

## Product datasheet for **MR208548**

### Cyp27a1 (NM\_024264) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Cyp27a1 (NM_024264) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Cyp27a1
Synonyms:	1300013A03Rik; Cyp27
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>MR208548 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGCTGCGTGGAGCCGACGAGGCTGAGATGGACGCTCCTGGACCCGCGTGTGGTGGGCGCTGGCCTCT  
 GCCCACAGGGGCCAGAGCCAAGGCCACGATCCCTGCAGCCCTCAGGCACAGGAGAGTACGGAGGTCC  
 AGGAACAGGTCAAGACCGGCCGCGCCTGCGGAGTCCGGCGGAGCTTCCGGGGACCGGAACGCTACAATTT  
 TTATTCAGCTATTTCTACAAGGCTATGTGCTGCACTTCCCCGACCTCCAGGTGCTGAACAAGACCAAGT  
 ATGGTCCAATGTGGACAACCTCCTTTGGGACTTACACCAATGTGAATCTGGTAGTGCCTTCTTGGG  
 GCAAGTGTGAGACAGGAGGGCAAGTACCCAATAAGAGACCACATGGATCAGTGAAGGACCACCGAGAC  
 CACAAGGGCCTCACCTATGGGATCTTCATCGCACAGGAGCAATGGTACCATCTGCGTCAGGCTTTGA  
 AACAGAGGCTGTGAAGCCTGACGAGGCCGCGCTACACGGATGCCTTAAACGAGGTTATCAGTGACTT  
 TATCACCCGGCTGGACCAGGTGCGGGCAGAGAGTGAATCAGGGGACCAGGTGCCAGACATGGCTCATCTT  
 CTCTACCACCTTGCCCTTGAAGCCATCACCTATATCCTGTTTGAGAAAAGGATTGGCTGCCTGAAACCCT  
 CCATTCCTGAGGACACTGCCGCCTTCATCAGATCTGTTGCAATCATGTTCCAGAACTCAGTCTATATCAC  
 TTTCTTCCCAAATGGACGCGTCTCTGCTGCCCTTTTGAAGCGATACCTGAATGGCTGGGATAACATT  
 TTCTCCTTTGAAAGAAGCTGATTGATGAAAAAGTCCAGGAGCTAAAAGCCCAGCTACAGGAACTGGGC  
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 CATCGGCACCTTCTGAGCTGCTTTTGGCTGGGTGGACACGACATCCAACACACTGACATGGGCCCTG  
 TACCACCTTTCAAAGAGCCCAGAGATCCAGGAGCCTTGACACAAGGAAGTGAATGGTGTGGTGCCTTCG  
 GGAAGGTGCCCCAGCACAAAGGACTTTGCCACATGCCTCTGCTAAAAGCTGTGATTAAGGAGACCTGCG  
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 TTCCCCAAGAATACACAGTTTGTGTTATGCCACTACGTGGTGTCCCGGATCCCAGTGTCTTCTGAGC  
 CCAACAGCTTCCAGCCTCACCGATGGCTGAGGAAGAAAGAGGCTGATAACCCTGGGATCTACATCCATT  
 CGGCTCTGTGCCCTTCGGCTATGGGGTTCGGTCTTGCCTGGTTCGGAGGATTGCAGAACTGGAGATGCAA  
 CTGATGCTGTCAAGGCTGGTACAGAAGTATGAGATTGCCCTGGCTCCCGGATGGGAGAAGTAAAGACTG  
 TGTCGCCGATCGTCTGGTTCAGCAAGAAGGTGAGGCTGCATTTTCTGCAGAGACAG

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR208548 protein sequence  
 Red=Cloning site Green=Tags(s)

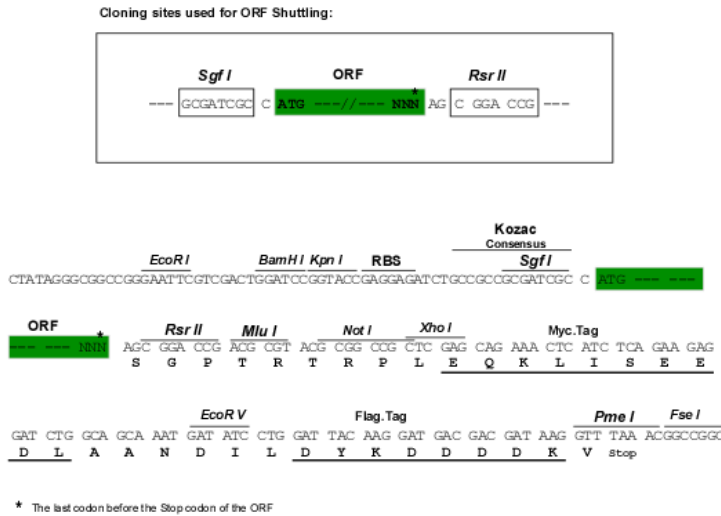
MAAWSRTRLRWTLDDPRVVGRLCPQGARA KATIPAALQAQESTEGPGTGQDRPRLRSPAE LPGTGLQF  
 LFQLFLQGYVLHLPDLQVLNKT KYGPMWTT SFGTYNVNLASAPLLEQVMRQEGKYPIRDHMDQWKDHRD  
 HKGLTYGIFIAQGEQWYHLRQALKQRLLKPDEAALYTDALNEVISDFITRLDQVRAESESGDQVPDMAHL  
 LYHLALEAITYILFEKRIGCLKPSIPEDTAAFIRSVAIMFQNSVYITFLPKWTRP LLPFWKRYLNGWDNI  
 FSFGKKLIDKQVQELKAQLQETGPDGVRVSGYLHFLLTNELLSTQETIGTFPELLLAGVDTSNTLTWAL  
 YHLSKSPEIQEALHKEVTGVVFPFGKVPQHKDFAHMPLLKAVIKETLRLYPVPTNSRIITEKETEINGFL  
 FPKNTQFVLCYVVSRDPSVFPPEPNSFQPHRWLRKKEADNPGILHFPFGSVFPGYGVRSCLGRRIAELEMQ  
 LMLSRLVQKYEIALAPGMGEVKTVSRIVLVPSKKVRLHFLQRQ

**SGP**TRTRPLEQKLI**SEEDLAANDILDYKDDDDK**V

**Restriction Sites:**

Sgfl-RsrII

Cloning Scheme:



ACCN: NM\_024264

ORF Size: 1602 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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.

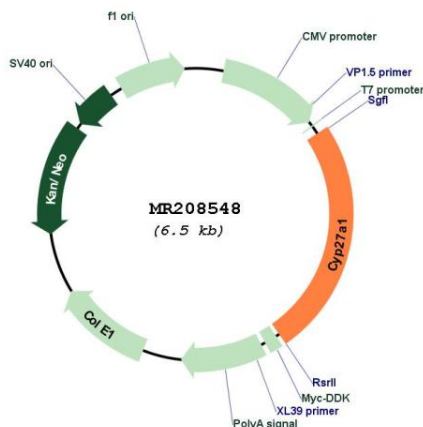
Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

- 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\\_024264.5](#)  
**RefSeq Size:** 1890 bp  
**RefSeq ORF:** 1602 bp  
**Locus ID:** 104086  
**UniProt ID:** [Q9DBG1](#)  
**Cytogenetics:** 1 38.54 cM  
**MW:** 60.7 kDa

**Gene Summary:** Cytochrome P450 monooxygenase that catalyzes regio- and stereospecific hydroxylation of cholesterol and its derivatives. Hydroxylates (with R stereochemistry) the terminal methyl group of cholesterol side-chain in a three step reaction to yield at first a C26 alcohol, then a C26 aldehyde and finally a C26 acid. Regulates cholesterol homeostasis by catalyzing the conversion of excess cholesterol to bile acids via both the "neutral" (classic) and the "acid" (alternative) pathways. May also regulate cholesterol homeostasis via generation of active oxysterols, which act as ligands for NR1H2 and NR1H3 nuclear receptors, modulating the transcription of genes involved in lipid metabolism (By similarity). Plays a role in cholestanol metabolism in the cerebellum (PubMed:28190002). Similarly to cholesterol, hydroxylates cholestanol and may facilitate sterol diffusion through the blood-brain barrier to the systemic circulation for further degradation. Also hydroxylates retinal 7-ketocholesterol, a noxious oxysterol with pro-inflammatory and pro-apoptotic effects, and may play a role in its elimination from the retinal pigment epithelium. May play a redundant role in vitamin D biosynthesis. Catalyzes 25-hydroxylation of vitamin D3 that is required for its conversion to a functionally active form (By similarity).[UniProtKB/Swiss-Prot Function]

### Product images:



Circular map for MR208548