

Product datasheet for **MG208242**

Cyp1a2 (NM_009993) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Cyp1a2 (NM_009993) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Cyp1a2
Synonyms:	CP12; Cyp1a1; CYPIA2; P450-3
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG208242 representing NM_009993
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGCGTTCTCCAGTACATCTCCTTAGCCCCAGAGCTGCTACTGGCCACTGCCATCTTCTGTTTAGTGT
 TCTGGATGGTCAGAGCCTCAAGGACCCAGGTTCCCAAAGGCCCTGAAGAATCCACCCGGACCTGGGGCTT
 GCCCTTCAATGGGCACATGCTGACTGTGGGAAGAACCACACCTGTCACTGACACGGCTGAGTCAGCAG
 TATGGGGACGTGCTGAGATCCGCATCGGCTCCACTCCTGTGGTGGTGTGAGCGGCCTGAACACCATCA
 AGCAGGCCCTGGTGGGACGGGAGATGACTTCAAGGGCCGACCAGACCTCTACAGCTTACACCTTATCAC
 TAACGGCAAGAGCATGACTTTCAACCCAGACTCTGGACCCGTGTGGGCTGCCCGCCGGCCCTGGCCAG
 GATGCCCTGAAGAGCTTCCATAGCCTCGACCCGACGTCAGCATCCTCTTGTATTTGGAGGAGCAGC
 TGAGCAAGGAGGTAACCATCTCGTCAGCAAGCTTCAGAAGGCGATGGCAGAGGTTGGCCACTTCGAACC
 AGTCAGCCAGGTGGTGAATCGGTGGCTAACGTCAATTGGTGCCATGTGCTTTGGGAAGAACTTCCCCGG
 AAGAGCGAGGAGATGCTGAACATCGTGAATAACAGCAAGGACTTTGTGGAGAATGTACCTCAGGAATG
 CAGTGGACTTCTTCCCGTCTGCGCTACCTGCCCAACCCGGCCCTCAAGAGGTTTAAAGACCTTCAATGA
 TAACCTCGTGCTGTTTCTGCAGAAAAGTGTCCAGGAGCACTACCAAGACTTCAACAAGAACAGTATCCAA
 GACATCACAAGTGCCCTGTTCAAGCACAGCGAGAATAACAAGACAATGGCGGTCTCATCCCCGAGGAGA
 AGATTGTCAACATTGTCAATGACATCTTTGGAGCTGGCTTTGACACAGTCACCACAGCCATCACCTGGAG
 CATTTTGTACTTGTGACATGGCCTAACGTGCAGAGGAAGATCCATGAGGAGCTGGACACGGTGGTTGGC
 AGGATCGGCAACCACGGCTTTCTGACCGTCCCCAGCTGCCATATCTAGAGGCCCTCATCTGGAGATCT
 ACCGATACACATCCTTTGCCCTTCCACATCCCCACAGCACAACGAGGACACCTCACTGAATGAGCTT
 CCACATTTCCAAAGGAGCGCTGTATCTACATAAACCAAGTGGCAGGTCAACCATGATGAGAAGCAAGTGGAAA
 GACCCCTTTGTGTTCCGCCAGAGCGGTTTCTTACCAATAACAACCTCGGCCATCGACAAGACCCAGAGCG
 AGAAGGTGATGCTCTTCGGCTTGGGAAAGCGCCGGTGCATTGGGGAGATCCCGGCCAAGTGGGAAGTCTT
 CCTCTTCTTAGCCATCCTGCTGCAGCATCTGGAGTTTAGTGTGCCACCGGTGTGAAGGTGGACCTGACA
 CCCAATATGGGTTGACCATGAAGCCCGGACCTGTGAACACGTCCAGGCATGGCCACGCTTTTCCAAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG208242 representing NM_009993
 Red=Cloning site Green=Tags(s)

MAFSQYISLAPELLLATAIFCLVFWMVRASRTQVPKGLKNPPGPWGLPFIHMLTVGKNPHLSLTRLSSQ
 YGDVLRIRIGSTPVVVL SGLNTIKQALVRQDDFKGRPDLYSFTLITNGKSMTFNPDSGPVWAARRRLAQ
 DALKSFSIASDPTSASSCYLEEHVSKEANHLVSKLQKAMAEVGHFEPVSQVSVANVIGAMCFGKNFPR
 KSEEMLNIVNNSKDFVENVTSGNAVDFFPVLRYPNLPALKRKFTFNDNFVLFQKTVQEHYQDFNKNSIQ
 DITSALFKHSENYKDNGLIPEEKIVNIVNDIFGAGFDVTVAITWSILLVTPNVQRKIHEELDTVVG
 RDRQPRLSDRPQLPYLEAFILEIYRYTSFVPFTIPHSTTRDTSLNGFHIPKERCIIYINQWQVNHDEKQWK
 DPFVFRPERFLTNNNSAIDKQSEKVMFLFGLGKRRICIGEPKWEVFLFLAILLQHLEFSVPPGVKVDLT
 PNYGLTMKPGTCEHVQAWPRFSK

TRTRPLE - GFP Tag - V

Restriction Sites:

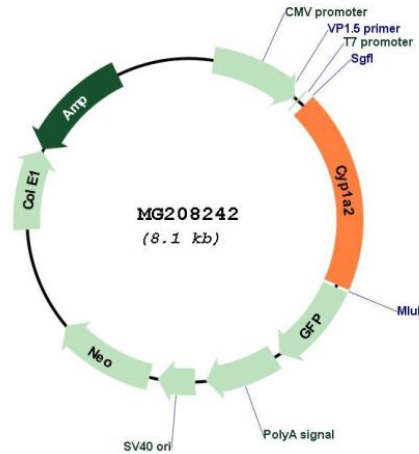
Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN: NM_009993

ORF Size: 1539 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.

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_009993.3](#)

RefSeq Size: 1894 bp

RefSeq ORF: 1542 bp

Locus ID: 13077

UniProt ID: [P00186](#)

Cytogenetics: 9 31.3 cM

Gene Summary: A cytochrome P450 monooxygenase involved in the metabolism of various endogenous substrates, including fatty acids, steroid hormones and vitamins. Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (NADPH--hemoprotein reductase). Catalyzes the hydroxylation of carbon-hydrogen bonds. Exhibits high catalytic activity for the formation of hydroxysterogens from estrone (E1) and 17beta-estradiol (E2), namely 2-hydroxy E1 and E2. Metabolizes cholesterol toward 25-hydroxycholesterol, a physiological regulator of cellular cholesterol homeostasis. May act as a major enzyme for all-trans retinoic acid biosynthesis in the liver. Catalyzes two successive oxidative transformation of all-trans retinol to all-trans retinal and then to the active form all-trans retinoic acid. Primarily catalyzes stereoselective epoxidation of the last double bond of polyunsaturated fatty acids (PUFA), displaying a strong preference for the (R,S) stereoisomer. Catalyzes bisallylic hydroxylation and omega-1 hydroxylation of PUFA. May also participate in eicosanoids metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent). Plays a role in the oxidative metabolism of xenobiotics. Catalyzes the N-hydroxylation of heterocyclic amines and the O-deethylation of phenacetin. Metabolizes caffeine via N3-demethylation.[UniProtKB/Swiss-Prot Function]