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# DNA Ligase IV Antibody

Rabbit mAb
Catalog # AP91608

## Product Information

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|---|---|
| **Application** | WB, IHC, IF, ICC, IHF |
| **Primary Accession** | P49917 |
| **Reactivity** | Human |
| **Clonality** | Monoclonal |
| **Other Names** | DNA joinase; DNA ligase 4; DNA ligase IV; DNA repair enzyme; LIG4; LIG4S; Ligase IV; |
| **Isotype** | Rabbit IgG |
| **Host** | Rabbit |
| **Calculated MW** | 103971 |

## Additional Information

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| **Dilution** | WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 |
| **Purification** | Affinity-chromatography |
| **Immunogen** | A synthesized peptide derived from human DNA Ligase IV |
| **Description** | Efficiently joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. |
| **Storage Condition and Buffer** | Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle. |

## Protein Information

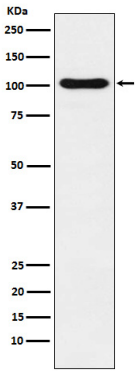
| | |
|---|---|
| **Name** | LIG4 {ECO:0000303\|PubMed:16357942, ECO:0000312\|HGNC:HGNC:6601} |
| **Function** | DNA ligase involved in DNA non-homologous end joining (NHEJ); required for double-strand break (DSB) repair and V(D)J recombination (PubMed:12517771, PubMed:17290226, PubMed:23523427, PubMed:29980672, PubMed:33586762, PubMed:8798671, PubMed:9242410, PubMed:9809069). Catalyzes the NHEJ ligation step of the broken DNA during DSB repair by resealing the DNA breaks after the gap filling is completed (PubMed:12517771, PubMed:17290226, PubMed:9242410, PubMed:9809069). Joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction (PubMed:12517771, PubMed:17290226, PubMed:9242410, PubMed:9809069). LIG4 is mechanistically flexible: it can ligate nicks as well as compatible DNA overhangs alone, while in the presence of XRCC4, it can ligate ends with 2-nucleotides (nt) microhomology and 1-nt gaps (PubMed:17290226). Forms a subcomplex with XRCC4; the LIG4-XRCC4 subcomplex is responsible for the NHEJ ligation step and XRCC4 enhances the |

joining activity of LIG4 (PubMed:9242410, PubMed:9809069). Binding of the LIG4-XRCC4 complex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends (PubMed:10854421). LIG4 regulates nuclear localization of XRCC4 (PubMed:24984242).

**Cellular Location** Nucleus

**Tissue Location** Testis, thymus, prostate and heart.

## Images




Western blot analysis of DNA Ligase IV expression in Ramos cell lysate.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.