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POLD1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2867c

Specification

POLD1 Antibody (Center) - Product Information

Application	**WB, FC,E**
Primary Accession	P28340
Other Accession	P52431
Reactivity	**Human**
Predicted	**Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**123631**
Antigen Region	**710-739**

POLD1 Antibody (Center) - Additional Information

Gene ID 5424

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

Target/Specificity
This POLD1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 710-739 amino acids from the Central region of human POLD1.

Dilution
WB~~1:1000
FC~~1:10~50

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

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
POLD1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

POLD1 Antibody (Center) - 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, PubMed:19074196, PubMed:20334433, PubMed:24035200, PubMed:24022480). 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, PubMed: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: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.

POLD1 Antibody (Center) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

POLD1 Antibody (Center) - Images

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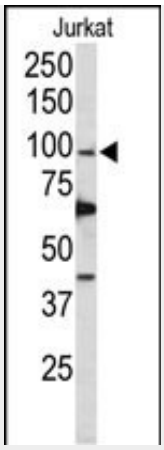
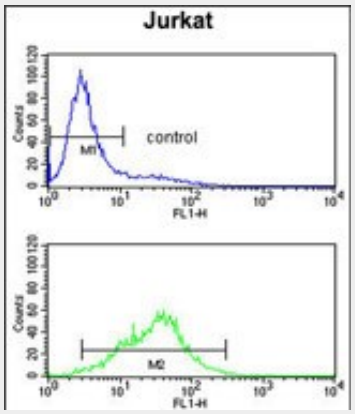


Western blot analysis of POLD1 Antibody (Center) (Cat. #AP2867c) in Jurkat cell line lysates (35ug/lane). POLD1 (arrow) was detected using the purified Pab.



POLD1 Antibody (Center) (Cat. #AP2867c) flow cytometry analysis of Jurkatcells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

POLD1 Antibody (Center) - Background

The DNA polymerase delta complex is involved in DNA replication and repair, and it consists of the proliferating cell nuclear antigen (PCNA), the multisubunit replication factor C, and the 4 subunit polymerase complex: POLD1, POLD2, POLD3, and POLD4.

POLD1 Antibody (Center) - References

Chung D.W., Zhang J.,Proc. Natl. Acad. Sci. U.S.A. 88:11197-11201(1991)
Yang C.-L., Chang L.-S.Nucleic Acids Res. 20:735-745(1992)
Li H., Xie B., Zhou Y., Rahmeh A.J. Biol. Chem. 281:14748-14755(2006)