

Unit definition: One unit will cause a ΔA₆₅₀ of 1.0 in 1 minute at pH 7.5 at 25 °C in the insulin reduction assay. Thioredoxin activity is assessed in an insulin reduction assay, based on the formation of reduced insulin, which precipitates in the presence of a fixed amount of dithiothreitol and suitable amounts of thioredoxin. Precipitation of reduced insulin is monitored by an increase in absorbance at 650 nm.

**Precautions and Disclaimer**

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

**Preparation Instructions**

The product is soluble in water (1 mg/ml), yielding a clear, colorless solution.

**Storage/Stability**

It is recommended to store the product at –20 °C. Thioredoxin from *E. coli* was found to be stable after 16 hours at 50 °C in both the lyophilized and reconstituted forms. It was also stable after 96 hours at 37 °C.

**References**


GY/TA/MAM 10/02