

Product datasheet for **SC118040**

TXNRD1 (NM_003330) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	TXNRD1 (NM_003330) Human Untagged Clone
Symbol:	TXNRD1
Synonyms:	GRIM-12; TR; TR1; TRXR1; TXNR
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >OriGene ORF within SC118040 sequence for NM_003330 edited (data generated by NextGen Sequencing)

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ATGTCATGTGAGGACGGTCGGGCCCTGGAAGGAACGCTCTCGGAATTGGCCGCGGAAACC
GATCTGCCCGTTGTGTTTGTGAAACAGAGAAAGATAGGCGGCCATGGTCCAACCTTGAAG
GCTTATCAGGAGGGCAGACTTCAAAGCTACTAAAAATGAACGGCCCTGAAGATCTTCCC
AAGTCCTATGACTATGACCTTATCATCATTGGAGGTGGCTCAGGAGGTCTGGCAGCTGCT
AAGGAGGCAGCCCAATATGGCAAGAAGGTGATGGTCTGGACTTGTCACTCCCACCCCT
CTTGAACTAGATGGGGTCTYGGAGGAACATGTGTGAATGTGGTTGCATACCTAAAAAA
CTGATGCATCAAGCAGCTTTGTTAGGACAAGCCCTGCAAGACTCTCGAAATTATGGATGG
AAAGTCGAGGAGACAGTTAAGCATGATTGGGACAGAATGATAGAAGCTGTACAGAATCAC
ATTGGCTCTTTGAATTGGGGCTACCGAGTAGCTCTGCGGGAGAAAAAAGTCGTCTATGAG
AATGCTTATGGGCAATTTATTGGTCTCACAGGATTAAGGCAACAATAATAAAGGCAAA
GAAAAAATTTATTCAGCAGAGAGATTTCTCATTGCCACTGGTAAAGACCACGTTACTTG
GGCATCCCTGGTGACAAAGAATACTGCATCAGCAGTGATGATCTTTTCTCCTTGCCTTAC
TGCCCGGGTAAGACCCTGGTTGTTGGAGCATCCTATGTCGCTTTGGAGTGCCTGGATTT
CTTGCTGGTATTGGTTTAGACGCTACTGTTATGGTTAGGTCCATTCTTCTTAGAGGATTT
GACCAGGACATGGCCAACAAAATTGGTGAACACATGGAAGAACATGGCATCAAGTTTATA
AGACAGTTCGTACCAATTAAGTTGAACAAATTGAAGCAGGGACACCAGGCCGACTCAGA
GTAGTAGCTCAGTCCACCAATAGTGAGGAAATCATTGAAGGAGAAATAAATACGGTGATG
CTGGCAATAGGAAGAGATGCTTGCAACAAGAAAAATTGGCTTAGAAACCGTAGGGGTGAAG
ATAAATGAAAAGACTGGAAAAATACCTGTCACAGATGAAGAACAGACCAATGTGCCTTAC
ATCTATGCCATTGGCGATATATTGGAGGATAAGGTGGAGCTCACCCAGTTGCAATCCAG
GCAGGAAGATTGCTGGCTCAGAGGCTCTATGCAGGTTCCACTGTCAAGTGTGACTATGAA
AATGTTCCAACCACTGTATTTACTCCTTTGGAATATGGTCTTGTGGCCTTTCTGAGGAG
AAAGCTGTGGAGAAGTTTGGGGAAGAAAAATTAGGTTTACCATAGTTACTTTTGGCCA
TTGGAATGGACGATTCCGTCAAGAGATAACAACAATGTTATGCAAAAAATAATCTGTAAT
ACTAAAGACAATGAACGTGTTGTGGGCTTTACGTAAGTGGTCCAAATGCTGGAGAAGTT
ACACAAGGCTTTGCAGCTGCGCTCAAATGTGGACTGACCAAAAAGCAGCTGGACAGCACA
ATTGGAATCCACCCTGTCTGTGCAGAGGATTCCACAACATTGTCTGTGACCAAGCGCTCT
GGGGCAAGCATCCTCCAGGCTGGCTGCTGAGGTTAA
    
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Clone variation with respect to NM_003330.2
321 c=>y

5' Read Nucleotide Sequence:

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>OriGene 5' read for NM_003330 unedited
GGGGGGGAACTTTTTNCCCCCGTTAATTGTATCGATCATTAGGCGCCGATTCCGC
GAGTGAAGGAGGCNCTGAGTCTTATCATTCTCAAATCTTGTAAAGCTCTGCGTCGGGTG
AAACCAGACAAAGCCGCGAGCCAGGGATGGGAGCACGGGGGGACGGCCTGCCGGCGGG
GACGACAGCATTGCGCTGGGTGCAGCAGTGTGCGTCTCGGGGAAGGGAAGATATTTTAA
GGCGTGTCTGAGCAGACGGGAGGCTTTTCCAACCCAGGCAGCTTCGTGGCGTGTGCGG
TTTCGACCCGGTCACACAAGCTTCAGCATGTCATGTGAGGACGGTCGGGCCCTGGAAGG
AACGCTCTCGGAATTGGCCGCGGAAACCGATCTGCCCGTTGTGTTTGTGAAAACAGAGAAA
GATAGGCGGCCATGGTCCAACCTTGAAGGCTTATCAGGAGGGCAGACTTCAAAGCTACT
AAAAATGAACGGCCCTGAAGATCTTCCAAGTCTATGACTATGACCTTATCATCATTGG
AGGTGGCTCANGAGGTCTGGCAGCTGCTAAGGAGGCAGCCCAATATGGCAAGAAGGTGAT
GGTCTGGACTTTGTCACTCCCACCCCTCTTGGAACTAGATGGGGTCTTGGAGGAACATG
TGTGAATGTGGTTGCATACCTAAAAACTGATGCATCAAGCAGCTTTGTTAGGACAAGCC
CTGCAAGACTCTCGAAAAATATGGATTGAAAGTCCAAGAGACAGTTAAGCCTGATTGGGAC
ACATGATAGAAAATGTCCAGATCACATTGGCTTTTGAATTGGGCTACCGAGTACCTCTGG
GGGAGAAAAAGCCGCTAGGAAAAGCTTATGGGCAATTAATTGGTCTCCAGGATTAGG
GCACCAATATTAAGGCCAAGAAAAATTTATCCCCAAGATTCTCATTGC
    
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3' Read Nucleotide Sequence:	>OriGene 3' read for NM_003330 unedited GGCCTTTAATTTAAGTTTCACATTGTTTTGTTTTTTTTCAGAAGATTGTAACAAAAATAC ATGGNAACTTAGTATATGTTTCAATAAAATGGGTAATACAGAATCTGAACAAGACAAGT CTATAAGATATAATCCTTCTGTGGGGATAGAACATTCCACTCCACTAAGAAAAGAGAAT CACAACATGATTAGGCCCTGATTATCTCATACCGCCTACTGTTCTAATTTTCAGAGACTGGT GGACTTGGAGAAAAACAAATTAATAAAATAAAATAAACTGAATATGGTCAACTGCC TCAATTGCTCTCTCCTTTTCCCTTTTCCATTCTTTACACAGCCAAATGAGATGAGGAC GTGAGGCAGAGCCCTGTGGGGGACGGTCAGGGGCTCTGCTGCCTAAATGCCAGGCAGATG CATGGGTTCCCTGAGGTGGCCAGAAATGTATTTTGACCACTCAGTGCTGCAACTGAGAA ATACAGGTAGAGTAGCAGGAATGAAAAAGAAGCTTCAAGAAGTCTGGCAGGAGGCCTGA TGTCCACAAGCACGTGTTCAAACTCAACCTACACAGTTAGAAAAGACAGCTGAGATAGA ATCCTCAGCCAGTACATTGACAAACACATAACTGAGGCATTAATACCTCTTTATAATAAT GCAAGTTGAAATGCTAACAAAGCATAAACACTTCTGCAAAAATCCACAAAGCACAGTTG TTCATTCAACAGAAAAAGTCAAAACCACTTGGTNTTAAATGATAATCCTTCACATCCNA CCTGNTGTNCAAAATATTAATNNATAACTCATGATTAATAACCTNCCTTTNAAAAAGC ATTACCACAAACAGCTAAATCATAGCATGAAAAGACTTATNTTCTACTAATGTAGTNN CTANAAAGAATAGATACCCCATGTCATTATTTTTTAGCATAAGCTAAGTACAGAAAAA CTTTAACAGTTACGTGTTTTTTCATGCGAATGATCCACCTGCTAGACACGCACATAACTAN
Restriction Sites:	NotI-NotI
ACCN:	NM_003330
Insert Size:	4420 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP). The expression of this clone is not guaranteed due to the nature of selenoproteins.
OTI Annotation:	This clone encodes a selenoprotein containing the rare amino acid selenocysteine (Sec). Sec is encoded by UGA codon, which normally signals translational termination. Expression of this clone is not guaranteed due to the nature of selenoproteins.
Components:	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).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.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.
RefSeq:	NM_003330.2 , NP_003321.3
RefSeq Size:	3923 bp
Locus ID:	7296
UniProt ID:	Q16881

Cytogenetics:	12q23.3
Domains:	pyr_redox, pyr_redox_dim
Protein Families:	Druggable Genome
Protein Pathways:	Pyrimidine metabolism
Gene Summary:	<p>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]</p> <p>Transcript Variant: This variant (4) uses an alternate donor splice site at the 5' terminal exon, which results in translation initiation from an in-frame upstream start codon compared to variant 1. The encoded isoform (2, also known as TXNRD1_v2) has a longer and distinct N-terminus, and is thought to differentially regulate genes associated with differentiation and adhesion compared to isoform 1 (PMID:26464515).</p>