

## Product datasheet for SC118521

### DNA Polymerase gamma (POLG) (NM\_002693) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	DNA Polymerase gamma (POLG) (NM_002693) Human Untagged Clone
Tag:	Tag Free
Symbol:	DNA Polymerase gamma
Synonyms:	MDP1; MIRAS; MTDPS4A; MTDPS4B; PEO; POLG1; POLGA; SANDO; SCAE
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_002693, the custom clone sequence may differ by one or more nucleotides

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ATGAGCCGCTGCTCTGGAGGAAGTGGCCGGCCACCCTCGGGCCAGGGCCGGTTCCAGCTCCGGGGC
GCTGGGTCTCCAGCTCCGTCCCCCGTCCGACCCAGCGACGGGCAGCGCGGGCAGCAGCAGCAGCA
GCAGCAGCAGCAGCAACAGCAGCCTCAGCAGCCGCAAGTGTATCCTCGGAGGGCGGGCAGCTGCGG
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TGCTGGCGAGGGCCGGTGGCCCGCAGCGTGCAGCACCTGCAGAAGCACGGGCTCTGGGGCAGCCAGC
CGTGCCCTTGCCGACGTGGAGCTGCGCCTGCCCCCTCTACGGGGACAACCTGGACCAGCACTCCGC
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CAGTACCTGATCCAGGGTCCCAGCATGCGTTTCTGGACACCATGAGCATGCACATGGCCATCTCAGGGC
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GACCTGCAAGAATTTAAGCAGAAGAAAGCTAAGAAGGTGAAGAAGGAACCCAGCCACGCCAGCAAGTTGC
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GGAGTTTCAACAAGATGTCATGGCCCGCGCCTGCTTGCAGAAGCTGAAGGGGACCACAGAGCTCCTGCC
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GGTCCAGAGAGAACTGCAAGGAAGTACAGTGGAGAAGTGGGAGTGGTTGCTGAACGGGCATGGAAG
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AGGGTGAAGCGCTGGATATTTACCAGATAATTGAACTACCAAAGGCTCCTTGAAAAACGAAGCCAGCC
TGACCATAG
    
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**5' Read Nucleotide Sequence:**

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>OriGene 5' read for NM_002693 unedited
GTCAGTTTTGTATACGACTCCTATAGGGCGGCCGGAATTCGCACGAGGGGAAGTTGCG
GCTGCCAGCGAAGCGGACCGCCGGGTGGAGGCCACACGCTACCCCGAGGCTGCGTAGGC
CGCGCAAGGGGACGCCGTGCCGTGGGCTGGGGTGGGGGAGCAGACCGGGAAGC
ACCGATTTGGGGTGAAGGCAGGCATGGTCAAACCCATTTCACTGACAGGAGAGCAGAGA
CAGGACGTGTCTCTCCACGTCTTCCAGCCAGTAAAAGAAGCCAAGCTGGAGCCCAAAG
CCAGGTGTTCTGACTCCCAGCGTGGGGTCCCTGCACCAACCATGAGCCGCTGCTCTGG
AGGAAGGTGGCCGGCGCCACCGTCCGGCCAGGGCCGGTCCAGCTCCGGGGCGCTGGGTC
TCCAGCTCCGTCCCCGCTCCGACCCAGCGACGGGCAGCGGGCGGCGGCAGCAGCAGCAG
CAGCAGCAGCAGCAGCAACAGCAGCCTCAGCAGCCGCAAGTGTATCCTCGGAGGGC
GGGCAGCTGCGGCACAACCCATTGGACATCCAGATGCTCTCGAGAGGGTGCACGAGCAA
ATCTTCGGGCAAGGGAGGGGAGATGCCTGGCGAGCNCGCGGTGCGCCGACGCTCGAGCA
CCTGCAGAAGCACGGGCTCTGGNNGCAGCCAGCCGTGCCCTTGCCCCAGCTGGNAGCTG
CGCTGCCCCGCTCTACGGNNGACACCTGGACCAGCACTTCCGCTCCTGGCCCAAGAG
CAGAGCCTGCCTACCTGGNAGCGCAACTTGTGTGTTTGCAGGCCAGCTGNCCCAGGCC
CCCCTTGTGTTTTNNNNNNNNNNNTTTTNCCTCCCTGCCNCCCAGGGGGGGGGGGG
CCCTCCCGTGGCCTTCCGGGGGACGGCCTTG
    
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<b>3' Read Nucleotide Sequence:</b>	>OriGene 3' read for NM_002693 unedited ATGTACGCGGCCCAATCTATATCGAGCTCTTTTTTTTTTTTTTTTTTTTTTTTCTTCT TTTTATTTCCACTGCCTTGGAGCAGTTTATCACGTTAAAGCATTAACTTTCCCTTC TAGGGCACTGCATCAAAGCATGGGGGACAGAACAAGAACCAGCCAAGAAGAAAAGGAAA AAATAAATGAAATGCCTGAGTTAATGTGAACTTTGGGGCTTCTGCTTCATTTTTACCCAA CAAGCAACAATGCCCCTTGCTGTAGTCCACACCGATGTGGCATCTTGGTTCTGAACC CACTGAATTCACTGCACCTTCAGTTAAAAGGAATCTTCTTGGCAGGTCCTGCTACTGAA AAATGGCTGGCCTTAGGCAAGCCCTTTTGCAAAAGCACAGCTGAAAGCCTGATTTTGGG AGCCTGCACCACCCGATGAAGCTCCACGGGAGCAAATACAGAGCCTCCAGGCAGTGCTA TGGTCCAGGCTGGCTTAGTTTTTCCAAGGAGCCTTTGGCGAGTTCAATTATCTGGTAAAT ATCCAGCGCTTACCCTGTGGAATCCCGTATCCTCTTTTCATCCCATTTGGGTTGAAAAG GGGTTTACAATCCATGGTCACTTCTTTCCTGAGGCACCGGTCAATTTAGACTGCCCCGCA AAAGGCCACTGACTTGGGCAAGTATTTTCATACCAAGCTTGTAGGTAACATGCACCTGGT ACATAAGTTGTGTTCCCTGCATGCCCAGGCCATACTGTTCTTGGCCCTCTCCCCCCC ACTACCGTATCCTCCCCTGTTTGTTCAGCATCTACCCCTATTTTGTATACTCTTCTAT AGTCCCCTCTTCGATCACTACCCCGCCGCCATTCTTATAGGAACCACTCCGTACAACA GTATTTACAGCCTGTTATCTTCTTAACTCCACATCCCACACCCTACCTCCTCCCGGCC CCTCTCTCACCTCCGCGCTCATATAATTCAACCCCAAGTATCCTATCCAT
<b>Restriction Sites:</b>	NotI-NotI
<b>ACCN:</b>	NM_002693
<b>Insert Size:</b>	4110 bp
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<u><a href="#">NM_002693.1</a></u> , <u><a href="#">NP_002684.1</a></u>
<b>RefSeq Size:</b>	4465 bp
<b>RefSeq ORF:</b>	3720 bp
<b>Locus ID:</b>	5428
<b>UniProt ID:</b>	<u><a href="#">P54098</a></u>
<b>Cytogenetics:</b>	15q26.1
<b>Domains:</b>	DNA_pol_A

**Protein Families:** Druggable Genome

**Protein Pathways:** Metabolic pathways

**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]

Transcript Variant: This variant (1) represents the longer transcript. Both variants encode the same protein.