

DNA Polymerase delta 3 Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51437**Specification**

DNA Polymerase delta 3 Antibody - Product Information

Application	WB, IP, E
Primary Accession	Q15054
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	51 KDa

DNA Polymerase delta 3 Antibody - Additional Information**Gene ID** 10714**Other Names**

DNA polymerase delta subunit 3, DNA polymerase delta subunit p66, POLD3, KIAA0039

Target/Specificity

KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human DNA Polymerase delta 3. The exact sequence is proprietary.

Dilution

WB~~1:1000

IP~~N/A

E~~N/A

Format

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

Storage

Store at -20 °C. Stable for 12 months from date of receipt

DNA Polymerase delta 3 Antibody - 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).

DNA Polymerase delta 3 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

DNA Polymerase delta 3 Antibody - Images

DNA Polymerase delta 3 Antibody - Background

Required for optimal DNA polymerase delta activity.

DNA Polymerase delta 3 Antibody - References

Nomura N.,et al.DNA Res. 1:27-35(1994).

Ota T.,et al.Nat. Genet. 36:40-45(2004).

Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.

Bienvenut W.V.,et al.Submitted (MAR-2009) to UniProtKB.

Hughes P.,et al.Nucleic Acids Res. 27:2108-2114(1999).