

## Product datasheet for **SC324169**

### 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:	Neomycin
Vector:	pCMV6-AC (PS100020)
E. coli Selection:	Ampicillin (100 ug/mL)



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**Fully Sequenced ORF:** >OriGene sequence for NM\_000941.2  
 GGCTGCCAGCGTTTCATGATCAACATGGGAGACTCCCACGTGGACACCAGCTCCACCGTG  
 TCCGAGGCGGTGGCCGAAGAAGTATCTCTTTTCAGCATGACGGACATGATTCTGTTTTCG  
 CTCATCGTGGGTCTCCTAACCTACTGGTTCCTCTTCAGAAAGAAAAAGAAGAAGTCCCC  
 GAGTTCACCAAAATTCAGACATTGACCTCCTGTGCAGAGAGAGCAGCTTTGTGGAAAAG  
 ATGAAGAAAACGGGGAGGAACATCATCGTGTCTACGGCTCCCAGACGGGGACTGCAGAG  
 GAGTTTGGCAACCGCCTGTCCAAGGACGCCACCCTACGGGATGCGAGGCATGTCAGCG  
 GACCTGAGGAGTATGACCTGGCCGACCTGAGCAGCCTGCCAGAGATCGACAACGCCCTG  
 GTGGTTTTCTGCATGGCCACCTACGGTGTAGGGAGACCCACCGACAATGCCAGGACTTC  
 TACGACTGGCTGCAGGAGACAGACGTGGATCTCTCTGGGGTCAAGTTCGCGGTGTTTGGT  
 CTTGGGAACAAGACCTACGAGCACTTCAATGCCATGGGCAAGTACGTGGACAAGCGGCTG  
 GAGCAGCTCGGCGCCAGCGCATCTTTGAGCTGGGGTTGGGCGACGACGATGGAACTTG  
 GAGGAGGACTTCATCACCTGGCGAGAGCAGTTCTGGCTGGCCGTGTGTGAACACTTTGGG  
 GTGGAAGCCACTGGCGAGGAGTCCAGCATTGCCAGTACGAGCTTGTGGTCCACACCGAC  
 ATAGATGCGGCCAAGGTGTACATGGGGGAGATGGGCCGGCTGAAGAGCTACGAGAACCAG  
 AAGCCCCCTTTGATGCCAAGAATCCGTTCTGGCTGCAGTACCACCAACCGGAAGCTG  
 AACCAGGGAACCGAGCGCCACCTCATGCACCTGGAATTGGACATCTCGGACTCCAAAATC  
 AGGTATGAATCTGGGGACCACGTGGCTGTGTACCCAGCCAACGACTCTGCTCTCGTCAAC  
 CAGCTGGGCAAAATCCTGGGTGCCGACCTGGACGTCGTATGTCCTGAACAACCTGGAT  
 GAGGAGTCCAACAAGAAGCACCCATTCCCGTGCCCTACGTCCTACCGCACGGCCCTCACC  
 TACTACCTGGACATCACCAACCCGCCGCTACCAACGTGCTGTACGAGCTGGCGCAGTAC  
 GCCTCGGAGCCCTCGGAGCAGGAGCTGCTGCACAAGATGGCCTCCTCCTCGGCGAGGGC  
 AAGGAGCTGTACCTGAGCTGGTGGTGGAGGCCCGGAGGCACATCCTGGCCATCCTGCAG  
 GACTGCCCGTCCCTGCGGCCCCCATCGACCACCTGTGTGAGCTGCTGCCGCGCCTGCAG  
 GCCCGCTACTACTCCATCGCCTCATCCTCCAAGTCCACCCCAACTCTGTGCACATCTGT  
 GCGGTGTTGTGGAGTACGAGACCAAGCCGGCCGCATCAACAAGGGCGTGGCCACCAAC  
 TGGCTGCGGGCCAAGGAGCCTGTGCGGGAGAACGGCGGCCGTGCGCTGGTGCCCATGTTT  
 GTGCGCAAGTCCCAGTTCGCGCTGCCCTCAAGGCCACCACGCTGTATCATGGTGGGC  
 CCCGGCACCGGGTGGCACCCCTTATAGGCTTCATCCAGGAGCGGGCCTGGTGCAGAC  
 CAGGGCAAGGAGTGGGGAGACGCTGCTGTACTACGGCTGCCGCGCTCGGATGAGGAC  
 TACCTGTACCGGGAGGAGCTGGCGCAGTCCACAGGGACGGTGCCTCACCCAGTCAAC  
 GTGGCCTTCTCCCGGAGCAGTCCACAAGGTCTACGTCCAGCACCTGCTAAAGCAAGAC  
 CGAGAGCACCTGTGGAAGTTGATCGAAGCGGTGCCACATCTACGTCTGTGGGGATGCA  
 CGGAACATGGCCAGGGATGTGCAGAACACCTTCTACGACATCGTGGCTGAGCTCGGGGCC  
 ATGGAGCACGCGCAGGCGGTGGACTACATCAAGAACTGATGACCAAGGGCCGCTACTCC  
 CTGGACGTGTGGAGCTAGGGCCTGCCTGCCCCACCCACCCACAGACTCCGGCCTGTAA  
 TCAGCTCTCTGGCTCCTCCCTAGTCTCCTGGTGTGTTTGGCTTGGCCTTGGCATGG  
 CGCAGGCCCAGTGACAAAGACTCCTCTGGCCTGGGGTGCATCCTCCTCAGCCCCCAGG  
 CCAGGTGAGTCCACCGGCCCTGGCAGCACAGCCAGGGCCTGCATGGGGGCACCGGGC  
 TCCATGCCTCTGAGGCCCTGGCCCTCGGTGGCTGCACAGAAGGGCTCTTTCTCTCTGC  
 TGAGCTGGGCCAGCCCTCCACATGATTTCCAGTGAGTGAAATAATTTTAAATAACCT  
 CTGGCCCTTGAATAAAGTTCTGTTTTCTGTAAAAA

**Restriction Sites:** ECoRI-NOT

**ACCN:** NM\_000941

**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).

<b>OTI Annotation:</b>	This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
<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_000941.2</a> , <a href="#">NP_000932.3</a>
<b>RefSeq Size:</b>	2509 bp
<b>RefSeq ORF:</b>	2043 bp
<b>Locus ID:</b>	5447
<b>UniProt ID:</b>	<a href="#">P16435</a>
<b>Cytogenetics:</b>	7q11.23
<b>Domains:</b>	flavodoxin, NAD_binding_1, FAD_binding_1
<b>Protein Families:</b>	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.