

Recombinant Rat Txnrd1 Protein, 499 residues

Cat. No. Txnrd1-14R **Lot. No.** (See product label)

SPECIFICATION

Product Overview Recombinant Rat Thioredoxin Reductase 1 (Non-tagged, 499 residues)

Species Rat

ProteinLength 499 residues

Description

The protein encoded by this gene belongs to the pyridine nucleotide-disulfide oxidoreductase family, and is a member of the thioredoxin (Trx) system. Three thioredoxin reductase (TrxR) isozymes are found in mammals. TrxRs are selenocysteine-containing flavoenzymes, which reduce thioredoxins, as well as other substrates, and play a key role in redox homeostasis. This gene encodes an ubiquitously expressed, cytosolic form of TrxR, which functions as a homodimer containing FAD, and selenocysteine (Sec) at the active site. Sec is encoded by UGA codon that normally signals translation termination. The 3' UTRs of selenoprotein mRNAs contain a conserved stem-loop structure, the Sec insertion sequence (SECIS) element, which is necessary for the recognition of UGA as a Sec codon rather than as a stop signal. Alternative splicing, primarily at the 5' end, results in transcript variants encoding same or different isoforms.

Purity ≥ 95% as judged by gel analysis

Unit definition 1 U of enzyme reduces 1 μmol DTNB per min in 0.5 mL standard DTNB assay containing 2.5 mM DTNB and 0.3 mM NADPH in TE buffer (50 mM Tris-HCl, 2 mM EDTA, pH 7.5)

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Applications	DTNB assay; Insulin-coupled Thioredoxin assay; Inhibitor screening; etc.
Notes	Centrifuge the tube briefly before opening the lid.
Concentration	1 mg/mL
Storage Buffer	TE buffer with 50% glycerol
Shipping	Shipped in cold pack by courier service. Store at -20 centigrade upon delivery.
References	<ol style="list-style-type: none"> 1. Cheng Q, Arnér ES. (2017) Selenocysteine Insertion at a Predefined UAG Codon in a Release Factor 1 (RF1)-depleted Escherichia coli Host Strain Bypasses Species Barriers in Recombinant Selenoprotein Translation. <i>J Biol Chem.</i> 292:5476-5487. 2. Arnér ES, Holmgren A. (2001) Measurement of thioredoxin and thioredoxin reductase. <i>Curr Protoc Toxicol.</i> Chapter 7:Unit 7.4.

GENE INFORMATION

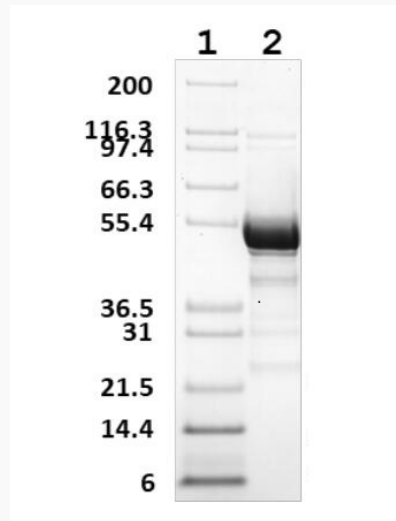
Gene Name	Txnrd1 thioredoxin reductase 1 [Rattus norvegicus]
Official Symbol	Txnrd1
Synonyms	TXNRD1; thioredoxin reductase 1; thioredoxin reductase 1, cytoplasmic; thioredoxin reductase TR1; selenoprotein oxidoreductase; NADPH-dependent thioredoxin reductase; Tr; MGC93353
Gene ID	58819
mRNA Refseq	NM_031614
Protein Refseq	NP_113802

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Coomassie stained
SDS PAGE analysis
of 10 µg RTRXR1.



Lane 1: Molecular weight marker (Mark12 Unstained Standard)

Lane 2: RTRXR1

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