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KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1246

Product Information

Application	WB, FC, ICC
Primary Accession	P49917
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB 2515
Calculated MW	103971
Gene Name	LIG4
Aliases	LIG4; DNA Ligase 4; Polydeoxyribonucleotide Synthase [ATP] 4; DNA Ligase IV; Ligase IV, DNA, ATP-Dependent; Polynucleotide Ligase; DNA Repair Enzyme; DNA Joinase; EC 6.5.1.1; Sealase; LIG4S
Immunogen	A synthesized peptide derived from human DNA Ligase IV

Additional Information

Gene ID	3981
Other Names	DNA ligase 4, 6.5.1.1 {ECO:0000255|PROSITE-ProRule:PRU10135, ECO:0000269|PubMed:23523427, ECO:0000269|PubMed:29980672, ECO:0000269|PubMed:9809069}, DNA ligase IV, Polydeoxyribonucleotide synthase [ATP] 4, LIG4 {ECO:0000303|PubMed:16357942, ECO:0000312|HGNC:HGNC:6601}

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.

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