

## Thioredoxin/TXN Protein, Human

<b>Cat. No.:</b>	HY-P73431A
<b>Synonyms:</b>	Thioredoxin; TXN; Trx; ADF; TRX1; SASP
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P10599 (M1-V105)
<b>Gene ID:</b>	7295
<b>Molecular Weight:</b>	Approximately 14 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>M V K Q I E S K T A      F Q E A L D A A G D      K L V V V D F S A T      W C G P C K M I K P</p> <p>F F H S L S E K Y S      N V I F L E V D V D      D C Q D V A S E C E      V K C M P T F Q F F</p> <p>K K G Q K V G E F S      G A N K E K L E A T      I N E L V</p>
<b>Biological Activity</b>	Measured by its ability to catalyze the reduction of insulin. The reaction leads to precipitation, which can be measured by absorbance at 650 nm and the specific activity is 5-10 A650/min/mg.
<b>Appearance</b>	Lyophilized powder
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	Thioredoxin/TXN Protein actively engages in diverse redox reactions, employing the reversible oxidation of its active center dithiol to form a disulfide bond, and catalyzes crucial dithiol-disulfide exchange reactions. Beyond its classical redox functions, Thioredoxin plays a pivotal role in the reversible S-nitrosylation of cysteine residues within target proteins, contributing to the cellular response to intracellular nitric oxide. Notably, it exerts regulatory control over caspase-3 activity by nitrosylating the active site cysteine of CASP3 in response to nitric oxide. Moreover, Thioredoxin demonstrates its influence on the FOS/JUN AP-1 DNA-binding activity in ionizing radiation cells, modulating AP-1 transcriptional activity
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through its oxidation/reduction status. Additionally, Thioredoxin is implicated in the augmentation of interleukin-2 receptor TAC (IL2R/P55) expression, highlighting its multifaceted role in cellular processes beyond redox regulation.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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