

## Thioredoxin/TRX Protein, Human, Recombinant

### General Information

Synonyms:	thioredoxin;TRDX;DKFZp686B1993;MGC61975;TXN;TRX1;RP11-427L11.1;TRX
Protein Construction:	A DNA sequence encoding the C-terminal segment of human TXN (P10599) (Met 1-Val 105) was expressed and purified. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P10599
Molecular Weight:	11.7 kDa (predicted); 14 kDa (reducing conditions)

### QC Testing

Biological Activity:	Measured by its ability to catalyze the reduction of insulin. The reaction leads to precipitation, which can be measured by absorbance at 650 nm. The specific activity is 5-10 A650/min/mg.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Thioredoxin, also known as ATL-derived factor, Surface-associated sulphhydryl protein, SASP and TXN, is a nucleus, cytoplasm and secreted protein that belongs to the thioredoxin family. Thioredoxins are proteins that act as antioxidants by facilitating the reduction of other proteins by cysteine thiol-disulfide exchange. Thioredoxins are found in nearly all known organisms and are essential for life in mammals. Thioredoxin / TXN participates in various redox reactions through the reversible oxidation of its active center dithiol to a disulfide and catalyzes

dithiol-disulfide exchange reactions. Thioredoxin / TXN plays a role in the reversible S-nitrosylation of cysteine residues in target proteins, and thereby contributes to the response to intracellular nitric oxide. Thioredoxin / TXN nitrosylates the active site Cys of CASP3 in response to nitric oxide (NO), and thereby inhibits caspase-3 activity. Thioredoxin / TXN induces the FOS/JUN AP-1 DNA-binding activity in ionizing radiation (IR) cells through its oxidation/reduction status and stimulates AP-1 transcriptional activity.

### Reference

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