

KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody
Rabbit monoclonal antibody
Catalog # AGI1246**Specification****KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody - Product Information**

Application	WB, FC, ICC
Primary Accession	P49917
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 104 kDa , observed, 103 kDa
Gene Name	KDa
Aliases	LIG4 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

KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody - 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}	

KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody - 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

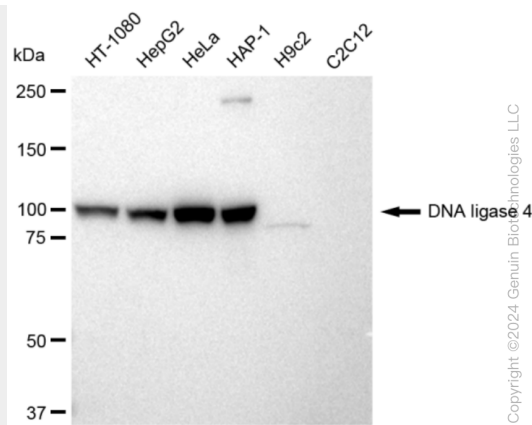
Testis, thymus, prostate and heart.

KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody - Protocols

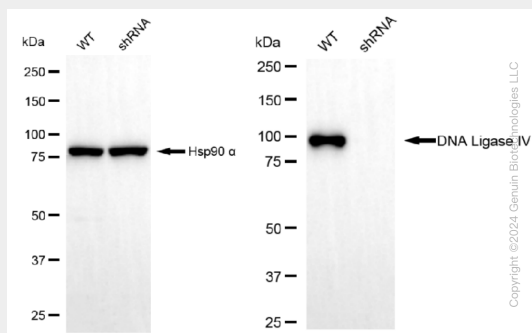
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

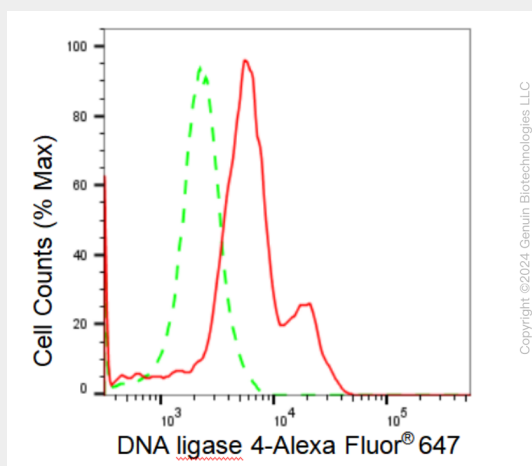
KD-Validated Anti-DNA ligase 4 Rabbit Monoclonal Antibody - Images



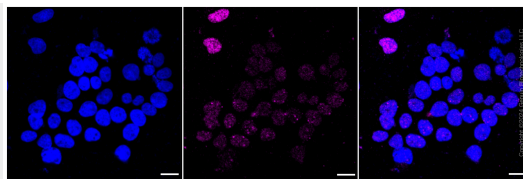
Western blotting analysis using anti-DNA ligase 4 antibody (Cat#61478). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-DNA ligase 4 antibody (Cat#61478, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (Cat#201, 1:20,000) respectively. Image was developed using FeQ™ ECL Substrate Kit (Cat#226).



Western blotting analysis using anti-DNA ligase 4 antibody (Cat#61478). DNA ligase 4 expression in wild type (WT) and DNA ligase 4 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-DNA ligase 4 antibody (Cat#61478, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (Cat#201, 1:20,000) respectively. Image was developed using FeQ™ ECL Substrate Kit (Cat#226).



Flow cytometric analysis of DNA ligase 4 expression in HeLa cells using DNA ligase 4 antibody (Cat#61478, 1:2,000). Green, isotype control; red, DNA ligase 4.



Immunocytochemical staining of HeLa cells with DNA ligase 4 antibody (Cat#61478, 1:1,000). Nuclei were stained blue with DAPI; DNA ligase 4 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Low. Scale bar: 20 μ m.