

Product datasheet for **SC100401**

Cytochrome P450 Reductase (POR) (NM_000941) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Cytochrome P450 Reductase (POR) (NM_000941) Human Untagged Clone
Tag:	Tag Free
Symbol:	Cytochrome P450 Reductase
Synonyms:	CPR; CYPOR; P450R
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >OriGene ORF within SC100401 sequence for NM_000941 edited (data generated by NextGen Sequencing)

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ATGATCAACATGGGAGACTCCCACGTGGACACCAGCTCCACCGTGTCCGAGGCGGTGGCC
GAAGAAGTATCTCTTTTCAGCATGACGGACATGATTCTGTTTTCGCTCATCGTGGGTCTC
CTAACCTACTGGTTCTCTTTCAGAAAGAAAAAGAAGAAGTCCCCGAGTTCACAAAATT
CAGACATTGACCTCCTCTGTGCAGAGAGAGCAGCTTTGTGAAAAAGATGAAGAAAAACGGGG
AGGAACATCATCGTGTTCTACGGCTCCCAGACGGGGACTGCAGAGGAGTTTGCCAAACCGC
CTGTCCAAGGACGCCACCGCTACGGGATGCGAGGCATGTCAGCGGACCCTGAGGAGTAT
GACCTGGCCGACCTGAGCAGCCTGCCGGAGATCGACAACGCCCTGGTGGTTTTCTGCATG
GCCACCTACGGTGAGGGAGACCCACCGACAATGCCCAGGACTTCTACGACTGGTGCAG
GAGACAGACGTGGATCTCTCTGGGGTCAAGTTCGCGGTGTTTGGTCTTGGGAACAAGACC
TACGAGCACTTCAATGCCATGGCAAGTACGTGGACAAGCGGCTGGAGCAGCTCGGCGCC
CAGCGCATCTTTGAGCTGGGGTTGGGCGACGACGATGGGAACCTGGAGGAGGACTTCATC
ACCTGGCGAGAGCAGTTCTGGCCGGCCGTGTGTGAACACTTTGGGGTGGAAAGCCACTGGC
GAGGAGTCCAGCATTCCGAGTACGAGCTTGTGGTCCACACCGACATAGATGCGGCCAAG
GTGTACATGGGGGAGATGGGCCGGCTGAAGAGCTACGAGAACCAGAAGCCCCCTTTGAT
GCCAAGAATCCGTTCTGGCTGCAGTACCACCAACCGGAAGCTGAACCAGGGAACCGAG
CGCCACCTCATGCACCTGGAATTGGACATCTCGGACTCCAAAATCAGGTATGAATCTGGG
GACCACGTGGCTGTGTACCCAGCCAACGACTCTGCTCTCGTCAACCAGCTGGGCAAAATC
CTGGGTGCCGACTTGGACGTGTCATGTCCCTGAACAACCTGGATGAGGAGTCCAACAAG
AAGCACCAATCCCGTGCCTACGTCTACCGCACGGCCCTCACCTACTACCTGGACATC
ACCAACCCGCGCGTACCAACGTGCTGTACGAGCTGGCGCAGTACGCCTCGGAGCCCTCG
GAGCAGGAGCTGCTGCGCAAGATGGCCTCCTCCTCCGGCGAGGGCAAGGAGCTGTACCTG
AGCTGGGTGGTGGAGGCCCGGAGGCACATCCTGGCCATCCTGCAGGACTGCCCGTCCCTG
CGCCCCCATCGACCACCTGTGTGAGCTGCTGCCGCGCCTGCAGGCCCGCTACTACTCC
ATCGCCTCATCTCCAAGGTCCACCCAACTCTGTGCACATCTGTGCGGTGGTTGTGGAG
TACGAGACCAAGGCCGCGCATCAACAAGGGCGTGGCCACCAACTGGCTGCGGGCCAAG
GAGCCTGCCGGGAGAACGGCGGCCGTGCGTGGTGGCCATGTTTCGTGCGCAAGTCCCAG
TTCCGCTGCCCTTCAAGGCCACCACGCCTGTCATCATGGTGGGCCCGGCACCGGGGTG
GCACCCTTCATAGGCTTCATCCAGGAGCGGGCCTGGCTGCGACAGCAGGGCAAGGAGGTG
GGGAGAGCGTGTACTACGGCTGCCGCGCTCGGATGAGGACTACCTGTACCGGGAG
GAGCTGGCGCAGTTCACAGGGACGGTGCCTCACCCAGCTCAACGTGGCCTTCTCCCGG
GAGCAGTCCCACAAGGTCTACGTCCAGCACCTGCTAAAGCAAGACCGAGAGCACCTGTGG
AAGTTGATCGAAGGCGGTGCCACATCTACGTCTGTGGGGATGCACGGAACATGGCCAGG
GATGTGCGAAGACCTTCTACGACATCGTGGCTGAGCTCGGGGCCATGGAGCACGCGCAG
GCGGTGGACTACATCAAGAACTGATGACCAAGGGCCGCTACTCCCTGGACGTGTGGAGC
TAG
    
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Clone variation with respect to NM_000941.2
 387 a=>g;1033 c=>t;1455 t=>c

5' Read Nucleotide Sequence:	<p>>OriGene 5' read for NM_000941 unedited NNGGTCAAAATTTGTATACGACTCACTATAGGCGGCCGGAATTCGCACGAGGCTGCCAG CGTTTCATGATCAACATGGNGAGACTCCCACGTGGACACCAGCTCCACCGTGTCCGAGGC GGTGGCCGAAGAAGTATCTCTTTTCAGCATGACGGACATGATTCTGTTTTCGTCCATCGT GGGTCTCTAACCTACTGGTTCCTCTTCAGAAAAGAAAAAGAAAGTCCCGAGTTCAC CAAAATTCAGACATTGACCTCCTCTGTCCAGAGAGAGCAGCTTTGTGAAAAGATGAAGAA AACGGGGAGGAACATCATCGTGTCTACGGCTCCAGACGGGGACTGCAGAGGAGTTTGC CAACGCCTGTCCAAGGACGCCACCGCTACGGGATGCGAGGCATGTACGCGACCTGA GGAGTATGACCTGGCCGACCTGAGCAGCCTGCCGAGATCGACAACGCCCTGGTGGTTTT CTGCATGGCCACCTACGGTGAGGGAGACCCACCGACAATGCCAGGACTTCTACGACTG GCTGCAGGAGACAGAGCTGGATCTCTCTGGGGTCAAGTTCGCGGTGTTTGGTCTTGGGAA CAAGACCTACGAGCACTCAATGCCATGGGCAAGTACGTGGACAAGCGGCTGGAGCAGCT CGGCGCCAGCGCATCTTGTAGCTGGGGTGGGCGACGACGATGGGAAGTGGAGGANGA CTTCATCACTGGCGAGAGCAGTTCTGGCCGGCCGTGTGTGAACACTNNTGGGTGGAAGC CACTGGCNGAGAGTCCAGCATTCGCCAGTACGAGCTTNGGNNNTCACACCGACATAGATG CGCCAAGGTGTACATGNNGGAGAATGNNCCNNGCTGAAAGCTACNANAACANAAGC CCCCCTTGATGCCAGNAATCCGNTCCTGGCTGCAGTCAACCCACCGGAGCTGAA</p>
3' Read Nucleotide Sequence:	<p>>OriGene 3' read for NM_000941 unedited TNAAGATCGAGATTACAGAAAAACAAA ACTTTATTCAGGGCCAGAGTTATTTAAAATTATTTACTACTGTTGGAAATCACGTGG AGGGGCTGGGCCAGCTCAGCAGAAAAAAAAGCCCTTCTGTGCAGCCACCGAGGGCCA GAGGCCTCCAGAGGCATGGAGCCCGGTGCCCCATGCAGGCCCTGGGCTGTGCTGCCAGG GGCCGGTGGACCTCACCTGGCCTGGGGGCTGAGGAGGATGCACCCAGGCCCAAAGGAGT CTTTGTCACTGGGCTGCGCCATGCCAAGGCCAAGCCAAACACACCCAGGAGACTACGG GAGGGAGCCAGGAAAGCTGATTACAGGCCGGATTCTGTGGGGTGGGTGGGCAAGCAGGC CCCTAGCTCCACAGTCCAGGGAGTAGCGGCCCTTGGTCACTAGTTTCTTGATGTAGTCC ACCGCTGCGCGTGTCCATGGCCCCGAGCTCAGCCACGATGTCGTATAAGGTGTTCTGC ACATCCCTGGCCATGTTCCGTGCATCCCCACAGACGTAGATGTGGGCACCGCCTTCGATC AACTTCCACAGGTGCTCTCGGTCTTAAACAGGTGCTGGACGTAGACCTTGTGGGAC TGCTCCCGGAGAAGCCACGTTGAGCTGGGTGAGCGCACCGTCCCTGTGGAAGTGCGCCA GCTCCTCCCGGTACAGGTAGTCCCTCATCCGAGCGCGGCAGCCGTAATACAAAAGCGTCT CCCCACCTTCTTGCCCTGCTGTCGCACCCAGCCCCGTCCTGGGAGAAACA</p>
Restriction Sites:	ECORI-NOT
ACCN:	NM_000941
Insert Size:	2650 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).
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:

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_000941.1](#), [NP_000932.1](#)

RefSeq Size: 2446 bp

RefSeq ORF: 2043 bp

Locus ID: 5447

UniProt ID: [P16435](#)

Cytogenetics: 7q11.23

Domains: flavodoxin, NAD_binding_1, FAD_binding_1

Protein Families: Druggable Genome, P450, Transmembrane

Gene Summary: This gene encodes an endoplasmic reticulum membrane oxidoreductase that is essential for multiple metabolic processes, including reactions catalyzed by cytochrome P450 proteins for metabolism of steroid hormones, drugs and xenobiotics. The encoded protein has a flavin adenine dinucleotide (FAD)-binding domain and a flavodoxin-like domain which bind two cofactors, FAD and FMN, that allow it to donate electrons directly from NADPH to all microsomal P450 enzymes. Mutations in this gene cause a complex set of disorders, including apparent combined P450C17 and P450C21 deficiency, amenorrhea and disordered steroidogenesis, congenital adrenal hyperplasia and Antley-Bixler syndrome, that resemble those caused by defects in steroid metabolizing enzymes such as aromatase, 21-hydroxylase, and 17 alpha-hydroxylase. [provided by RefSeq, Aug 2020]

Transcript Variant: This variant (2) differs in the 5' UTR compared to variant 1. Variants 1 and 2 both encode the same protein. CCDS Note: This CCDS representation uses the 5'-most in-frame start codon, which is conserved in higher primate species. This starting position is most commonly referred to in the literature, and the numbering system used to describe disease-associated mutations is based on this protein start. This includes data in the P450 oxidoreductase (POR) allele nomenclature locus-specific database, and the Human Gene Mutation Database (HGMD). This start codon is restricted to higher primate species, and it has a weak Kozak signal. However, it should be noted that an alternative downstream start codon, which has a strong Kozak signal and is much more widely conserved, is also present. The use of this downstream start codon would result in a protein that is 3 aa shorter at the N-terminus. Protein sequencing in PMID:2513880 indicates that this is the preferred start codon in vivo. It is therefore possible that the ribosome will initiate at the upstream start codon only a small fraction of the time (if at all), while leaky scanning will allow the downstream start codon to be used predominantly.