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## Product Information

### Thioredoxin from *Spirulina species*

Product Number **T 3658**  
Storage Temperature 2-8 °C

CAS# 52500-60-4

#### Product Description

Thioredoxin is protein with a molecular weight of approximately 12 kDa and two redox-active cysteine residues in an exposed active center. It is a dithiol protein that functions as an efficient disulfide reductant. In the reduced form two sulfhydryl groups are present and when oxidized they form a disulfide bridge. Thioredoxin is present in many different prokaryotes and eukaryotes, and appears to be truly ubiquitous in all living cells. It has been implicated in a variety of physiological roles including serving as a hydrogen donor for the reduction of ribonucleotides or activation of enzymes. In green plant cells, thioredoxin has been recognized as part of the light dependent regulatory system in photosynthesis capable of turning on and off the activity of key chloroplast enzymes.

This product is supplied as a lyophilized powder containing approximately 70% protein (Lowry) in potassium phosphate buffer salts.

Specific activity: 1.5-6 A<sub>650</sub> units/mg protein

Unit definition: One unit will cause a  $\Delta A_{650}$  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 (2 mg/ml).

#### Storage/Stability

It is recommended to store the product desiccated at 2-8 °C. The product as supplied is stable for 2 years when stored properly.

#### References

1. Holmgren, A., Thioredoxin catalyzes the reduction of insulin disulfides by dithiothreitol and dihydrolipoamide. J. Biol. Chem., **254**, 9627-9632 (1979).

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