

## Product datasheet for **SC109386**

### DNA Ligase III (LIG3) (NM\_013975) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	DNA Ligase III (LIG3) (NM_013975) Human Untagged Clone
Tag:	Tag Free
Symbol:	DNA Ligase III
Synonyms:	LIG2; LIG3alpha
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)

**Fully Sequenced ORF:** >OriGene sequence for NM\_013975 edited  
 ATTTAAAGAGACAGGCGCTCCAACCGTCGTGGGCTGCCCGCGCCTGTAATGAGCAAGTT  
 CCGAGGCCCTACGGTGAGCGCCGGAGCCGGAGAGGCAGCTATATGCTTTGGCTTTCAAGA  
 TCTTCTTTCCACAAACCTCCGTGCACTCAGCCGAAAAGAACTGTGCCTATTCCGAAAAC  
 ATCACTGGCGTGATGTAAGACAATTAGCCAGTGGTCAGAAACAGATCTGCTTCATGGAC  
 ATCCCCTCTTCTGAGAAGAAAGCCTGTTCTATCATTCCAGGGAAGCCATCTAAGATCAC  
 GTGCCACCTACCTTGTTTTCTTGCCAGGGTTGCATGTGGGACTCTGCAGTGGCCCTGTG  
 AGATGGCTGAGCAACGGTTCTGTGTGGACTATGCCAAGCGTGGCAGCTGGCTGCAAAA  
 AATGCAAGGAAAAGATTGTGAAGGGCGTATGCCGAATTGGCAAAGTGGTCCCAATCCCT  
 TCTCAGAGTCTGGGGTGATATGAAAGAGTGGTACCACATTAATGCATGTTTGAGAAAC  
 TAGAGCGGGCCCGGGCCACCACAAAAAATCGAGGACCTCACAGAGCTGGAAGGCTGGG  
 AAGAGCTGGAAGATAATGAGAAGGAACAGATAACCCAGCACATTGCAGATCTGTCTCTA  
 AGGCAGCAGGTACACAAAGAAGAAAGCTGTTGTCCAGGCTAAGTTGACAACCACTGGCC  
 AGGTGACTTCTCCAGTGAAGGGCGCCTCATTTGTCAACAGTACCAATCCCCGAAATTTT  
 CTGGCTTTTCAGCCAAGCCCAACAACTCTGGGGAAGCCCCCTCGAGCCCCACCCCTAAGA  
 GAAGTCTGTCTTCAAGCAAAATGTGACCCAGGCATAAGGACTGTCTGTACGG: GAGTTT  
 CGAAAGTTATGCGCCATGGTGGCCGATAATCCTAGCTACAACACGAAGACCCAGATCATC  
 CAGGACTTCCTTCGAAAGGCTCAGCAGGAGATGGTTCCACGGTGATGTGTACCTAACA  
 GTGAAGCTGCTGCTGCCAGGATCATTAAAGACTGTTTCAACTGAACGATAAGCAGATT  
 GTGAAGCTTTTTCAGTCGATTTTTAACTGCAACCCAGATGATATGGCACGGGACCTAGAG  
 CAGGGTGACGTGTGAGAGACAATCAGAGCTTCTTTGAGCAGAGCAAGTCTTTCCCCCA  
 GCTGCCAAGAGCCTCCTTACCATCCAGGAAGTGGATGAGTTCTTCTGCGGCTGTCCAAG  
 CTCACCAAGGAGGATGAGCAGCAACAGGCCCTACAGGACATTGCCTCCAGGTGTACAGCC  
 AATGACCTTAAATGCATCATCAGGTTGATCAAACATGATCTGAAGATGAACTCAGGTGCA  
 AAACATGTGTTAGACGCCCTTGACCCCAATGCCTATGAAGCCTTCAAAGCCTCGCGCAAC  
 CTGCAGGATGTGGTGGAGCGGGTCTTCAACCGCAGGAGGTGGAGAAGGAGCCGGGC  
 CAGAGACGAGCTCTGAGCGTCCAGGCTCGCTGATGACACCTGTGCAGCCATGTTGGCC



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GAGGCCTGCAAGTCCGTTGAGTATGCAATGAAGAAATGTCCCAATGGCATGTTCTCTGAG  
 ATCAAGTACGATGGAGAGCGAGTCCAGGTGCATAAGAATGGAGACCACTTCAGCTACTTC  
 AGCCGCAGTCTCAAGCCCGTCTTCTCACAAGGTGGCCCACTTTAAGGACTACATTCCC  
 CAGGCTTTTCTGGGGGCCACAGCATGATCTTGGATTCTGAAGTGCTTCTGATTGACAAC  
 AAGACAGGCAAACCACTGCCCTTTGGGACTCTGGGAGTACACAAGAAAGCAGCCTCCAG  
 GATGCTAATGTCTGCCTGTTGTTTTGATTGTATCTACTTTAATGATGTCAGCTTGATG  
 GACAGACCTCTGTGTGAGCGGCGAAGTTCTTTCATGACAACATGGTTGAAATTTCAAAC  
 CGGATCATGTTCTCAGAAATGAAGCGAGTCAAAAAGCTTTGGACTTGGCTGACATGATA  
 ACCCGGGTGATCCAGGAGGGATTGGAGGGGCTGGTGTGAAGGATGTGAAGGGTACATAT  
 GAGCCTGGGAAGCGGCACTGGCTGAAAGTGAAGAAAGACTATTTGAACGAGGGGGCCATG  
 GCCGACACAGCTGACCTGGTGGTCTTGGAGCCTTCTATGGGCAAGGAGCAAAGCGGC  
 ATGATGTCAATCTTCTCATGGGCTGCTACGACCCTGGCAGCCAGAAGTGGTGCACAGTC  
 ACCAAGTGTGCAGGAGGCCATGATGATGCCACGCTTGCCCGCTGCAGAATGAAGTAGAC  
 ATGGTGAAGATCAGCAAGGACCCAGCAAATACCCAGCTGGTTGAAGGTCAACAAGATC  
 TACTATCCTGACTTCATCGTCCCAGACCCAAAGAAAGCTGCCGTGTGGGAGATCACAGGG  
 GCTGAATTTCTCAAATCGGAGGCTCATACAGCTGACGGGATCTCCATCCGATTCCCTCGC  
 TGCACCCGAATCCGAGATGATAAGGACTGGAAATCTGCCACTAACCTTCCCAACTCAAG  
 GAACTGTACAGTTGTCCAAGGAGAAGGCAGACTTCACTGTAGTGGCTGGAGATGAGGGG  
 AGCTCCACTACAGGGGTAGCAGTGAAGAGAATAAGGGTCCCTCAGGGTCTGCTGTGTCC  
 CGCAAGGCCCCAGCAAGCCCTCAGCCAGTACCAAGAAAGCAGAAGGGAAGCTGAGTAAC  
 TCCAACAGCAAAGATGGCAACATGCAGACTGCAAAGCCTTCCGCTATGAAGTGGGGGAG  
 AAGCTGGCCACAAAGTCTTCTCCAGTGAAGTAGGGGAGAAGCGGAAAGCTGCTGATGAG  
 ACGTGTGCCAAACAAAGTATTGCTGGACATCTTCACTGGGGTCCGGCTTTACTTGCCA  
 CCTCCACACCAGACTTCAGCCGTCTCAGACGCTACTTTGTGGCATTTCGACGGGGACCTG  
 GTACAGGAATTTGATATGACTTCAGCCACGCACGTGCTGGGTAGCAGGGACAAGAACCCT  
 GCGGCCACGAGGCTCCCCAGAGTGGATTTGGGCATGTATCCGAAACGGAGACTGGTA  
 GCTCCCTGCTAGGTTTGTGTCTTCCCTCTCCCTCAGGCCATACTCTCCTTTACCATACT  
 ACTGGACTGGACTCAGGCTGGAGGCAGATAGACACAGTATAGGGGGAATGGGCTTGCTTC  
 TCCCAAACCCACCAGTTCTCCACTGTCTTCTGGACCAGGAATTAGTTGCTGTGGGTGC  
 CACAGCTGAAGTCAGTTTGTCTTGTGGTTTAAATAGATCTTTCAGAGCTGGGTGCTGGG  
 TTTGCCATCTTTTGTCTTTTAAAAGCAGCTTAGTTACCCTTTTTATAAATAAATA  
 TCTTGCAGTAAAAAAAAAAAAAAAAAAAA

**5' Read Nucleotide  
 Sequence:**

>OriGene 5' read for NM\_013975 unedited  
 TACGACTACTATAGGGCGCCGCAATTCGGCACGAGGATTTAAAGAGACGGCGCTCCA  
 ACCGTCGTGGGCTGCCCGCGCCTGTAATGAGCAAGTCCGAGGCCTACGGTGAAGCGCCG  
 GAGCCGGAGAGGCAGCTATATGTCTTTGGCTTTCAAGATCTTCTTCCACAAACCCTCCG  
 TGCACTCAGCCGAAAAGAACTGTGCCTATTCGAAAACATCACTGGCGTGTGTAAGACA  
 ATTCAGCCAGTGGTCAGAAACAGATCTGCTTCATGGACATCCCCTCTTCTGAGAAGAAA  
 GCCTGTTCTATCATTCCAGGGAAGCCATCTAAGATCACGTGCCACCTACCTTGTTTTCTT  
 GCCAGGGTTGCATGTGGGACTCTGCAGTGGCCCTGTGAGATGGCTGAGCAACGGTTCTG  
 TGTGGACTATGCCAAGCGTGGCACAGCTGGCTGCAAAAAATGCAAGGAAAAGATTGTGAA  
 GGGCGTATGCCGAATTGGCAAAGTGGTGGCCAATCCCTTCTCAGAGTCTGGGGTGATAT  
 GAAAGAGTGGTACCACATTAATGCATGTTTGAGAAACTAGAGCGGGCCCGGCCACCAC  
 AAAAAATATCGAGGACCTCACAGAGCTGGAAGGCTNNGAAGAGCTGGAAGATATGAGAA  
 GGAACAGANTACCCAGCACATTGCAGATCTGTCTTCTAGGCAGCAGGTACACCAAAGAAG  
 AAAGTGGTGTCCAGNCTAAAAGTGACACCACTGGNCCAGTGACTTCTCCAGTGAAGGCG  
 GCCTCATTGTGACCAAGTACCAATCCCCGATATTNTCTGGNCTTTTTCAGCCAGCCCCA  
 TCACTCTGGGGGAATGCCNCTCGAGCCACCCCTAAGAAGAAGTCTGTCTTCAGCAAAT  
 GTGACCCACGATAAGGACTGCTGCTCACGNAGTTTTCAAAGTCTGCCCATGGNGGNC  
 GATATCTATCTCACACGAGAACCAGATCTCCAGACTTCTCGAAGCTANAAGGG

<b>3' Read Nucleotide Sequence:</b>	<p>&gt;OriGene 3' read for NM_013975 unedited  GACCGCGGGCCGCATTTTAGNATCGAGTTTTTTTTTTTTTTTTTTTACTGCAAGATATTTT  ATTTATAAAAAGGGTAACTAAGCTGCTTTTCAAAGAAAACAAAAGATGGCAAACCCAGC  ACCCAGCTCTGAAAGATCTATTTAAACCAGCAAGACAACTGACTTCAGCTGTGGCACCC  ACAGCAACTAATTCCTGGTCCAGAAGAGACAGTGGAGAAGTGGTGGGTTTGGGAGAAGCA  AGCCCATTTCCCTATACTGTGTCTATCTGCCTCCAGCCTGAGTCCAGTCCAGTAGTATG  GTAAAGGAGAGTATGGCCTGAGGGAGAGGGAAGACAGCAAACCTAGCAGGGAGTACCAG  TCTCCGTTTCCGATACATGCCCAAATCCACTCTGGGGAGACCTGCTGGGCCGCAGGGCT  CTTGCCCTGCTACCCAGCACGTGCGTGGCTGAAGTCATATCAAATCCCTGTACCACGCC  CCCGTCGAATGCCACAAAGTATCGCCCGACACGGCTGAAGTCTGGTGTGGAGGGTGGTAA  GTAAAGCCGCACCCAGTGAAGATGTCCAGCAATACCTTTGTTTGGCACAGCGTCTCATC  ATCAGTCTCTCCGTTCTCCCTACTTTCACTGCAGAAGACTTTGTGGCCAGCTTTTCCC  CCACCTTCATAGCCGAAGGCTTTGCAGCCTGCATGCCCCATCCCTCGCTGTTGGAGTTA  CCCAACTTCCCCTTTCTTTCTTGTCACTGGCTGCGGGCCTGCTTGGGGCCCCCGCGG  ACACAGCACACCCCTGAGGACCCTNACTTTTCTCCACTGGCTACCCCTGGAGCGCAGCT  CCCTTAATCTCCGCCCTAACGTGAAGTCCGCCTTCATCCTTGACAACCGGACCACGC  TTCTCGATCTCGGGCACAGTTACCGTTATACATTCCATCCTTCACATCTCGGAT</p>
<b>Restriction Sites:</b>	NotI-NotI
<b>ACCN:</b>	NM_013975
<b>Insert Size:</b>	3510 bp
<b>OTI Disclaimer:</b>	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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. <a href="#">More info</a></p>
<b>OTI Annotation:</b>	This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
<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>	<a href="#">NM_013975.2</a> , <a href="#">NP_039269.2</a>
<b>RefSeq Size:</b>	3701 bp
<b>RefSeq ORF:</b>	3030 bp
<b>Locus ID:</b>	3980
<b>UniProt ID:</b>	<a href="#">P49916</a>
<b>Cytogenetics:</b>	17q12
<b>Domains:</b>	DNA_ligase, BRCT, zf-PARP
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Base excision repair
<b>Gene Summary:</b>	<p>This gene is a member of the DNA ligase family. Each member of this family encodes a protein that catalyzes the joining of DNA ends but they each have a distinct role in DNA metabolism. The protein encoded by this gene is involved in excision repair and is located in both the mitochondria and nucleus, with translation initiation from the upstream start codon allowing for transport to the mitochondria and translation initiation from a downstream start codon allowing for transport to the nucleus. Additionally, alternate transcriptional splice variants, encoding different isoforms, have been characterized. [provided by RefSeq, Jul 2008]</p> <p>Transcript Variant: This variant (alpha) represents the longer transcript and encodes the longer isoform (alpha).</p>