

**Polg antibody - N-terminal region**  
**Rabbit Polyclonal Antibody**  
**Catalog # AI12919****Specification**

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**Polg antibody - N-terminal region - Product Information**

Application	WB
Primary Accession	<a href="#">O9QYV8</a>
Other Accession	<a href="#">NM_053528</a> , <a href="#">NP_445980</a>
Reactivity	Human, Mouse, Rat, Zebrafish, Horse, Yeast, Bovine, Guinea Pig, Dog
Predicted	Human, Mouse, Rat, Zebrafish, Pig, Horse, Bovine, Guinea Pig, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	136kDa KDa

**Polg antibody - N-terminal region - Additional Information****Gene ID** 85472**Other Names**

DNA polymerase subunit gamma-1, 2.7.7.7, Mitochondrial DNA polymerase catalytic subunit, PolG-alpha, Polg, Mip1, Polg1

**Format**

Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.

**Reconstitution & Storage**

Add 50 ul of distilled water. Final anti-Polg antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.

**Precautions**

Polg antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

**Polg antibody - N-terminal region - Protein Information****Name** Polg {ECO:0000312|RGD:620057}**Synonyms** Mip1, Polg1**Function**

Catalytic subunit of DNA polymerase gamma solely responsible for replication of mitochondrial DNA (mtDNA). Replicates both heavy and light strands of the circular mtDNA genome using a single-stranded DNA template, RNA primers and the four deoxyribonucleoside triphosphates as substrates (By similarity). Has 5' -&gt; 3' polymerase activity. Functionally interacts with TWNK and SSBP1 at the replication fork to form a highly processive replisome, where TWNK unwinds the

double-stranded DNA template prior to replication and SSBP1 covers the parental heavy strand to enable continuous replication of the entire mitochondrial genome. A single nucleotide incorporation cycle includes binding of the incoming nucleotide at the insertion site, a phosphodiester bond formation reaction that extends the 3'-end of the primer DNA, and translocation of the primer terminus to the post-insertion site. After completing replication of a mtDNA strand, mediates 3' → 5' exonucleolytic degradation at the nick to enable proper ligation (By similarity). Highly accurate due to high nucleotide selectivity and 3' → 5' exonucleolytic proofreading. Proficiently corrects base substitutions, single-base additions and deletions in non-repetitive sequences and short repeats, but displays lower proofreading activity when replicating longer homopolymeric stretches. Exerts exonuclease activity toward single-stranded DNA and double-stranded DNA containing 3'-terminal mismatches. When a misincorporation occurs, transitions from replication to a pro-nucleolytic editing mode and removes the misincorporated nucleoside in the exonuclease active site. Proceeds via an SN2 nucleolytic mechanism in which Asp-198 catalyzes phosphodiester bond hydrolysis and Glu-200 stabilizes the leaving group. As a result the primer strand becomes one nucleotide shorter and is positioned in the post-insertion site, ready to resume DNA synthesis (By similarity). Exerts 5'-deoxyribose phosphate (dRP) lyase activity and mediates repair-associated mtDNA synthesis (gap filling) in base-excision repair pathway. Catalyzes the release of the 5'-terminal 2-deoxyribose-5-phosphate sugar moiety from incised apurinic/apyrimidinic (AP) sites to produce a substrate for DNA ligase. The dRP lyase reaction does not require divalent metal ions and likely proceeds via a Schiff base intermediate in a beta-elimination reaction mechanism (By similarity).

#### Cellular Location

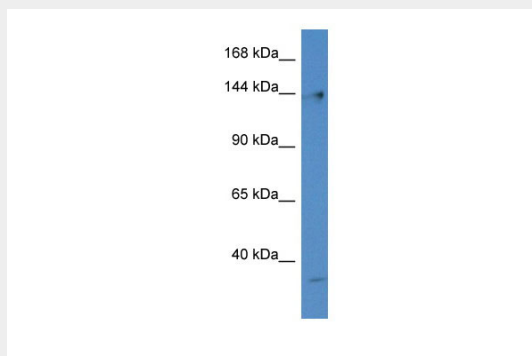
Mitochondrion {ECO:0000250|UniProtKB:P54098}. Mitochondrion matrix, mitochondrion nucleoid {ECO:0000250|UniProtKB:P54098}

#### Polg antibody - N-terminal region - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Polg antibody - N-terminal region - Images



WB Suggested Anti-Polg Antibody Titration: 1.0 µg/ml  
Positive Control: Rat Lung

