# Recombinant human Thioredoxin Reductase 1/TXNRD1 protein

Catalog Number: ATGP0570

## PRODUCT INFORMATION

**Expression system**
E.coli

**Domain**
161-647aa

**UniProt No.**
Q16881

**NCBI Accession No.**
NP_001087240.1

**Alternative Names**
GRIM 12, KDRF, KM 102 derived reductase like factor, MGC9145, Oxidoreductase, Thioredoxin reductase, Thioredoxin reductase 1, Thioredoxin reductase 1 cytoplasmic, Thioredoxin reductase 1 Gene associated with retinoid IFN induced mortality 12 protein, Thioredoxin reductase GRIM 12, TR, TR 1, TRXR 1, TXNR, TXNRD 1

## PRODUCT SPECIFICATION

**Molecular Weight**
55.7 kDa (508aa) confirmed by MALDI-TOF

**Concentration**
0.5mg/ml (determined by Bradford assay)

**Formulation**
Liquid in. Phosphate-Buffered Saline (pH 7.4) containing 20% glycerol

**Purity**
> 95% by SDS-PAGE

**Endotoxin level**
< 1 EU per 1ug of protein (determined by LAL method)

**Biological Activity**
Specific activity is > 15unit/mg, and was measured in a coupled assay with 5,5 -Dithiobis(2-nitrobenzoic acid) (DTNB) and NADPH. The amount of TNB generated by NADPH was measured in absorbance at 412 nm.

**Tag**
His-Tag

**Application**
SDS-PAGE, Enzyme Activity

**Storage Condition**
Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

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## BACKGROUND

### Description

TXNRD1, also known as Thioredoxin reductase 1, is a part of a selenium-containing pyridine nucleotide-disulphide oxidoreductase family, which has a conserved catalytic site of Cys-Val-Asn-Val-Gly-Cys. This protein reduces thioredoxins as well as other substrates, and plays a role in selenium metabolism and protection against oxidative stress. Inhibition of TXNRD1 activity may provide for potential treatments of cancer, AIDS and other autoimmune diseases as well as bacterial infections and parasitic diseases. Recombinant human TXNRD1 protein, fused to His-tag at N-terminus, was expressed in E. coli and purified by using conventional chromatography techniques.

### Amino acid Sequence

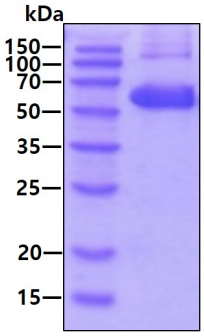
<MGSSHHHHHH SSGLVPRGSH M>YDYDLIIIG GGSGGLAAAK EAAQYGKKVM VLDFVTPTPL GTRWGLGGTC VNVGCIPKKL MHQAALLGQA LQDSRNYGWK VEETVKHDWD RMIEAVQNHI GSLNWGYRVA LREKKVVYEN AYGQFIGPHR IKATNNKGKE KIYSAERFLI ATGERPRYLG IPGDKEYCIS SDDLFSLPYC PGKTLVVGAS YVALECAGFL AGIGLDVTVM VRSILLRGFD QDMANKIGEH MEEHGIKFIR QFVPIKVEQI EAGTPGRLRV VAQSTNSEEI IEGEYNTVML AIGRDACTRK IGLETVGVKI NEKTGKIPVT DEEQTNVPYI YAIGDILEDK VELTPVAIQA GRLLAQRLYA GSTVKCDYEN VPTTVFTPLE YGACGLSEEK AVEKFGEENI EVYHSYFWPL EWTIPSRDNN KCYAKIICNT KDNERVVGFH VLGPNAGEVT QGFAAALKCG LTKKQLDSTI GIHPVCAEVF TTLSVTKRSG ASILQAGC

### General References

Ma X. et al. (2002) J Biol Chem. 277(25):22460-8.
Javvadi P. (2010) Cancer Res. 70(5):1941-50.

## DATA

### SDS-PAGE




3ug by SDS-PAGE under reducing condition and visualized by coomassie blue stain.