

# Anti-DNA Polymerase delta 1 Antibody

Catalog # AP53695

## Product Information

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Application	WB
Primary Accession	<a href="#">P28340</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	123631

## Additional Information

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Gene ID	5424
Other Names	POLD; DNA polymerase delta catalytic subunit; DNA polymerase subunit delta p125
Target/Specificity	Recognizes endogenous levels of DNA Polymerase delta 1 protein.
Dilution	WB~~1/500 - 1/1000
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

## Protein Information

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Name	POLD1 ( <a href="#">HGNC:9175</a> )
Synonyms	POLD
Function	<p>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 (PubMed:<a href="#">16510448</a>, PubMed:<a href="#">19074196</a>, PubMed:<a href="#">20334433</a>, PubMed:<a href="#">24022480</a>, PubMed:<a href="#">24035200</a>, PubMed:<a href="#">31449058</a>). Exhibits both DNA polymerase and 3'- to 5'- exonuclease activities (PubMed:<a href="#">16510448</a>, PubMed:<a href="#">19074196</a>, PubMed:<a href="#">20334433</a>, PubMed:<a href="#">24022480</a>, PubMed:<a href="#">24035200</a>). 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:<a href="#">19074196</a>, PubMed:<a href="#">20334433</a>). Although both Pol-delta3 and Pol-delta4 process Okazaki fragments in vitro, Pol-delta3 may be better suited</p>

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, in the presence of POLD3 and POLD4, may catalyze the repair of broken replication forks through break-induced replication (BIR) (PubMed:[24310611](#)). Involved in the translesion synthesis (TLS) of templates carrying O6-methylguanine, 8oxoG or abasic sites (PubMed:[19074196](#), PubMed:[24191025](#)).

#### 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.

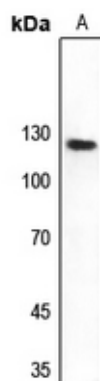
## Background

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Rabbit polyclonal antibody to DNA Polymerase delta 1

## Images

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Western blot analysis of DNA Polymerase delta 1 expression in HeLa (A) whole cell lysates.

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