Thioredoxin/TRX Protein, Mouse (N-His)

Cat. No.:	HY-P73432A
Synonyms:	Thioredoxin; TXN; Trx; ADF; TRX1; SASP
Species:	Mouse
Source:	E. coli
Accession:	P10639 (M1-A105)
Gene ID:	22166
Molecular Weight:	Approximately 15 kDa

PROPERTIES

AA Sequence	M V K L I E S K E A F Q E A L A A A G D K L V V V D F S A T W C G P C K M I K P F F H S L C D K Y S N V V F L E V D V D D C Q D V A A D C E V K C M P T F Q F Y K K G Q K V G E F S G A N K E K L E A S I T E Y A
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 5.603 A650/min/mg, as measured under the described conditions.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	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.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Thioredoxin/TRX Protein is actively involved in diverse redox reactions, utilizing its active center dithiol to undergo reversible oxidation and disulfide formation, thereby catalyzing essential dithiol-disulfide exchange reactions. Beyond its classical redox functions, Thioredoxin plays a crucial role in the reversible S-nitrosylation of cysteine residues within target proteins, contributing to the cellular response to intracellular nitric oxide. Notably, it nitrosylates the active site cysteine of CASP3 in response to nitric oxide, effectively inhibiting caspase-3 activity. Moreover, Thioredoxin demonstrates regulatory influence over the FOS/JUN AP-1 DNA binding activity in ionizing radiation cells, modulating AP-1 transcriptional activity

through its redox state. Additionally, Thioredoxin is implicated in the augmentation of interleukin-2 receptor TAC (IL2R/P55) expression, underscoring its multifaceted role in cellular processes beyond redox regulation.

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