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POLD2 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20604c

Product Information

Application	WB, E
Primary Accession	P49005
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB46018
Calculated MW	51289

Additional Information

Gene ID	5425
Other Names	DNA polymerase delta subunit 2, DNA polymerase delta subunit p50, POLD2
Target/Specificity	This POLD2 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 232-265 amino acids from the Central region of human POLD2.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	POLD2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	POLD2
Function	Accessory component of both the DNA polymerase delta complex and the DNA polymerase zeta complex (PubMed:17317665, PubMed:22801543, PubMed:24449906). As a component of the trimeric and tetrameric DNA polymerase delta complexes (Pol-delta3 and Pol-delta4, respectively), plays a role in high fidelity genome replication, including in lagging strand synthesis, and repair (PubMed:12403614, PubMed:16510448, PubMed:19074196,

PubMed:20334433, PubMed:24035200). Pol-delta3 and Pol- delta4 are characterized by the absence or the presence of POLD4. They exhibit differences in catalytic activity. Most notably, Pol-delta3 shows higher proofreading activity than Pol-delta4 (PubMed:19074196, PubMed:20334433). Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may also be better suited to fulfill this task, exhibiting near-absence of strand displacement activity compared to Pol-delta4 and stalling on encounter with the 5'- blocking oligonucleotides. Pol-delta3 idling process may avoid the formation of a gap, while maintaining a nick that can be readily ligated (PubMed:24035200). Along with DNA polymerase kappa, DNA polymerase delta carries out approximately half of nucleotide excision repair (NER) synthesis following UV irradiation (PubMed:20227374). Under conditions of DNA replication stress, required for the repair of broken replication forks through break-induced replication (BIR) (PubMed:24310611). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine or abasic sites performed by Pol- delta4, independently of DNA polymerase zeta (REV3L) or eta (POLH). Facilitates abasic site bypass by DNA polymerase delta by promoting extension from the nucleotide inserted opposite the lesion. Also involved in TLS as a component of the DNA polymerase zeta complex (PubMed:24449906). Along with POLD3, dramatically increases the efficiency and processivity of DNA synthesis of the DNA polymerase zeta complex compared to the minimal zeta complex, consisting of only REV3L and REV7 (PubMed:24449906).

Cellular Location Nucleus. Note=Recruited to DNA damage sites within 2 hours following UV irradiation.

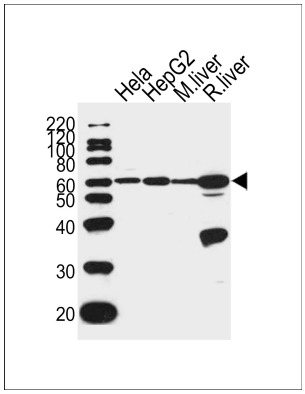
Background

The function of the small subunit is not yet clear.

References

Zhang J.,et al.Genomics 29:179-186(1995).
Perez A.,et al.Biochim. Biophys. Acta 1493:231-236(2000).
He H.,et al.Proc. Natl. Acad. Sci. U.S.A. 98:11979-11984(2001).
Liu L.,et al.J. Biol. Chem. 278:10041-10047(2003).
Tsurimoto T.,et al.Genes Cells 10:13-22(2005).

Images



Western blot analysis of lysates from Hela, HepG2 cell line, mouse liver and rat liver tissue lysate (from left to right), using POLD2 Antibody (Center)(Cat. #AP20604c). AP20604c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.