

Thioredoxin isoform 1 (Trx), Active, Human Recombinant

CATALOG NO: P1039-100 100 µg

ALTERNATE NAMES: Thioredoxin 1, TXN, TRX, TRX1

SOURCE: *E. coli*

SEQUENCE: Full-length Trx (130 amino acids) is fused with 6x His-Tag at N-terminal. The protein has a predicted MW of ~14.5 kDa.

PURITY: ≥95% by SDS-PAGE

MOL. WEIGHT: ~14.5 kDa (SDS-PAGE)

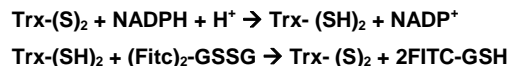
FORM: Lyophilized

FORMULATION: Centrifuge the vial prior to opening. Reconstitute in deionized water. This solution can be stored at 4°C for up to 2 months.

STORAGE CONDITIONS: After reconstitution, aliquot and store at 4°C and use within 2 months.

DESCRIPTION: Thioredoxin (Trx) is a disulfide reductase that reduces disulfide bonds into thiol groups through a thiol-disulfide exchange with its target proteins to regulate oxidative stress and redox signaling. Trx activity is dependent on NADPH and Thioredoxin Reductase's (TrxR) ability to reduce it at Cysteine 32 and Cysteine 35.

ENZYMATIC ACTIVITY: This enzyme has activity ≥20 mU/mg based on its ability to reduce FITC-labeled oxidized glutathione (FITC-GSSG-FITC) to FITC-labeled reduced glutathione (FITC-GSH).



UNIT DEFINITION: One unit is the amount of enzyme that will generate 1.0 µmole of FITC-GSH per minute at pH 7.3 at 25°C.

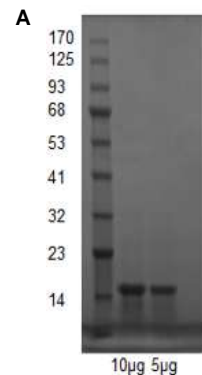


Fig. A: SDS-PAGE (4-20%) of Recombinant Trx: Recombinant Protein loaded under reducing conditions and stained with Coomassie Blue. The protein shows a predicted MW of ~ 14.5 kDa.

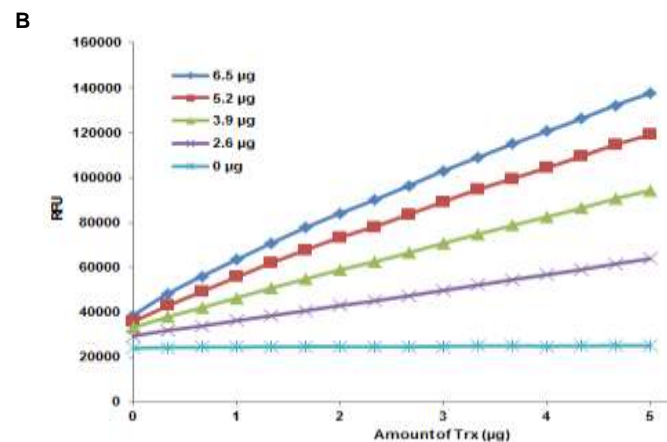


Fig B: Enzymatic activity of Trx: Trx reduction of Di-FITC-GSSG to FITC-GSH assay was performed in 26.5 mM potassium phosphate buffer, 1.5 mM EDTA, 1200 µU TrxR, and 610 µM NADPH. The reaction mix was incubated for 20 minutes at room temperature, which allows TrxR to reduce into Trx. Then Di-FITC-GSSG was added to the final concentration of 11.6 µM. FITC fluorescence was measured at 490/525 nm, which resulted in an activity curve with different amounts of Trx.

Related Products:

- Thioredoxin Reductase Activity Colorimetric Assay Kit (Cat. No. K763-100)
- Thioredoxin 1 Antibody (3A1) (Cat. No. 6166-100)
- Thioredoxin 2 Antibody (4C5) (Cat. No. 6167-100)
- Thioredoxin Reductase 1 (TXNRD1) Antibody (Cat. No. 7005-100)
- Thioredoxin Reductase 1 Antibody (19A1) (Cat. No. 6164-100)

