

**DNA Polymerase delta 1 Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP51436****Specification**

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**DNA Polymerase delta 1 Antibody - Product Information**

|                   |                        |
|-------------------|------------------------|
| Application       | WB, E                  |
| Primary Accession | <a href="#">P28340</a> |
| Reactivity        | Human, Mouse, Rat      |
| Host              | Rabbit                 |
| Clonality         | Polyclonal             |
| Calculated MW     | 125 KDa                |

**DNA Polymerase delta 1 Antibody - Additional Information****Gene ID** 5424**Other Names**

DNA polymerase delta catalytic subunit, DNA polymerase subunit delta p125, POLD1, POLD

**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 1 Antibody - Protein Information****Name** POLD1 ([HGNC:9175](#))**Synonyms** POLD**Function**

As the catalytic component of the trimeric (Pol-delta3 complex) and tetrameric DNA polymerase delta complexes (Pol-delta4 complex), plays a crucial role in high fidelity genome replication, including in lagging strand synthesis, and repair. Exhibits both DNA polymerase and 3'- to 5'-exonuclease activities (PubMed: [16510448](http://www.uniprot.org/citations/16510448), PubMed: [19074196](http://www.uniprot.org/citations/19074196), PubMed: [20334433](http://www.uniprot.org/citations/20334433), PubMed: [24022480](http://www.uniprot.org/citations/24022480), PubMed: [24035200](http://www.uniprot.org/citations/24035200)). Requires the presence of accessory proteins POLD2, POLD3 and POLD4 for full activity. Depending upon the absence (Pol-delta3) or the presence of POLD4 (Pol-delta4), displays differences in catalytic activity. Most notably, expresses higher proofreading activity in the context of Pol- delta3 compared with that of Pol-delta4 (PubMed: [19074196](http://www.uniprot.org/citations/19074196), PubMed: [20334433](http://www.uniprot.org/citations/20334433)). Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may 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:<a href="http://www.uniprot.org/citations/24035200" target="\_blank">24035200</a>). Along with DNA polymerase kappa, DNA polymerase delta carries out approximately half of nucleotide excision repair (NER) synthesis following UV irradiation (PubMed:<a href="http://www.uniprot.org/citations/20227374" target="\_blank">20227374</a>). Under conditions of DNA replication stress, in the presence of POLD3 and POLD4, may catalyze the repair of broken replication forks through break-induced replication (BIR) (PubMed:<a href="http://www.uniprot.org/citations/24310611" target="\_blank">24310611</a>). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine, 8oxoG or abasic sites (PubMed:<a href="http://www.uniprot.org/citations/19074196" target="\_blank">19074196</a>, PubMed:<a href="http://www.uniprot.org/citations/24191025" target="\_blank">24191025</a>).

### Cellular Location

Nucleus Note=Colocalizes with PCNA and POLD3 at S phase replication sites (PubMed:11595739). After UV irradiation, recruited to DNA damage sites within 2 hours, independently on the cell cycle phase, nor on PCNA ubiquitination. This recruitment requires POLD3, PCNA and RFC1- replication factor C complex (PubMed:20227374, PubMed:22801543)

### Tissue Location

Widely expressed, with high levels of expression in heart and lung.

## DNA Polymerase delta 1 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 1 Antibody - Images

## DNA Polymerase delta 1 Antibody - Background

Possesses two enzymatic activities: DNA synthesis (polymerase) and an exonucleolytic activity that degrades single stranded DNA in the 3'- to 5'-direction. Required with its accessory proteins (proliferating cell nuclear antigen (PCNA) and replication factor C (RFC) or activator 1) for leading strand synthesis. Also involved in completing Okazaki fragments initiated by the DNA polymerase alpha/primase complex.

## DNA Polymerase delta 1 Antibody - References

Chung D.W.,et al.Proc. Natl. Acad. Sci. U.S.A. 88:11197-11201(1991).  
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