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Anti-DNA Polymerase alpha 1 Antibody

Catalog # AP51435

Product Information

Application	WB
Primary Accession	P09884
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	165913

Additional Information

Gene ID	5422
Other Names	POLA; DNA polymerase alpha catalytic subunit; DNA polymerase alpha catalytic subunit p180
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human DNA Polymerase alpha 1. The exact sequence is proprietary.
Dilution	WB~~ 1:1000
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

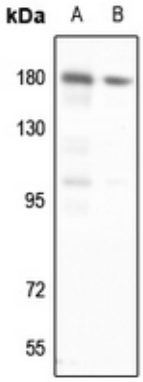
Name	POLA1
Synonyms	POLA
Function	Catalytic subunit of the DNA polymerase alpha complex (also known as the alpha DNA polymerase-primase complex) which plays an essential role in the initiation of DNA synthesis. During the S phase of the cell cycle, the DNA polymerase alpha complex (composed of a catalytic subunit POLA1, a regulatory subunit POLA2 and two primase subunits PRIM1 and PRIM2) is recruited to DNA at the replicative forks via direct interactions with MCM10 and WDHD1. The primase subunit of the polymerase alpha complex initiates DNA synthesis by oligomerizing short RNA primers on both leading and lagging strands. These primers are initially extended by the polymerase alpha catalytic subunit and subsequently transferred to polymerase delta and polymerase epsilon for processive synthesis on the lagging and leading strand, respectively. The reason this transfer occurs is because the

	polymerase alpha has limited processivity and lacks intrinsic 3' exonuclease activity for proofreading error, and therefore is not well suited for replicating long complexes. In the cytosol, responsible for a substantial proportion of the physiological concentration of cytosolic RNA:DNA hybrids, which are necessary to prevent spontaneous activation of type I interferon responses (PubMed:27019227).
Cellular Location	Nucleus. Cytoplasm, cytosol. Note=In the cytosol, colocalizes with RNA:DNA hybrids with a speckled pattern

References

Wong S.W.,et al.EMBO J. 7:37-47(1988).
Pearson B.E.,et al.Mol. Cell. Biol. 11:2081-2095(1991).
Hsi K.-L.,et al.Nucleic Acids Res. 18:6231-6237(1990).
Smale S.T.,et al.Mol. Cell. Biol. 6:4077-4087(1986).
Lee S.S.,et al.Proc. Natl. Acad. Sci. U.S.A. 92:7882-7886(1995).

Images



Western blot analysis of DNA Polymerase alpha 1 expression in Hela (A), H466 (B) whole cell lysates. (Predicted band size: 165 kD; Observed band size: 180 kD)

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