

POLK Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP19981c

Product Information

Application	WB, E
Primary Accession	Q9UBT6
Other Accession	NP_057302.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB41936
Calculated MW	98809
Antigen Region	531-560

Additional Information

Gene ID	51426
Other Names	DNA polymerase kappa, DINB protein, DINP, POLK, DINB1
Target/Specificity	This POLK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 531-560 amino acids from the Central region of human POLK.
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	POLK Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	POLK
Synonyms	DINB1
Function	DNA polymerase specifically involved in DNA repair. Plays an important role in translesion synthesis, where the normal high-fidelity DNA polymerases

cannot proceed and DNA synthesis stalls. Depending on the context, it inserts the correct base, but causes frequent base transitions, transversions and frameshifts. Lacks 3'-5' proofreading exonuclease activity. Forms a Schiff base with 5'-deoxyribose phosphate at abasic sites, but does not have lyase activity.

Cellular Location

Nucleus. Note=Detected throughout the nucleus and at replication foci (PubMed:12414988). Recruited to DNA damage sites in response to ultraviolet irradiation: N6-methyladenosine (m6A)- containing mRNAs accumulate in the vicinity of DNA damage sites and their presence is required to recruit POLK (PubMed:28297716)

Tissue Location

Detected at low levels in testis, spleen, prostate and ovary. Detected at very low levels in kidney, colon, brain, heart, liver, lung, placenta, pancreas and peripheral blood leukocytes

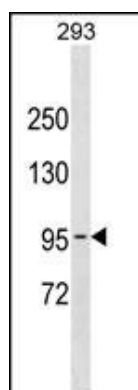
Background

External and internal DNA-damaging agents continually threaten the integrity of genetic material in cells. Although a variety of repair mechanisms exist to remove the resulting lesions, some lesions escape repair and block the replication machinery. Members of the Y family of DNA polymerases, such as POLK, permit the continuity of the replication fork by allowing replication through such DNA lesions. Each Y family polymerase has a unique DNA-damage bypass and fidelity profile. POLK is specialized for the extension step of lesion bypass (summary by Lone et al., 2007 [PubMed 17317631]).

References

Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) :
Monsees, G.M., et al. Breast Cancer Res. Treat. (2010) In press :
Katafuchi, A., et al. Nucleic Acids Res. 38(3):859-867(2010)
Fukuda, H., et al. J. Biol. Chem. 284(38):25585-25592(2009)
Irimia, A., et al. J. Biol. Chem. 284(33):22467-22480(2009)

Images



POLK Antibody (Center) (Cat. #AP19981c) western blot analysis in 293 cell line lysates (35ug/lane). This demonstrates the POLK antibody detected the POLK protein (arrow).

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