Recombinant Human TXNRD2 Protein, 488 residues

Cat. No. TXNRD2-20H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human Thioredoxin Reductase 2 (Non-tagged; No signal peptide; 488 residues)
Species	Human
ProteinLength	488 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 homoeostasis. This gene encodes a mitochondrial form important for scavenging reactive oxygen species in mitochondria. It 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. Alternatively spliced transcript variants encoding different isoforms, including a few localized in the cytosol and some lacking the C-terminal Sec residue, have been found for this gene.
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

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	containing 2.5 mM DTNB and 0.3 mM NADPH in TE buffer (50 mM Tris-HCl, 2 mM EDTA, pH 7.5)
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	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. J Biol Chem. 292:5476-5487. 2. Arnér ES, Holmgren A. (2001) Measurement of thioredoxin and thioredoxin reductase. Curr Protoc Toxicol. Chapter 7:Unit 7.4

GENE INFORMATION

Gene Name	TXNRD2 thioredoxin reductase 2 [Homo sapiens (human)]
Official Symbol	TXNRD2
Synonyms	TXNRD2; thioredoxin reductase 2; thioredoxin reductase 2, mitochondrial; selenoprotein Z; thioredoxin reductase beta; TR; TR3; TRXR2; thioredoxin reductase 3; thioredoxin reductase TR3; SELZ; TR-BETA
Gene ID	10587

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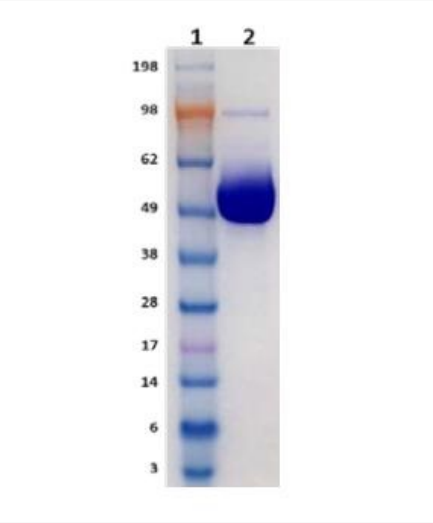
mRNA Refseq	NM_006440
Protein Refseq	NP_006431
MIM	606448
UniProt ID	Q9NNW7
Coomassie stained SDS PAGE analysis of 10 µg HTRXR2.	 Lane 1: Molecular weight marker (SeeBlue Plus2) Lane 2: HTRXR2

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