

## Product datasheet for **RC232957**

### **TXNRD1 (NM\_001261445) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	TXNRD1 (NM_001261445) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	TXNRD1
Synonyms:	GRIM-12; TR; TR1; TRXR1; TXNR
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**ORF Nucleotide Sequence:**

>RC232957 representing NM\_001261445  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGAGGACGGTCGGGCCCTGGAAGGAACGCTCTCGGAATTGGCCGCGGAAACCGATCTGCCGTTGTGT  
 TTGTGAAACAGAGAAAGATAGGGCGCCATGGTCCAACCTTGAAGGCTTATCAGGAGGGCAGACTTCAAAA  
 GCTACTAAAAATGAACGGCCCTGAAGATCTTCCAAGTCCTATGACTATGACCTTATCATATTGGAGGT  
 GGCTCAGGAGGTCTGGCAGCTGCTAAGGAGGCAGCCCAATATGGCAAGAAGGTGATGGTCTGGACTTTG  
 TCACTCCCACCCCTCTTGGAACTAGATGGGGTCTCGGAGGAACATGTGTGAATGTGGGTTGCATACCTAA  
 AAAACTGATGCATCAAGCAGCTTGTAGGACAAGCCCTGCAAGACTCTCGAAATATGGATGGAAAGTC  
 GAGGAGACAGTTAAGCATGATTGGGACAGAATGATAGAAGCTGTACAGAATCACATTGGCTCTTTGAATT  
 GGGGCTACCGAGTAGCTCTCGGGAGAAAAAGTCGTCTATGAGAATGCTTATGGCAATTTATTGGTCC  
 TCACAGGATTAAGGCAACAAATAATAAAGGCAAGAAAAATTTATTCAGCAGAGAGATTTCTCATTGCC  
 ACTGGTGAAGACACGTTACTTGGGCATCCCTGGTGACAAGAATACTGCATCAGCAGTATGATCTTT  
 TCTCCTTGCCCTACTGCCCGGTAAAGACCTGGTTGTTGGAGCATCCTATGTCGCTTTGGAGTGGCCTGG  
 ATTTCTTGCTGGTATTGGTTTAGACGCTACTGTTATGGTTAGGTCCATTCTTCTAGAGGATTTGACCAG  
 GACATGGCCAACAAAATTGGTGAACACATGGAAGAACATGGCATCAAGTTATAAGACAGTTCGTACCAA  
 TTAAGTTGAACAAATGAAGCAGGGACACCAGGCCGACTCAGAGTAGTAGCTCAGTCCACCAATAGTGA  
 GGAAATCATTGAAGGAGAATAATAACGGTGATGCTGGCAATAGGAAGAGATGCTGCACAAGAAAAATT  
 GGCTTAGAAACCGTAGGGGTGAAGATAAATGAAAAGACTGGAAAAATACCTGTACAGATGAAGAACAGA  
 CCAATGTGCCTTACATCTATGCCATTGGCGATATATTGGAGGATAAGGTGGAGCTCACCCAGTTGCAAT  
 CCAGGCAGGAAGATTGCTGGCTCAGAGGCTCTATGCAGGTTCCACTGTCAAGTGTGACTATGAAAAATGTT  
 CCAACCACTGTATTTACTCCTTTGGAATATGGTCTTGTGGCCTTTCTGAGGAGAAGCTGTGGAGAAGT  
 TTGGGGAAGAAAAATTGAGGTTTACCATAGTTACTTTTGGCCATTGGAATGGACGATTCCGTCAAGAGA  
 TAACAACAAATGTTATGCAAAAAAATCTGTAATACTAAAGACAATGAACGTGTTGTGGGCTTTCACGTA  
 CTGGGTCCAAATGCTGGAGAAGTTACACAAGGCTTTGCAGCTGCGCTCAAATGTGGACTGACCAAAAAGC  
 AGCTGGACAGCACAATTGGAATCCACCCTGTCTGTGCAGAGGTATTCACAACATTGTCTGTGACCAAGCG  
 CTCTGGGGCAAGCATCTCCAGGCTGGCTGCTGAGGT

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC232957 representing NM\_001261445  
 Red=Cloning site Green=Tags(s)

MEDGRALEGLSELAAETDLPVVFVKQRKIGGHGPTLKAYQEGRLQKLLKMNGPEDLPKSYDYDLIIIGG  
 GSGGLAAAKEAAQYGGKVMVLDFTPTPLGTRWLGTCVNVGCIPKLMHQAALLGQALQDSRNYGWKV  
 EETVKHDWDRMIEAVQNHIGSLNHWYRVALREKKVYENAYGQFIGPHRIKATNNKGKEIYSAERFLIA  
 TGERPRYLGI PGDKEYCISDDLFLPYCPGKTLVVGASYVALECAAGFLAGIGLDVTVMVRSILLRGFDQ  
 DMANKIGEHEEHGKIFIRQFVPIKVEQIEAGTPGRLRVVAQSTNSEEIEGEYNTVMLAIGRDACTRKI  
 GLETVGKINEKTGKIPVTDEEQTNVPYIYAIGDILEDKVELTPVAIQAGRLLAQRLYAGSTVKCDYENV  
 PTTVFTPLEYGACGLSEEKAVEKFGREENIEVYHSYFWPLEWTIPSRDNNKCYAKIICNTKDNERVVGFHV  
 LGPNAGEVTQGFAAALCKGLTKKQLDSTIGIHPVCAEVFTTLSVTKRSGASILQAGC\*G

**TRTRPLEQKLISEEDLAANDILDYKDDDDKV**

**Restriction Sites:**

SgfI-MluI

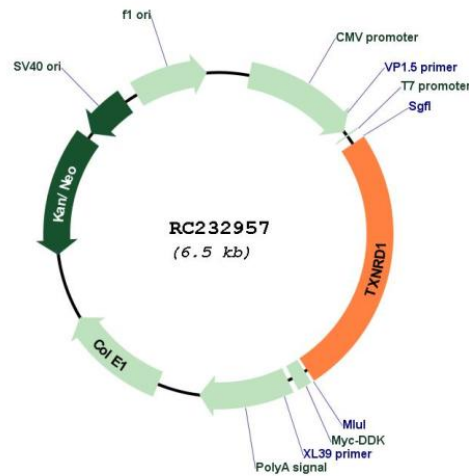
Cloning Scheme:

Cloning sites used for ORF Shuttling:



\* The last codon before the Stop codon of the ORF

Plasmid Map:



<b>ACCN:</b>	NM_001261445
<b>ORF Size:</b>	1647 bp
<b>OTI Disclaimer:</b>	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_001261445.2</a>
<b>RefSeq Size:</b>	4291 bp
<b>RefSeq ORF:</b>	1650 bp
<b>Locus ID:</b>	7296
<b>UniProt ID:</b>	<a href="#">Q16881</a>
<b>Cytogenetics:</b>	12q23.3
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Pyrimidine metabolism
<b>MW:</b>	60.6 kDa

**Gene Summary:**

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, including a glutaredoxin-containing isoform that is predominantly expressed in testis. [provided by RefSeq, May 2017]