

## Product datasheet for **MR206963**

### **Cyp27a1 (BC002183) Mouse Tagged ORF Clone**

#### **Product data:**

|                           |   |
|---------------------------|---|
| Product Type:             | Expression Plasmids                       |
| Product Name:             | Cyp27a1 (BC002183) 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:**

>MR206963 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCCGGATCGCC

ATGTGGACAACCTCCTTTGGGACTTACACCAATGTGAATCTGGCTAGTGCCCACTCTTGGAGCAAGTGA  
 TGAGACAGGAGGCAAGTACCCAATAAGAGACCACATGGATCAGTGGAAGGACCACCGAGACCACAAGGG  
 CCTCACCTATGGGATCTTCATCGCACAAGGAGAGCAATGGTACCATCTGCGTCAGGCTTTGAAACAGAGG  
 CTGCTGAAGCCTGACGAGGCCGCGCTCTACACGGATGCCTTAAACGAGGTTATCAGTGACTTTATCACCC  
 GGCTGGACCAGGTGCGGGCAGAGAGTGAATCAGGGGACCAGGTGCCAGACATGGCTCATCTTCTTACCA  
 CCTTGCCTTGGAAAGCCATCACCTATATCCTGTTTGAGAAAAGGATTGGCTGCCTGAAACCCTCCATTCT  
 GAGGACACTGCCGCTTCATCAGATCTGTTGCAATCATGTTCCAGAACTCAGTCTATATCACTTTCTCTC  
 CCAATGGACGCTCCTCTGCTGCCCTTTTGAAGCGATACCTGAATGGCTGGGATAACATTTTCTCCTT  
 TGGAAAGAAGCTGATTGATGAAAAAGTCCAGGAGCTAAAAGCCAGCTACAGGAACTGGGCCAGATGGA  
 GTCCGGGTATCTGGCTACCTGCCTTCCGCTGACCAATGAATTGCTCAGTACTCAGGAGACCATCGGCA  
 CCTTTCCTGAGCTGCTTTTGGCTGGGGTGGACACGACATCCAACACACTGACATGGGCCCTGTACCACCT  
 TTCAAAGAGCCCAGAGATCCAGGAGGCCTTGCACAAGGAAGTACTGGTGTGGTGCCTTCGGAAGGTG  
 CCCCAGACAAGGACTTTGCCACATGCCTCTGCTAAAAGCTGTGATTAAGGAGACCCTGCGCCTCTACC  
 CTGTGGTTCCCAAACTCCCGGATCATCACAGAAAAGGAAACTGAAATTAATGGCTTTCTTCCCAA  
 GAATACACAGTTTGTGTTATGCCACTACGTGGTGTCCCGGATCCCAGTGTCTTCTGAGCCCAACAGC  
 TTCCAGCCTCACCGATGGCTGAGGAAGAAAGAGGCTGATAACCCTGGGATCCTACATCCATTCGGCTCTG  
 TGCCCTTCGGCTATGGGGTTCGGTCTTGCTGGGTCGGAGGATTGCAGAACTGGAGATGCAACTGATGCT  
 GTCAAGGCTGGTACAGAAGTATGAGATTGCCCTGGCTCCCGGATGGGAGAAGTAAAGACTGTGTCCCGC  
 ATCGTCTGGTCCAGCAAGAAGGTGAGGCTGCATTTCTGCAGAGACAG

AGCGGACCGACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

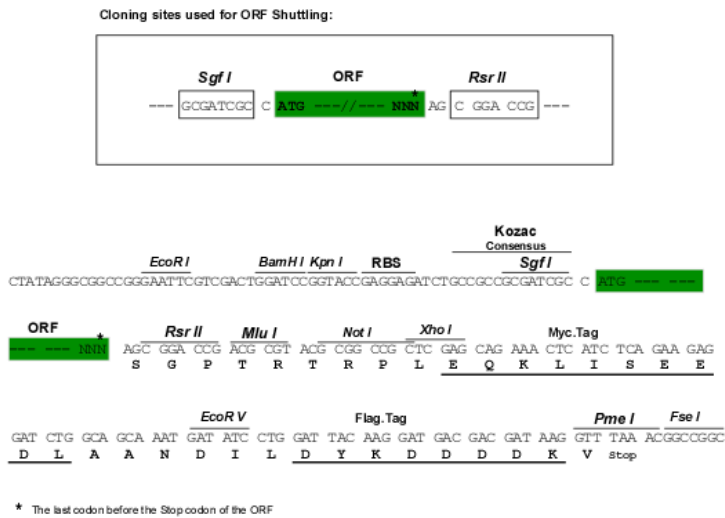
>MR206963 protein sequence  
 Red=Cloning site Green=Tags(s)

MWTTSFQTYTNVNLASAPLLEQVMRQEGKYPIRDHMDQWKDHRDHKGLTYGIFIAQGEQWYHLRQALKQR  
 LLKPDEAALYTDALNEVISDFITRLDQVRAESESQDQVPDMAHLLYHLALEAITYILFEKRIGCLKPSIP  
 EDTAAFIRSVAIMFQNSVYITFLPKWTRPLLFWKRYLNGWDNIFSFQKGLIDEKVQELKAQLQETGPDG  
 VRVSGYLHFLLTNELLSTQETIGTFPELLLAGVDTTSNLTLWALYHLSKSPEIQEALHKEVTGVVFPFKV  
 PQHKDFAHMPLLKAVIKETLRLYPVPTNSRIITEKETEINGFLFPKNTQFVLCHYVVSVDPSVFPENP  
 FQPHRWLRKKEADNPGILHFPFVPGYGVRSCLGRRIAELEMQLMLSRVQKYEIALAPGMGEVKTVSR  
 IVLVPSKKVRLHFLQRQ

SGPTRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-RsrII

**Cloning Scheme:**


**ACCN:** BC002183

**ORF Size:** 1311 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:** [BC002183](#), [AAH02183](#)

**RefSeq Size:** 1579 bp

**RefSeq ORF:** 1313 bp

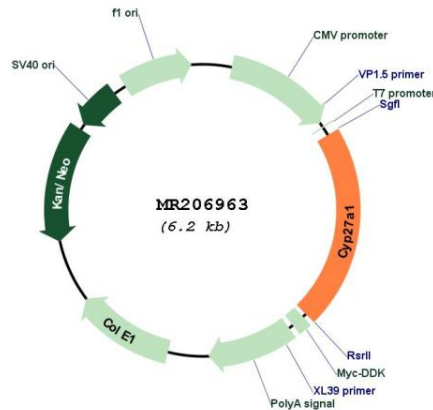
**Locus ID:** 104086

**Cytogenetics:** 1 38.54 cM

**MW:** 50.2 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 MR206963