

DNA Ligase IV Polyclonal Antibody

Catalog # AP69550

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	P49917
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	103971

Additional Information

Gene ID	3981
Other Names	LIG4; DNA ligase 4; DNA ligase IV; Polydeoxyribonucleotide synthase [ATP] 4
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~N/A IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

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

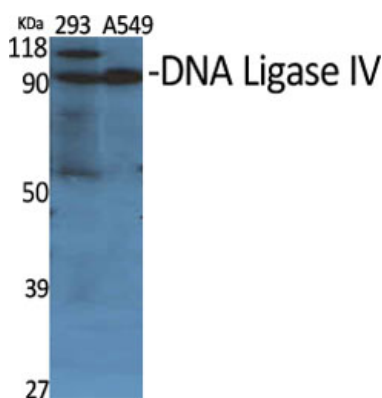
Tissue Location

Testis, thymus, prostate and heart.

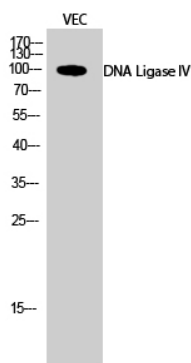
Background

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. The LIG4-XRCC4 complex is responsible for the NHEJ ligation step, and XRCC4 enhances the joining activity of LIG4. 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.

Images



Western Blot analysis of various cells using DNA Ligase IV Polyclonal Antibody diluted at 1 : 500



Western Blot analysis of VEC cells using DNA Ligase IV Polyclonal Antibody diluted at 1 : 500

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