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# Product datasheet for RC202172

## Cytochrome P450 Reductase (POR) (NM_000941) Human Tagged ORF Clone

### Product data:

| | |
|---|---|
| **Product Type:** | Expression Plasmids |
| **Product Name:** | Cytochrome P450 Reductase (POR) (NM_000941) Human Tagged ORF Clone |
| **Tag:** | Myc-DDK |
| **Symbol:** | Cytochrome P450 Reductase |
| **Synonyms:** | CPR; CYPOR; P450R |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-Entry (PS100001) |
| **E. coli Selection:** | Kanamycin (25 ug/mL) |

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**ORF Nucleotide Sequence:**

>RC202172 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGATCAACATGGGAGACTCCCACGTGGACACCAGCTCCACCGTGTCCGAGGCGGTGGCCGAAGAAGTAT
CTCTTTTCAGCATGACGGACATGATTCTGTTTTCGCTCATCGTGGGTCTCCTAACCTACTGGTTCCTCTT
CAGAAAGAAAAAAGAAGAAGTCCCCGAGTTCACCAAAATTCAGACATTGACCTCCTCTGTCAGAGAGAGC
AGCTTTGTGGAAAAGATGAAGAAAACGGGGAGGAACATCATCGTGTTCTACGGCTCCCAGACGGGGACTG
CAGAGGAGTTTGCCAACCGCCTGTCCAAGGACGCCCACCGCTACGGGATGCGAGGCATGTCAGCGGACCC
TGAGGAGTATGACCTGGCCGACCTGAGCAGCCTGCCAGAGATCGACAACGCCCTGGTGGTTTTCTGCATG
GCCACCTACGGTGAGGGAGACCCCACCGACAATGCCCAGGACTTCTACGACTGGCTGCAGGAGACAGACG
TGGATCTCTCTGGGGTCAAGTTCGCGGTGTTTGGTCTTGGGAACAAGACCTACGAGCACTTCAATGCCAT
GGGCAAGTACGTGGACAAGCGGCTGGAGCAGCTCGGCGCCCAGCGCATCTTTGAGCTGGGGTTGGGCGAC
GACGATGGGAACTTGGAGGAGGACTTCATCACCTGGCGAGAGCAGTTCTGGCTGGCCGTGTGTGAACACT
TTGGGGTGGAAGCCACTGGCGAGGAGTCCAGCATTCGCCAGTACGAGCTTGTGGTCCACACCGACATAGA
TGCGGCCAAGGTGTACATGGGGGAGATGGGCCGGCTGAAGAGCTACGAGAACCAGAAGCCCCCCTTTGAT
GCCAAGAATCCGTTCCTGGCTGCAGTCACCACCAACCGGAAGCTGAACCAGGGAACCGAGCGCCACCTCA
TGCACCTGGAATTGGACATCTCGGACTCCAAAATCAGGTATGAATCTGGGGACCACGTGGCTGTGTACCC
AGCCAACGACTCTGCTCTCGTCAACCAGCTGGGCAAAATCCTGGGTGCCGACCTGGACGTCGTCATGTCC
CTGAACAACCTGGATGAGGAGTCCAACAAGAAGCACCCATTCCCGTGCCCTACGTCCTACCGCACGGCCC
TCACCTACTACCTGGACATCACCAACCCGCCGCGTACCAACGTGCTGTACGAGCTGGCGCAGTACGCCTC
GGAGCCCTCGGAGCAGGAGCTGCTGCGCAAGATGGCCTCCTCCTCCGGCGAGGGCAAGGAGCTGTACCTG
AGCTGGGTGGTGGAGGCCCGGAGGCACATCCTGGCCATCCTGCAGGACTGCCCGTCCCTGCGGCCCCCCA
TCGACCACCTGTGTGAGCTGCTGCCGCGCCTGCAGGCCCGCTACTACTCCATCGCCTCATCCTCCAAGGT
CCACCCCAACTCTGTGCACATCTGTGCGGTGGTTGTGGAGTACGAGACCAAGGCCGGCCGCATCAACAAG
GGCGTGGCCACCAACTGGCTGCGGGCCAAGGAGCCTGTCGGGGAGAACGGCGGCCGTGCGCTGGTGCCCA
TGTTCGTGCGCAAGTCCCAGTTCCGCCTGCCCTTCAAGGCCACCACGCCTGTCATCATGGTGGGCCCCGG
CACCGGGGTGGCACCCTTCATAGGCTTCATCCAGGAGCGGGCCTGGCTGCGACAGCAGGGCAAGGAGGTG
GGGGAGACGCTGCTGTACTACGGCTGCCGCCGCTCGGATGAGGACTACCTGTACCGGGAGGAGCTGGCGC
AGTTCCACAGGGACGGTGCGCTCACCCAGCTCAACGTGGCCTTCTCCCGGGAGCAGTCCCACAAGGTCTA
CGTCCAGCACCTGCTAAAGCAAGACCGAGAGCACCTGTGGAAGTTGATCGAAGGCGGTGCCCACATCTAC
GTCTGTGGGGATGCACGGAACATGGCCAGGGATGTGCAGAACACCTTCTACGACATCGTGGCTGAGCTCG
GGGCCATGGAGCACGCGCAGGCGGTGGACTACATCAAGAAACTGATGACCAAGGGCCGCTACTCCCTGGA
CGTGTGGAGC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

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**Protein Sequence:**

>RC202172 protein sequence
Red=Cloning site Green=Tags(s)

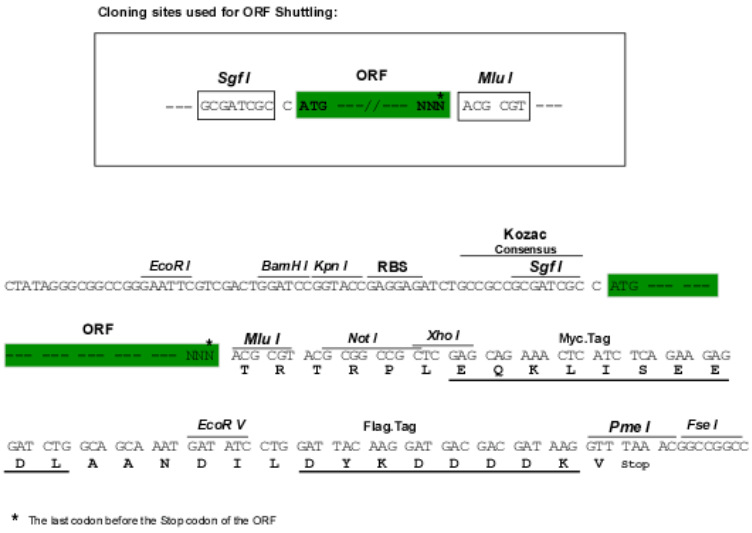
MINMGDSHVDTSSTVSEAVAEEVSLFSMTDMILFSLIVGLLTYWFLFRKKKEEVPEFTKIQTLTSSVRES
SFVEKMKKTGRNIIVFYGSQTGTAEEFANRLSKDAHRYGMRGMSADPEEYDLADLSSLPEIDNALVVFCM
ATYGEGDPTDNAQDFYDWLQETDVDLSGVKFAVFGLGNKTYEHFNAMGKYVDKRLEQLGAQRIFELGLGD
DDGNLEEDFITWREQFWLAVCEHFGVEATGEESSIRQYELVVHTDIDAAKVYMGEMGRLKSYENQKPPFD
AKNPFLAAVTTNRKLNQGTERHLMHLELDISDSKIRYESGDHVAVYPANDSALVNQLGKILGADLDVVMS
LNNLDEESNKKHPFPCPTSYRTALTYYLDITNPPRTNVLYELAQYASEPSEQELLRKMASSSGEGKELYL
SWVVEARRHILAILQDCPSLRPPIDHLCELLPRLQARYYSIASSSKVHPNSVHICAVVVEYETKAGRINK
GVATNWLRAKEPVGENGGRALVPMFVRKSQFRLPFKATTPVIMVGPGTGVAPFIGFIQERAWLRQQGKEV
GETLLYYGCRRSDEDYLYREELAQFHRDGALTQLNVAFSREQSHKVYVQHLLKQDREHLWKLIEGGAHIY
VCGDARNMARDVQNTFYDIVAELGAMEHAQAVDYIKKLMTKGRYSLDVWS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** https://cdn.origene.com/chromatograms/mk6260_g05.zip

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**




**ACCN:** NM_000941

**ORF Size:** 2040 bp

**OTI Disclaimer:** 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. More info

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

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| | |
|---|---|
| **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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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. |
| **Note:** | Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required. |
| **RefSeq:** | NM_000941.1, NP_000932.1 |
| **RefSeq Size:** | 2509 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 |
| **MW:** | 77.1 kDa |
| **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] |

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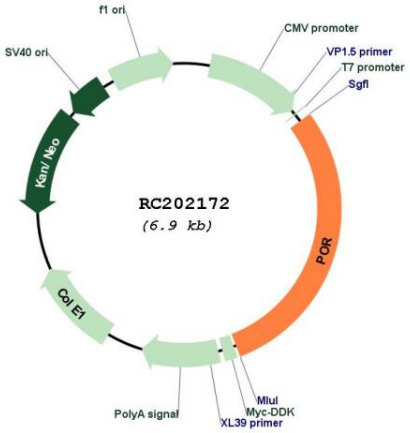
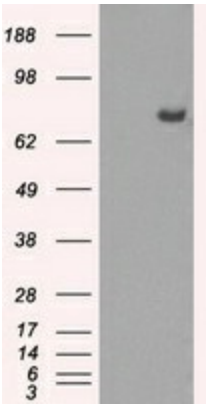
## Product images:




Circular map for RC202172




HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY POR (Cat# RC202172, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-POR antibody (Cat# [TA500612]). Positive lysates [LY424436] (100ug) and [LC424436] (20ug) can be purchased separately from OriGene.

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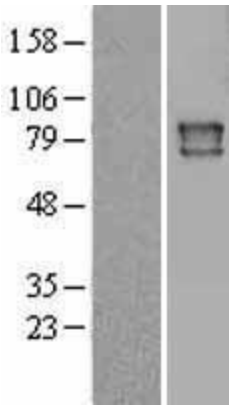
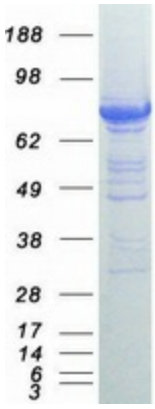



Western blot validation of overexpression lysate (Cat# [LY424436]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC202172 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).




Coomassie blue staining of purified POR protein (Cat# [TP302172]). The protein was produced from HEK293T cells transfected with POR cDNA clone (Cat# RC202172) using MegaTran 2.0 (Cat# [TT210002]).

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