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DNA Ligase IV Polyclonal Antibody

Catalog # AP69550

Product Information

Application	WB, IHC-P, IF
Primary Accession	P49917
Reactivity	Human
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
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

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).

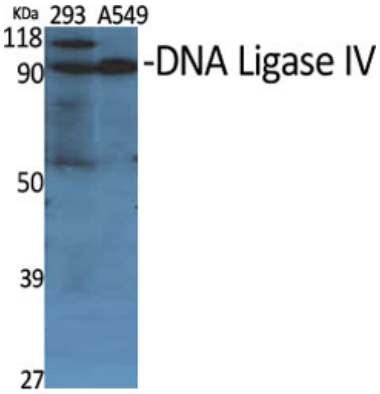
Cellular Location Nucleus

Tissue Location Testis, thymus, prostate and heart.

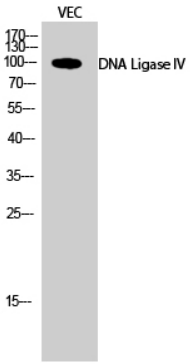
Background

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