

## Product datasheet for **MR224897**

### **Cyp1a1 (NM\_001136059) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Cyp1a1 (NM_001136059) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Cyp1a1
Synonyms:	AHH; AHRR; CP11; Cyp1a2; CYPIA1; P450-1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>MR224897 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGCCTTCCATGTATGGACTTCCAGCCTTCGTGTGAGCCACAGAGCTGCTCCTGGCTGTACCCTATTCT  
 GCCTTGGATTCTGGGTGGTCAGAGCCACAAGAACCCTGGGTCCCAAAGGCTGAAGACTCCACCAGGGCC  
 CTGGGGCTTGGCCCTTCATTGGTGCATGCTGACTGTGGGGAAGAACCACATCTGCACTGACACGGCTG  
 AGTCAGCAGTATGGGACGTGCTGCAGATCCGCATCGGCTCCACTCCTGTGGTGGTGTGAGCGGCTGA  
 ACACCATCAAGCAGGCCCTGGTGGGACGGGAGATGACTTCAAGGGCCGGCCAGACCTCTACAGTTCAC  
 ACTTATCACTAATGGCAAGAGCATGACTTTAACCAGACTCTGGACCCGTGTGGCTGCCCGCCGGCGC  
 CTGGCCAGAATGCCCTGAAGAGCTTCCATAGCCTCGGACCCGACGTCAGCATCCTCTTGCTACTTGG  
 AGGAGCACGTGAGCAAGGAGGCTAACTATCTCGTCAGCAAACCTCAGAAGGTGATGGCAGAGTTGGCCA  
 CTTTGACCCTTACAAGTATTTGGTGTGTCAGTAGCCAATGTCATCTGTGCCATATGCTTTGGCCAACGT  
 TATGACCATGATGACCAAGAGCTGCTCAGCATAGTCAATCTGAGCAATGAGTTTGGGGAGGTTACTGGCT  
 CTGGATACCCAGCTGACTTCATTCTGTCTCCGTTACCTGCCTAACTCTTCCCTGGATGCCTTCAAGGA  
 CTTGAATGATAAGTTCTACAGTTCATGAAGAAGTTAATCAAAGAGCACTACAGGACATTTGAGAAGGGC  
 CACATCCGGGACATCACAGACAGCCTCATTGAGCATTGTCAGGACAGGAAGCTGGACGAGAATGCCAATG  
 TCCAGCTGTCAGATGATAAGGTCATCACGATTGTTTTGGACCTCTTTGGAGCTGGGTTTGACACAGTCAC  
 AACTGCTATCTCGTGGAGCCTCATGTACCTGGTAACCAACCCTAGGTTACAGAGAAAGATCCAGGAGGAA  
 CTAGACACAGTGAATGGCAGAGATCGGCAGCCCGGCTTCTGACAGACCTCAGCTGCCCTATCTGGAGG  
 CCTTCATTCTGGAGACCTTCCGGCATTTCCTTCGTCCTCCCTCACCATCCCCACAGCACCACAAGAGA  
 TACAAGTCTGAATGGCTTCTATATCCCCAAGGGTGTGTGTCTTTGTGAACAGTGGCAGGTTAACCAT  
 GACCGGAACTGTGGGTGACCCAAACGAGTTCGGCCTGAAAGGTTTCTCACCCACAGCGGCACTCTGG  
 ACAAGCGCTTGTGAGGAGAAGTCACTCTCTTGGTTTGGGCAAGCGAAAGTGCATCGGAGAGACCATTGG  
 CCGATCGGAGGTCTTCTCTTCTGGCCATCTTGTGTCAGCAAATAGAATTTAAGGTGTCTCCAGGGGAG  
 AAGGTGGATGACTCCTACCTATGGGCTGACTTTAAACACGCCGCTGTGAACACTTCCAAGTGCAGA  
 TGCGGTCTTCTGGTCTCAGCATCTTCAGGT

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>MR224897 protein sequence  
 Red=Cloning site Green=Tags(s)

MPSMYGLPAFVSATELLAVTVFCLGFVWRATRTWVPKGLKTPPGPWGLPFIGHMLTVGKNPHLSLTRL  
 SQQYGDVLRIRIGSTPVVVL SGLNTIKQALVRQDDFKGRPDLYSFTLITNGKSMTFNPDSGPVWAARRR  
 LAQNALKSFSIASDPTSASSCYLEEHVSKEANYLVSKLQKVM AEVGHFDPYKYL VVSVANVICAICFGQR  
 YDHHQELL SIVNLSNEFGEVTGSGYPADFIPLVRYLPNSSLDAFKDLNDKFYSFMKKL I KEHYRTFEKG  
 HIRDITDSLIEHCQDRKLDENANVQLSDDKVIITIVLDFGAGFDVTTAISWSL MYLVTNPRVQRKI QEE  
 LDTVIGRDRQPRLSDRPQLPYLEAFIETFRHSSFVFPFTIPHSTTRDTSLNGFYIPKGCCVFVNQVQVNH  
 DRELWGPNEFRPERFLTPSGTLDKRLSEKVTLFG LGKRKCIGETIGRSEVFLFLAILLQQIEFKVSPGE  
 KVDMTPTYGLTLKHARCEHFVQVMRSSGPQHLQA

**TRTRPLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_001136059

**ORF Size:** 1575 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\\_001136059.2](#), [NP\\_001129531.1](#)

**RefSeq Size:** 2637 bp

**RefSeq ORF:** 1575 bp

**Locus ID:** 13076

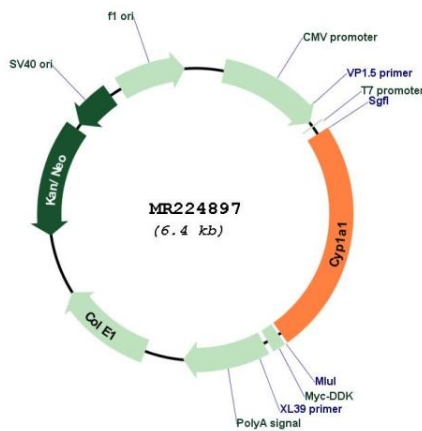
**UniProt ID:** [P00184](#)

**Cytogenetics:** 9 31.34 cM

**MW:** 59.2 kDa

**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 (CPR; NADPH-ferrihemoprotein reductase). Catalyzes the hydroxylation of carbon-hydrogen bonds. Exhibits high catalytic activity for the formation of hydroxyestrogens from estrone (E1) and 17beta-estradiol (E2), namely 2-hydroxy E1 and E2, as well as D-ring hydroxylated E1 and E2 at the C15alpha and C16alpha positions. Displays different regioselectivities for polyunsaturated fatty acids (PUFA) hydroxylation. Catalyzes the epoxidation of double bonds of certain PUFA. Converts arachidonic acid toward epoxyeicosatrienoic acid (EET) regioisomers, 8,9-, 11,12-, and 14,15-EET, that function as lipid mediators in the vascular system. Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer. May play an important role in all-trans retinoic acid biosynthesis in extrahepatic tissues. Catalyzes two successive oxidative transformation of all-trans retinol to all-trans retinal and then to the active form all-trans retinoic acid. May also participate in eicosanoids metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent).[UniProtKB/Swiss-Prot Function]

**Product images:**



Circular map for MR224897