

## DNA pol α Polyclonal Antibody

**Catalog # AP69551** 

## **Specification**

## DNA pol α Polyclonal Antibody - Product Information

Application WB
Primary Accession P09884
Reactivity Human
Host Rabbit
Clonality Polyclonal

## DNA pol α Polyclonal Antibody - Additional Information

**Gene ID 5422** 

#### **Other Names**

POLA1; POLA; DNA polymerase alpha catalytic subunit; DNA polymerase alpha catalytic subunit p180

#### **Dilution**

WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/20000. Not yet tested in other applications.

## **Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

# **Storage Conditions**

-20°C

### DNA pol α Polyclonal Antibody - 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 oligomerising 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:<a href="http://www.uniprot.org/citations/27019227" target="\_blank">27019227</a>).

#### **Cellular Location**

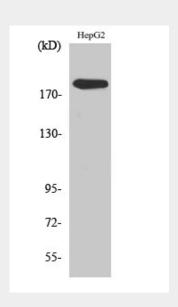
Nucleus. Cytoplasm, cytosol. Note=In the cytosol, colocalizes with RNA:DNA hybrids with a speckled pattern

## DNA pol α Polyclonal Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- <u>Immunoprecipitation</u>
- Flow Cytomety
- Cell Culture

# DNA pol α Polyclonal Antibody - Images



# DNA pol α Polyclonal Antibody - Background

Plays an essential role in the initiation of DNA replication. During the S phase of the cell cycle, the DNA polymerase alpha complex (composed of a catalytic subunit POLA1/p180, a regulatory subunit POLA2/p70 and two primase subunits PRIM1/p49 and PRIM2/p58) 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 oligomerising 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).