

## Product datasheet for **MG208027**

### **Cyp46a1 (NM\_010010) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Cyp46a1 (NM_010010) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Cyp46a1
Synonyms:	Cyp46
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG208027 representing NM\_010010  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGAGCCCCGGGCTGCTGCTGCTCGGCAGCGCCGTCTGCTCGCCTTCGGCCTCTGCTGCACCTTCGTGC  
 ATCGCGCTCGCAGCCGCTATGAGCACATCCCCGGGCCCGCGGCCAGCTTCCTTCTGGACATCTCCC  
 CTACTTTTGAAAAAGGACGAAGATTGTGGCCGTGTGCTCCAAGATGTGTTTCTGGATTGGGCTAAGAAG  
 TATGGTCTGTTGAAGAGTCAATGTCTTCTACAAGACCTCAGTCATTGTCACGAGTCCGGAGTCAGTCA  
 AGAAGTTCCTGATGTCCACCAAGTACAACAAGGACTCCAAGATGTACCGCGCTTCAGACTGTGTTTGG  
 GGAGAGACTGTTTGGCCAGGGCTTGGTGTCTGAATGTGACTATGGGCGCTGTTACAAGCAGAGGAAAGTC  
 ATGGACTTGGCCTTCAGCCGAGCTCCTTGGTCAGCCTGATGGAGACGTTCAACGAGAAGCGGAGCAGC  
 TGGTGGAAATCCTAGAAGCTAAGGCAGATGGACAGACACCCGTGCCATGCAGGACATGCTGACCTGTGC  
 CACCATCGACATCTGGCCAAGGCAGCTTTTGGGATGGAGACCAGTATGTTACTGGGTGCCAGAAACCG  
 CTGTCCCAGGCAGTGAAGGTCATGCTGGAGGGCATCAGTCATCCGTAACACCTGGCAAAGTTTATGC  
 CAGGGAAGAGAAAAGCAGCTTCGGGAGATCCGCGAGAGCATCCGTCGCTGCTGCGCCAGGTGGGGAAGGATTG  
 GGTGCAGCGCCGCGCAAGCCCTGAAGAGGGGCGAGGACATGCCGGTGACATCCTCACGCAGATCCTC  
 AAAGCTGAAGAGGGAGCTCAGGACGATGAGGTTCTGCTGGACAACCTTGTACCTTCTCATTGCCGGTC  
 ATGAGACTTCTGCCAACCATCTGGCATTACAGTGATGGAGTTGTCTCGCCAGCCAGAGATCGTGGCAAG  
 GCTGCAGGCCGAGGTGGATGAGGTTGTGCGTTCCAAGAGGCACCTGGACTACGAGGATCTGGGGAGACTG  
 CAGTATCTGTGCGAGGTCCTCAAAGAGTCTCTGAGGCTGTACCCGCCAGCGTGGGGCACCTTTCGCTGC  
 TGGAGGAGGAGACCTTGATTGATGGGGTCAGAGTCCCTGGCAATACTCCTCTCTGTTTTCAGCACCTGC  
 CATGGGGAGAATGGACACCTACTTTGAAGACCCATTGACTTTCAACCCTGACCGCTTCGGCCCTGGAGCG  
 CCCAAGCCACGGTCACTTACTTTCCCTTTCCCTGGGCCACCGTCTGTCATCGCCAACAGTTTGCTC  
 AGATGGAGGTGAAAGTTGTATGGCCAAGCTGCTCAGAGGATCGAGTTCGGCTAGTGCCTGGGCAGCG  
 CTTTGGGCTGCAAGAGCAGGCTACGCTCAAGCCATTGGACCCCGTGTGTGCACCCTGAGGCCCGGGG  
 TGGCAGCTGCACCCCCACCCACCTGC

**ACGCGTACGCGGCCGCTCGAG** – GFP Tag – GTTTAA

**Protein Sequence:**

>MG208027 representing NM\_010010  
 Red=Cloning site Green=Tags(s)

MSPGLLLLGSVLLAFGLCCTFVHRARSRYEHIPGPPRPSFLLGHLPYFWKKDEDCGRVLQDVFLDWAKK  
 YGPVVRVNVFYKTSVIVTSPESVKKFLMSTKYNKDSKMYRALQTVFGERLFGQGLVSECDYGRWYKQRKV  
 MDLAFSRSSLVSLMETFNEKAEQLVEILEAKADGQTPVSMQDMLTCATIDILAKAAFGMETSMLLGAQKP  
 LSQAVKVMLEGISASRNTLAKFMPGKRKQLREIRESIRLLRQVGDWVQRRREALKRGEDMPADILTQIL  
 KAEEGAQDDEVLLDNFVFFIAGHETSANHLAFTVMELSRQPEIVARLQAEVDEVVGGSKRHLDYEDLGRLL  
 QYLSQVLKESRLYPPAWGTFRLLEEETLIDGVRVPGNTPLLFSTYVMGRMDTYFEDPLTFNPDRFGPGA  
 PKPRFTYFPFSLGHRSCIGQQFAQMEVKVVMKLLQRIEFRLVPGQRFGLQEATLKLPLDPVLCRLRPRG  
 WQPAPPPPPC

**TRTRPLE** – GFP Tag – V

**Restriction Sites:**

Sgfl-Mlul

**Cloning Scheme:**


**ACCN:** NM\_010010

**ORF Size:** 1500 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:**

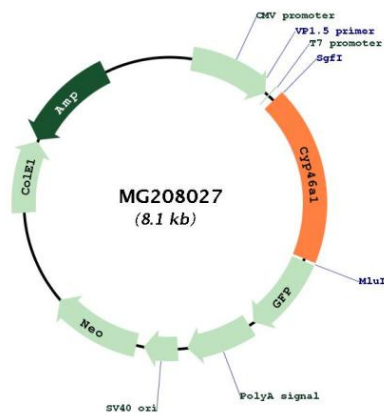
1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store 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\\_010010.1](#), [NP\\_034140.1](#)

RefSeq Size: 2146 bp  
 RefSeq ORF: 1503 bp  
 Locus ID: 13116  
 UniProt ID: [Q9WVK8](#)  
 Cytogenetics: 12 F1

**Gene Summary:** P450 monooxygenase that plays a major role in cholesterol homeostasis in the brain. Primarily catalyzes the hydroxylation (with S stereochemistry) at C-24 of cholesterol side chain, triggering cholesterol diffusion out of neurons and its further degradation (PubMed:10377398, PubMed:16505352, PubMed:28190002). By promoting constant cholesterol elimination in neurons, may activate the mevalonate pathway and coordinate the synthesis of new cholesterol and nonsterol isoprenoids involved in synaptic activity and learning (PubMed:16505352). Further hydroxylates cholesterol derivatives and hormone steroids on both the ring and side chain of these molecules, converting them into active oxysterols involved in lipid signaling and biosynthesis (By similarity). Acts as an epoxidase converting cholesta-5,24-dien-3beta-ol/desmosterol into (24S),25-epoxycholesterol, an abundant lipid ligand of nuclear NR1H2 and NR1H3 receptors shown to promote neurogenesis in developing brain (By similarity). May also catalyze the oxidative metabolism of xenobiotics, such as clotrimazole (By similarity).[UniProtKB/Swiss-Prot Function]

### Product images:



Circular map for MG208027