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Product Information

Anti-Thioredoxin
produced in rabbit, IgG fraction of antiserum

Catalog Number **T0803**

Product Description

Anti-Thioredoxin is produced in rabbit using repeated injections of thioredoxin from *E. coli* as immunogen. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum which is essentially free of other rabbit serum proteins.

Anti-Thioredoxin is specific for thioredoxin when tested by dot blot immunoassay using recombinant thioredoxin and immunoblotting using an *E. coli* extract.

This antibody may be used to study thioredoxin in various immunoassays, including immunoblotting, dot blot immunoassay, and Ouchterlony double diffusion.

Thioredoxin is a small electron transport protein that serves as the hydrogen donor in the enzymatic reduction of ribonucleotides to deoxyribonucleotides.[1] The thioredoxin system consists of thioredoxin, thioredoxin-reductase and NADPH. This system is involved in other reductive processes such as the enzymatic reduction of methionine sulfoxide and sulfate.[2] Thioredoxin from *E. coli* consists of a single polypeptide chain of 108 amino acids with a molecular weight of 11,700.[3] The oxidation-reduction function of thioredoxin is linked to a single intra-molecular disulfide bridge, forming a 14 member ring. The protein contains no prosthetic group or bound metals. The gene encoding *E. coli* thioredoxin has been cloned into several plasmids and serves as a fusion partner for the expression of other cloned genes. The system is particularly useful for high level production of soluble fusion proteins in the *E. coli* cytoplasm. In many cases, these fusion proteins fold correctly and thus display full biological activity.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. After use, the remainder of the product may be stored as aliquots at –20 °C. Prolonged storage and repeated freezing and thawing is not recommended.

Product Profile

Dot Blot: a minimum dilution of 1:5,000 was determined by indirect dot blot using 50 ng thioredoxin/dot and Anti-Rabbit IgG- Peroxidase, Cat. No. A0545, as the second antibody.

Immunoblot: a minimum dilution of 1:5,000 was determined by indirect immunoblotting using whole cell *E. coli* extract and Anti-Rabbit IgG- Alk.Phos., Cat. No. A9919, as the second antibody.

Ouchterlony Double Diffusion: a minimum titer of 1:8 was determined using 1% agarose, 5 µl of serially diluted antiserum is reacted against 5 µl of a 1-2 mg/ml solution of purified thioredoxin (well separation: 7.5 mm center to center). Titer is equivalent to the highest dilution of antiserum resulting in a visible precipitate after 24 hours.

Note :In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

References

1. Rechard, P., "The Biosynthesis of Deoxyribose", Ciba Lectures, Wiley and Sons, New York.
2. Gonzalez Poroque, P., et al., *J. Biol. Chem*., **245**, 2371 (1968).
3. Holmgren, A., *Eur. J. Biochem*., **6**, 475 (1968).

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