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DNA2 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # ap10182c

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P51530
Other Accession	D3ZG52, Q6ZQJ5, NP_001073918.1
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	120415
Antigen Region	330-358

Additional Information

Gene ID	1763
Other Names	DNA replication ATP-dependent helicase/nuclease DNA2, hDNA2, DNA replication ATP-dependent helicase-like homolog, DNA replication nuclease DNA2, 31--, DNA replication ATP-dependent helicase DNA2, DNA2, DNA2L, KIAA0083
Target/Specificity	This DNA2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 330-358 amino acids from the Central region of human DNA2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. 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	DNA2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DNA2

Synonyms	DNA2L, KIAA0083
Function	Key enzyme involved in DNA replication and DNA repair in nucleus and mitochondrion. Involved in Okazaki fragments processing by cleaving long flaps that escape FEN1: flaps that are longer than 27 nucleotides are coated by replication protein A complex (RPA), leading to recruit DNA2 which cleaves the flap until it is too short to bind RPA and becomes a substrate for FEN1. Also involved in 5'-end resection of DNA during double-strand break (DSB) repair: recruited by BLM and mediates the cleavage of 5'-ssDNA, while the 3'-ssDNA cleavage is prevented by the presence of RPA. Also involved in DNA replication checkpoint independently of Okazaki fragments processing. Possesses different enzymatic activities, such as single-stranded DNA (ssDNA)-dependent ATPase, 5'-3' helicase and endonuclease activities. While the ATPase and endonuclease activities are well-defined and play a key role in Okazaki fragments processing and DSB repair, the 5'-3' DNA helicase activity is subject to debate. According to various reports, the helicase activity is absent to weak and its function remains largely unclear. Helicase activity may promote the motion of DNA2 on the flap, helping the nuclease function.
Cellular Location	Nucleus. Mitochondrion. Note=Was initially reported to be exclusively mitochondrial (PubMed:18995831). However, it was later shown to localize both in mitochondrion and nucleus (PubMed:19487465).

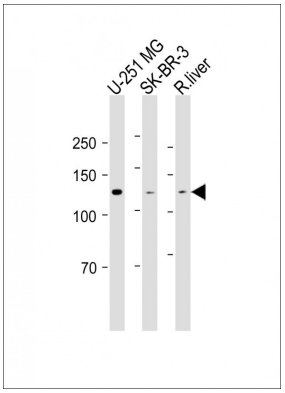
Background

DNA2 is a conserved helicase/nuclease involved in the maintenance of mitochondrial and nuclear DNA stability (Duxin et al., 2009 [PubMed 19487465]).

References

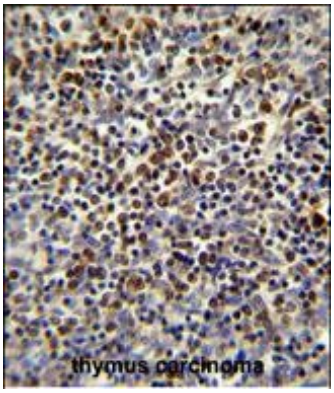
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Kang, Y.H., et al. Crit. Rev. Biochem. Mol. Biol. 45(2):71-96(2010)
Balakrishnan, L., et al. J. Biol. Chem. 285(7):4398-4404(2010)
Duxin, J.P., et al. Mol. Cell. Biol. 29(15):4274-4282(2009)
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Images

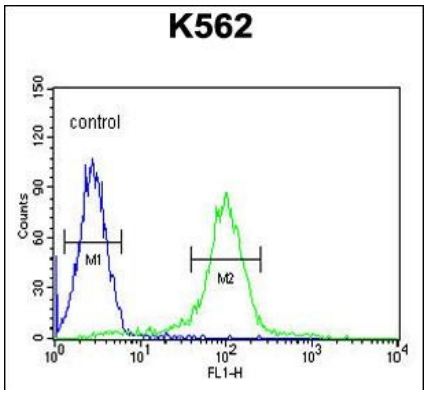


All lanes: Anti-DNA2 Antibody (Center) at 1:1000 dilution Lane 1: U-251 MG whole cell lysate Lane 2: SK-BR-3 whole cell lysate Lane 3: Rat liver lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 120 KDa Blocking/Dilution buffer: 5% NFDM/TBST.

DNA2 antibody (Center) (Cat. #AP10182c) immunohistochemistry analysis in formalin fixed and paraffin embedded human thymus carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the



DNA2 antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



DNA2 Antibody (Center) (Cat. #AP10182c) flow cytometric analysis of K562 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- hDNA2 nuclease/helicase promotes centromeric DNA replication and genome stability.
- CDK1 phosphorylates WRN at collapsed replication forks.

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