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POLD3 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16363b

Product Information

Application	WB, E
Primary Accession	Q15054
Other Accession	NP_006582.1
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB35311
Calculated MW	51400
Antigen Region	416-443

Additional Information

Gene ID	10714
Other Names	DNA polymerase delta subunit 3, DNA polymerase delta subunit p66, POLD3, KIAA0039
Target/Specificity	This POLD3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 416-443 amino acids from the C-terminal region of human POLD3.
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	POLD3 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	POLD3
Synonyms	KIAA0039

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. Required for optimal Pol-delta activity. Stabilizes the Pol-delta complex and plays a major role in Pol-delta stimulation by PCNA (PubMed:10219083, PubMed:10852724, PubMed:11595739, PubMed:16510448, 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. In this context, POLD3, along with PCNA and RFC1-replication factor C complex, is required to recruit POLD1, the catalytic subunit of the polymerase delta complex, to DNA damage sites (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 (PubMed:19074196, PubMed:25628356, PubMed:27185888). Also involved in TLS, as a component of the tetrameric DNA polymerase zeta complex. Along with POLD2, 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	Cytoplasm {ECO:0000250|UniProtKB:Q9EQ28}. Nucleus. Note=Partially colocalizes with PCNA and POLD1 at S phase replication sites (PubMed:11595739). Recruited to DNA damage sites within 2 hours following UV irradiation (PubMed:20227374, PubMed:22801543).

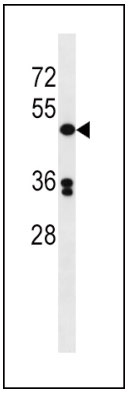
Background

The DNA polymerase delta complex is involved in DNA replication and repair, and it consists of the proliferating cell nuclear antigen (PCNA; MIM 176740), the multisubunit replication factor C (see MIM 102579), and the 4 subunit polymerase complex: POLD1 (MIM 174761), POLD2 (MIM 600815), POLD3, and POLD4 (MIM 611525) (Liu and Warbrick, 2006 [PubMed 16934752]).[supplied by OMIM].

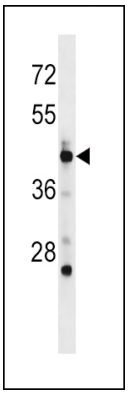
References

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Images



POLD3 Antibody (C-term) (Cat. #AP16363b) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the POLD3 antibody detected the POLD3 protein (arrow).



POLD3 Antibody (C-term) (Cat. #AP16363b) western blot analysis in mouse spleen tissue lysates (35ug/lane).This demonstrates the POLD3 antibody detected the POLD3 protein (arrow).

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