

Product datasheet for **RG224561**

DNA Ligase IV (LIG4) (NM_001098268) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	DNA Ligase IV (LIG4) (NM_001098268) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	LIG4
Synonyms:	LIG4S
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>RG224561 representing NM_001098268
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCTGCCTCACAACCTTCACAACCTGTTGCATCTCACGTTCTTTTGCAGATTTGTGTTCAACTTTAG
 AACGAATACAGAAAAGTAAAGGACGTGCAGAAAAATCAGACACTTCAGGGAATTTTATAGATTCTTGGAG
 AAAATTTTCATGATGCTCTTCATAAGAACCACAAAAGATGTCACAGACTCTTTTATCCAGCAATGAGACTA
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 TTGAGTTGCTTAATTTACCTAGAGATGGAAAAGATGCCCTCAAACCTTTAAACTACAGAACCCTACTGG
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 GGAAGTTAAACCATACAGCAAGTAAACGACCTTTAGACTCAATTGCCAGCAATAATTCTGCTAAAAGAA
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 GACTCAGTGATATTTCTATCACTTTATTTTCTGCATTTAAACCAATGCTAGCTGCTATTGCAGATATTGA
 GCACATTGAGAAGGATATGAAACATCAGAGTTTCTACATAGAAAACCAAGCTAGATGGTGAACGTATGCAA
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 TAAGAGATGACAAGGAGTGGCATGAGTGCATGACCCTGGACGACCTAGAACAACTTAGGGGGAAGGCATC
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 GCCCAAAGATGAAGAAAGTTATTGGAATTATTGAGCACTTAAAAGCACCTAACCTTACTAACGTTAAACA
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 AATCCTAAAAGAAAGTTGGGTAAGTATTCAATAGACAAGTGTGAATTACAAGAAGAAAACCAAGTATTG
 ATT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >RG224561 representing NM_001098268
 Red=Cloning site Green=Tags(s)

MAASQTSQTVASHVVPFADLCSTLERIQKSKGRAEKIRHFREFLDSWRKFHDALHKNHKDVTDSFYPMRL
 ILPQLERERMAYGIKETMLAKLYIELLNLPDGDALKLLNRYRPTGTHGDAGDFAMIAYVFLKPRCLQK
 GSLTIQQVNDLLDSIASNNSAKRDLIKKSLQLITQSSALEQKWLIRMIKDLKLGVSQQTIFSVFHND
 AAELHNVTTDLEKVCQRQLHDPVGLSDISITLFSAFKPLMAAIADIEHIEKDMKHQSFYIETKLDGERMQ
 MHKGDVYKYFSRNGYNYTDQFGASPTGSLTPFIHNAFKADIQICILDGEMMAYNPNTQTFMQKGTKFD
 IKRMVEDSDLQTCYCVFVLMVNNKKGHETLRKRYEILSSIFTPIPGRIEIVQKQTAHTKNEVIDALNE
 AIDKREEGIMVKQPLSIYKPKRGEGLKIKPEYVSGLMDELILIVGGYWGKSGRGMMSHFLCAVAEK
 PPPGKPSVFHTLSRVSGCTMKELYDLGLKLAKYWKPFHRKAPPSSILCGTEKPEVYIEPCNSVIVQIK
 AAEIVPSDMYKTGCTLRFPRIEKIRDDKEWHECMTLDDLEQLRGKASGLASKHLYIGGDDEPQEKKRKA
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 IAGSENIRVKNIIILSNKHVVKPAWLECFKTKSFVPWQPRFMIHMCPTKEHFAREYDCYGDSYFIDTD
 LNQLKEVFSGIKNSNEQTPEEMASLIADLEYRYSWDCSPLSMFRRHVYVLDYSYAVINDLSTKNEGTRLAI
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 I

TRTRPLE - GFP Tag - V

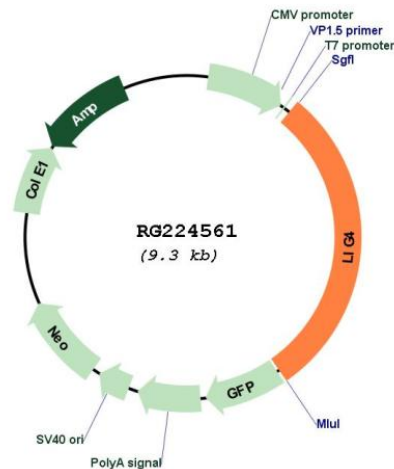
Restriction Sites:

SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_001098268

ORF Size: 2733 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: [NM_001098268.2](#)

RefSeq Size: 4077 bp

RefSeq ORF: 2736 bp

Locus ID: 3981

UniProt ID: [P49917](#)

Cytogenetics: 13q33.3

Protein Families: Druggable Genome

Protein Pathways: Non-homologous end-joining

Gene Summary: The protein encoded by this gene is a DNA ligase that joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction. This protein is essential for V(D)J recombination and DNA double-strand break (DSB) repair through nonhomologous end joining (NHEJ). This protein forms a complex with the X-ray repair cross complementing protein 4 (XRCC4), and further interacts with the DNA-dependent protein kinase (DNA-PK). Both XRCC4 and DNA-PK are known to be required for NHEJ. The crystal structure of the complex formed by this protein and XRCC4 has been resolved. Defects in this gene are the cause of LIG4 syndrome. Alternatively spliced transcript variants encoding the same protein have been observed. [provided by RefSeq, Jul 2008]