

Product datasheet for RC209530

DNA Ligase III (LIG3) (NM_013975) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	DNA Ligase III (LIG3) (NM_013975) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	LIG3
Synonyms:	LIG2; LIG3alpha
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC209530 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGCTTTGGCTTCAAGATCTTCTTTCCACAAACCCCTCCGTGCACTCAGCCGAAAAGAAGTGTGCCTAT
TCCGAAAACATCACTGGCGTGATGTAAGACAATTCAGCCAGTGGTCAGAAACAGATCTGCTTCATGGACA
TCCCTCTTCTGAGAAGAAAGCCTGTTCTATCATTCCAGGGAAGCCATCTAAGATCACGTGCCACCTAC
CTTGTTTTCTTGCAGGGTTGCATGTGGGACTCTGCAGTGGCCCTGTGAGATGGCTGAGCAACGGTTCT
GTGTGGACTATGCCAAGCGTGGCACAGCTGGCTGCAAAAAATGCAAGGAAAAGATTGTGAAGGGCGTATG
CCGAATTGGCAAAGTGGTGCCCAATCCCTTCTCAGAGTCTGGGGTGATATGAAAGAGTGGTACCACATT
AAATGCATGTTTGAAGAACTAGAGCGGGCCCGGGCCACCACAAAAAATCGAGGACCTCACAGAGCTGG
AAGGCTGGGAAGAGCTGGAAGATAATGAGAAGGAACAGATAACCCAGCACATTGCAGATCTGTCTTCTAA
GGCAGCAGGTACACCAAAGAAGAAAGCTGTTGTCCAGGCTAAGTTGACAACCACTGGCCAGGTGACTTCT
CCAGTGAAAGGCGCCTCATTTGTCACCAAGTACCAATCCCCGAAATTTTCTGGCTTTTTCAGCAAGCCCA
ACAACCTGGGGAAGCCCCCTCGAGCCCCACCCCTAAGAGAAGTCTGTCTTCAAGCAAATGTGACCCAG
GCATAAGGACTGTCTGCTACGGGAGTTTCGAAAGTTATGCGCCATGGTGGCCGATAATCCTAGCTACAAC
ACGAAGACCCAGATCATCCAGGACTTCTTCCGAAAGGCTCAGCAGGAGATGGTTTCCACGGTGATGTGT
ACCTAACAGTGAAGCTGCTGCTGCCAGGAGTCATTAAGACTGTTTACAACCTTGAACGATAAGCAGATTGT
GAAGCTTTTTCAGTCGCATTTTTAACTGCAACCCAGATGATATGGCACGGGACCTAGAGCAGGGTGACGTG
TCAGAGACAATCAGAGTCTTCTTTGAGCAGAGCAAGTCTTTCCCCCAGCTGCCAAGAGCCTCCTTACCA
TCCAGGAAGTGGATGAGTTCTTCTGCGGCTGTCCAAGCTCACCAAGGAGGATGAGCAGCAACAGGCCCT
ACAGGACATTGCCTCCAGGTGTACAGCCAATGACCTTAAATGCATCATCAGGTTGATCAAACATGATCTG
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GAGACGAGCTCTGAGCGTCCAGGCTCGCTGATGACACCTGTGCAGCCCATGTTGGCGGAGCGCTGCAAG



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TCCGTTGAGTATGCAATGAAGAAATGTCCCAATGGCATGTTCTCTGAGATCAAGTACGATGGAGAGCGAG
 TCCAGGTGCATAAGAATGGAGACCACTTCAGCTACTTCAGCCGCAGTCTCAAGCCCGTCTTCTCACAA
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 AAGTCTTCTCCAGTGAAGTAGGGGAGAAGCGAAAGCTGCTGATGAGACGCTGTGCCAAACAAAGGTAT
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ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC209530 protein sequence
 Red=Cloning site Green=Tags(s)

MSLAFKIFFPQTLRALSRKELCLFRKHHRDVRQFSQWSETDLLHGHPFLRRKPVLSFQGSHLRSRATY
 LVFLPGLHVGLCSGPCMAEQRFCDYAKRGTAGCKKCKEKIVKGVCRIGKVVPNPFSESGDMKEWYHI
 KCMFEKLERARATTKIEDLTELEGWEELEDNEKEQITQHIADLSSKAAGTPKKKAVVQAKLTTTGQVTS
 PVKGASFVTSTNPRKFSGFSAPNNSGEAPSSPTPKRSLSSSKCDPRHKDCLLREFRKLKAMVADNPSYN
 TKTQIIQDFLRKGSAGDGFHGDVYLVKLLLPVVIKTVYNLNDKQIVKLSRIFNCPDDMARDLEQGDV
 SETIRVFFEQSKSFPPAAKSLLTIQEVDFLLRLSKLTKEDQQALQDIASRCTANDLKCIIRLIKHDL
 KMNSGAKHVLDALDPNAYEAFKASRNLDVVVERVLHNAQEVEKEPQRRALSVQASLMTVPVQPLAEACK
 SVEYAMKKCPNGMFSEIKYDGERVQVHKNGDHF SYFSRSLKPVLPKHVAHF KDYIPQAFPGGHS MILDSE
 VLLIDNKTGKPLPFGTLGVHKAQAFQDANVCLFVFDCIYFNDVSLMDRPLCERRKFLHDNMEIPNRIMF
 SEMKRVTKALDLADMITRVIQEGLEGLVLKDVKGTYPGKRHWLVKVKDYLVNEGAMADTADLVVLGAFYG
 QGSKGGMMSIFLMGCYDPGSQKWCTVTKCAGGHDDATLARLQNELDMVKISKDPSKIPSWLVKYNKIYYPD
 FIVPDPKKAAVWEITGAEFSKSEHTADGISIRFPRCTRIRDDKDWKSATNLPQLKELYLSKEKADFTV
 VAGDEGSSTTGGSSSEENKGPSGSAVSRKAPSKPSASTKKAEGKLSNSNSKDGNMQTAKPSAMKVGELKAT
 KSSPVKVGKRKAADETLCQTKVLLDIFTGVRLYLPSTPDFSRLRRYFVAFDGDVLVQEFDMTSATHVLG
 SRDKNPAAQVVSPEWIWACIRKRRLLVAPC

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/mk6527_d01.zip

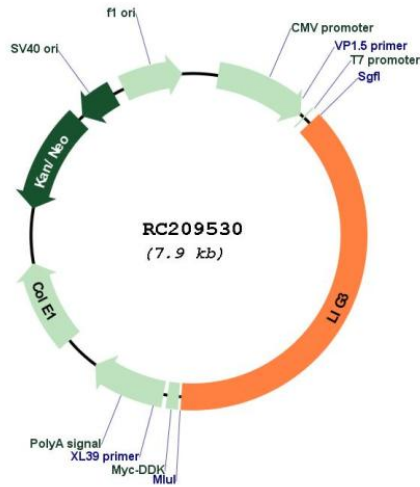
Restriction Sites:

Sgfl-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_013975
 ORF Size: 3027 bp

OTI Disclaimer: 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 custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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_013975.4](#)

RefSeq Size: 3722 bp

RefSeq ORF: 3030 bp

Locus ID: 3980

UniProt ID: [P49916](#)

Cytogenetics: 17q12

Domains: DNA_ligase, BRCT, zf-PARP

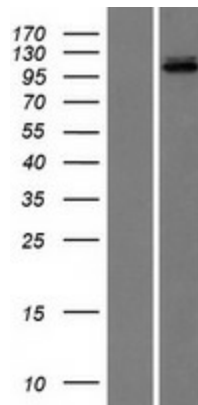
Protein Families: Druggable Genome

Protein Pathways: Base excision repair

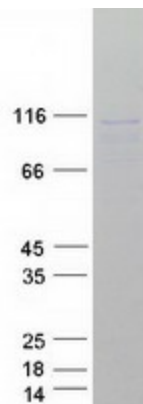
MW: 112.9 kDa

Gene Summary:

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]

Product images:


Western blot validation of overexpression lysate (Cat# [LY415562]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC209530 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified LIG3 protein (Cat# [TP309530]). The protein was produced from HEK293T cells transfected with LIG3 cDNA clone (Cat# RC209530) using MegaTran 2.0 (Cat# [TT210002]).