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Anti-DNA Ligase 4 Antibody

Catalog # AP51318

Product Information

Application	WB, IHC
Primary Accession	P49917
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	103971

Additional Information

Gene ID	3981
Other Names	DNA ligase 4; DNA ligase IV; Polydeoxyribonucleotide synthase [ATP] 4
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human DNA Ligase 4. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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).

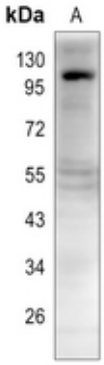
Cellular Location Nucleus

Tissue Location Testis, thymus, prostate and heart.

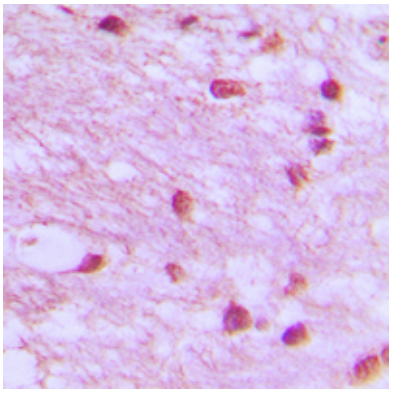
References

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Grawunder U.,et al.Mol. Cell 2:477-484(1998).
Critchlow S.E.,et al.Curr. Biol. 7:588-598(1997).

Images



Western blot analysis of DNA Ligase 4 expression in HepG2 (A) whole cell lysates. (Predicted band size: 103 kD; Observed band size: 110 kD)



Immunohistochemical analysis of DNA Ligase 4 staining in human brain formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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