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# Product datasheet for RC204456

## DNA Polymerase gamma (POLG) (NM_002693) Human Tagged ORF Clone

### Product data:

| | |
|---|---|
| **Product Type:** | Expression Plasmids |
| **Product Name:** | DNA Polymerase gamma (POLG) (NM_002693) Human Tagged ORF Clone |
| **Tag:** | Myc-DDK |
| **Symbol:** | DNA Polymerase gamma |
| **Synonyms:** | MDP1; MIRAS; MTDPS4A; MTDPS4B; PEO; POLG1; POLGA; SANDO; SCAE |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-Entry (PS100001) |
| **E. coli Selection:** | Kanamycin (25 ug/mL) |

**ORF Nucleotide Sequence:**

>RC204456 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGAGCCGCCTGCTCTGGAGGAAGGTGGCCGGCGCCACCGTCGGGCCAGGGCCGGTTCCAGCTCCGGGGC
GCTGGGTCTCCAGCTCCGTCCCCGCGTCCGACCCCAGCGACGGGCAGCGGCGGCGGCAGCAGCAGCAGCA
GCAGCAGCAGCAGCAGCAACAGCAGCCTCAGCAGCCGCAAGTGCTATCCTCGGAGGGCGGGCAGCTGCGG
CACAACCCATTGGACATCCAGATGCTCTCGAGAGGGCTGCACGAGCAAATCTTCGGGCAAGGAGGGGAGA
TGCCTGGCGAGGCCGCGGTGCGCCGCAGCGTCGAGCACCTGCAGAAGCACGGGCTCTGGGGGCAGCCAGC
CGTGCCCTTGCCCGACGTGGAGCTGCGCCTGCCGCCCCTCTACGGGGACAACCTGGACCAGCACTTCCGC
CTCCTGGCCCAGAAGCAGAGCCTGCCCTACCTGGAGGCGGCCAACTTGCTGTTGCAGGCCCAGCTGCCCC
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GCAAGGCCAGAAGTCCCAGAGGAAAGCCAGAAGAGGCCCAGCGATCTCATCCTGGGACTGGCTGGACATC
AGCAGTGTCAACAGTCTGGCAGAGGTGCACAGACTTTATGTAGGGGGGCCTCCCTTAGAGAAGGAGCCTC
GAGAACTGTTTGTGAAGGGCACCATGAAGGACATTCGTGAGAACTTCCAGGACCTGATGCAGTACTGTGC
CCAGGACGTGTGGGCCACCCATGAGGTTTTCCAGCAGCAGCTACCGCTCTTCTTGGAGAGGTGTCCCCAC
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GACCTGCAAGAATTTAAGCAGAAGAAAGCTAAGAAGGTGAAGAAGGAACCAGCCACAGCCAGCAAGTTGC
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ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC204456 protein sequence
Red=Cloning site Green=Tags(s)

MSRLLWRKVAGATVGPGPVPAPGRWVSSSVPASDPSDGQRRRQQQQQQQQQQQQPQQPQVLSSEGGQLR
HNPLDIQMLSRGLHEQIFGQGGEMPGEAAVRRSVEHLQKHGLWGQPAVPLPDVELRLPPLYGDNLDQHFR
LLAQKQSLPYLEAANLLLQAQLPPKPPAWAWAEGWTRYGPEGEAVPVAIPEERALVFDVEVCLAEGTCPT
LAVAISPSAWYSWCSQRLVEERYSWTSQLSPADLIPLEVPTGASSPTQRDWQEQLVVGHNVSFDRAHIRE
QYLIQGSRMRFLDTMSMHMAISGLSSFQRSLWIAAKQGKHKVQPPTKQGQKSQRKARRGPAISSWDWLDI
SSVNSLAEVHRLYVGGPPLEKEPRELFVKGTMKDIRENFQDLMQYCAQDVWATHEVFQQQLPLFLERCPH
PVTLAGMLEMGVSYLPVNQNWERYLAEAQGTYEELQREMKKSLMDLANDACQLLSGERYKEDPWLWDLEW
DLQEFKQKKAKKVKKEPATASKLPIEGAGAPGDPMDQEDLGPCSEEEEFQQDVMARACLQKLKGTTELLP
KRPQHLPGHPGWYRKLCPRLDDPAWTPGPSLLSLQMRVTPKLMALTWDGFPLHYSERHGWGYLVPGRRDN
LAKLPTGTTLESAGVVCPYRAIESLYRKHCLEQGKQQLMPQEAGLAEEFLLTDNSAIWQTVEELDYLEVE
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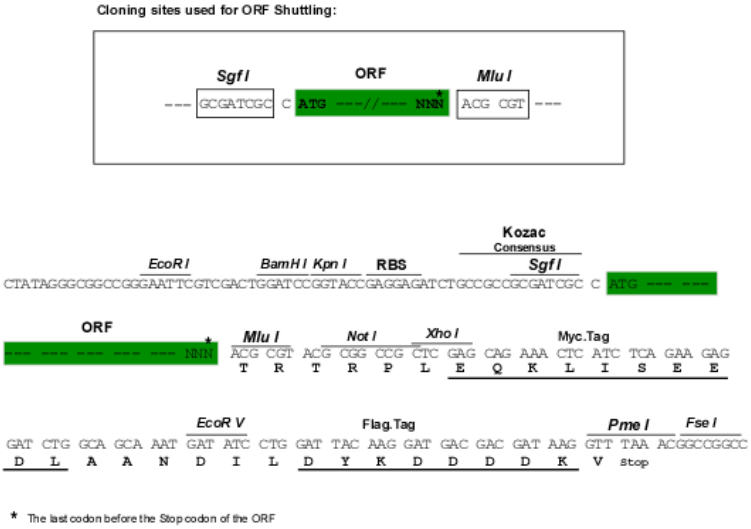
KAQQMYAATKGLRWYRLSDEGEWLVRELNLPVDRTEGGWISLQDLRKVQRETARKSQWKKWEVVAERAWK
GGTESEMFNKLESIATSDIPRTPVLGCCISRALEPSAVQEEFMTSRVNWVVQSSAVDYLHLMLVAMKWLF
EEFAIDGRFCISIHDEVRYLVREEDRYRAALALQITNLLTRCMFAYKLGLNDLPQSVAFFSAVDIDRCLR
KEVTMDCKTPSNPTGMERRYGIPQGEALDIYQIIELTKGSLEKRSQPGP

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** https://cdn.origene.com/chromatograms/mk6821_d02.zip

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**

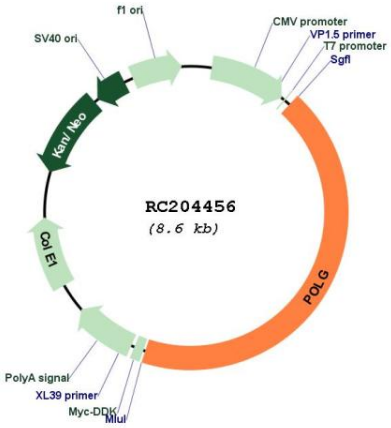



**ACCN:** NM_002693

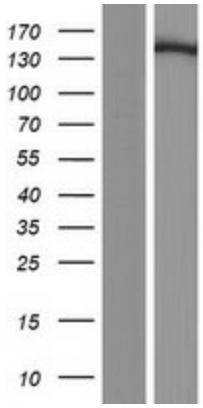
**ORF Size:** 3717 bp

| | |
|---|---|
| **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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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. |
| **Note:** | Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required. |
| **RefSeq:** | NM_002693.3 |
| **RefSeq Size:** | 4464 bp |
| **RefSeq ORF:** | 3720 bp |
| **Locus ID:** | 5428 |
| **UniProt ID:** | P54098 |
| **Cytogenetics:** | 15q26.1 |
| **Domains:** | DNA_pol_A |
| **Protein Families:** | Druggable Genome |
| **Protein Pathways:** | Metabolic pathways |
| **MW:** | 139.6 kDa |
| **Gene Summary:** | Mitochondrial DNA polymerase is heterotrimeric, consisting of a homodimer of accessory subunits plus a catalytic subunit. The protein encoded by this gene is the catalytic subunit of mitochondrial DNA polymerase. The encoded protein contains a polyglutamine tract near its N-terminus that may be polymorphic. Defects in this gene are a cause of progressive external ophthalmoplegia with mitochondrial DNA deletions 1 (PEOA1), sensory ataxic neuropathy dysarthria and ophthalmoparesis (SANDO), Alpers-Huttenlocher syndrome (AHS), and mitochondrial neurogastrointestinal encephalopathy syndrome (MNGIE). Two transcript variants encoding the same protein have been found for this gene. [provided by RefSeq, Jul 2008] |

## Product images:




Circular map for RC204456




Western blot validation of overexpression lysate (Cat# [LY426664]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from un-transfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with [RC226368] using transfection reagent MegaTran 2.0 (Cat# [TT210002]).