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DNA polymerase delta Rabbit pAb

Catalog # AP98568

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P49005
Other Accession	P49005
Reactivity	Rat, Human, Mouse
Predicted	Rabbit
Host	Rabbit
Clonality	Polyclonal
Calculated MW	51289
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from Human DNA polymerase delta
Epitope Specificity	101-200/469
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the DNA polymerase delta/II small subunit family.
SUBUNIT	Heterotetramer composed of subunits of 125 kDa, 50 kDa, 66 kDa and 12 kDa. Interacts with KCTD10 (By similarity). Interacts with KCTD13/POLDIP1, POLDIP2 and POLDIP3. Interacts with WRNIP1. Interacts with POLD4.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	DNA replication, recombination and repair, all of which are necessary for genomic stability, require the presence of exonucleases (1). In DNA replication, these enzymes are involved in the processing of Okazaki fragments, whereas in DNA repair, they function to excise damaged DNA fragments and correct recombinational mismatches (2). These exonucleases include the family of DNA polymerases (3). DNA pol α, β, ∂, and e are involved in DNA replication and repair (4). DNA pol ∂ and DNA pol e are multisubunit enzymes, with DNA pol ∂ consisting of two subunits p125, which interacts with the sliding DNA clamp protein PCNA, and p50 (5). The nuclear-encoded DNA pol □is the only DNA polymerase required for the replication of the mitochondrial DNA (6). DNA pol Ω is ubiquitously expressed in various tissues and mediates the cellular mechanism of damage-induced mutagenesis (7). DNA pol œ is a DNA polymerase-helicase that binds ATP and is involved in the repair of interstrand crosslinks (8).

Additional Information

Gene ID	5425
Other Names	50kDa; p50; po1D2; DPOD2_BOVIN; POLD2; DNA polymerase delta subunit p50; DPOD2_HUMAN; DPOD2_MOUSE; DPOD2_RAT; DNA polymerase delta 2, accessory subunit; polymerase (DNA directed), delta 2, regulatory subunit (50kD); polymerase (DNA directed), delta 2, regulatory subunit 50kDa;

	polymerase (DNA) delta 2, accessory subunit; Pol delta B subunit (p50)
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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.

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