

**Phospho-PARP1(S274) Antibody**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP3786b**

**Specification**

**Phospho-PARP1(S274) Antibody - Product Information**

|                   |                             |
|-------------------|-----------------------------|
| Application       | DB,E                        |
| Primary Accession | <a href="#">P09874</a>      |
| Other Accession   | <a href="#">NP_001609.2</a> |
| Reactivity        | Human                       |
| Host              | Rabbit                      |
| Clonality         | Polyclonal                  |
| Isotype           | Rabbit Ig                   |
| Calculated MW     | 113084                      |

**Phospho-PARP1(S274) Antibody - Additional Information**

**Gene ID 142**

**Other Names**

Poly [ADP-ribose] polymerase 1, PARP-1, ADP-ribosyltransferase diphtheria toxin-like 1, ARTD1, NAD(+) ADP-ribosyltransferase 1, ADPRT 1, Poly[ADP-ribose] synthase 1, PARP1, ADPRT, PPOL

**Target/Specificity**

This PARP1 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S274 of human PARP1.

**Dilution**

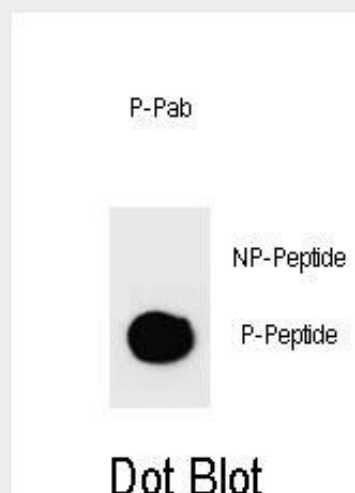
DB~~1:500

**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.



Dot blot analysis of Phospho-PARP1-S274 Antibody Phospho-specific Pab (Cat. #AP3786b) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.6ug per ml.

**Phospho-PARP1(S274) Antibody - Background**

This gene encodes a chromatin-associated enzyme, poly(ADP-ribosyl)transferase, which modifies various nuclear proteins by poly(ADP-ribosyl)ation. The modification is dependent on DNA and is involved in the regulation of various important cellular processes such as differentiation, proliferation, and tumor transformation and also in the regulation of the molecular events involved in the recovery of cell from DNA damage. In addition, this enzyme may be the site of mutation in Fanconi anemia, and may participate in the pathophysiology of type I

**Precautions**

Phospho-PARP1(S274) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Phospho-PARP1(S274) Antibody - Protein Information**

**Name** PARP1 ([HGNC:270](#))

**Function**

Poly-ADP-ribosyltransferase that mediates poly-ADP- ribosylation of proteins and plays a key role in DNA repair (PubMed:<a href="http://www.uniprot.org/citations/17177976" target="\_blank">17177976</a>, PubMed:<a href="http://www.uniprot.org/citations/18172500" target="\_blank">18172500</a>, PubMed:<a href="http://www.uniprot.org/citations/19344625" target="\_blank">19344625</a>, PubMed:<a href="http://www.uniprot.org/citations/19661379" target="\_blank">19661379</a>, PubMed:<a href="http://www.uniprot.org/citations/23230272" target="\_blank">23230272</a>, PubMed:<a href="http://www.uniprot.org/citations/25043379" target="\_blank">25043379</a>, PubMed:<a href="http://www.uniprot.org/citations/33186521" target="\_blank">33186521</a>, PubMed:<a href="http://www.uniprot.org/citations/32028527" target="\_blank">32028527</a>, PubMed:<a href="http://www.uniprot.org/citations/26344098" target="\_blank">26344098</a>). Mediates glutamate, aspartate, serine or tyrosine ADP-ribosylation of proteins: the ADP-D-ribosyl group of NAD(+) is transferred to the acceptor carboxyl group of target residues and further ADP-ribosyl groups are transferred to the 2'-position of the terminal adenosine moiety, building up a polymer with an average chain length of 20-30 units (PubMed:<a href="http://www.uniprot.org/citations/7852410" target="\_blank">7852410</a>, PubMed:<a href="http://www.uniprot.org/citations/9315851" target="\_blank">9315851</a>, PubMed:<a href="http://www.uniprot.org/citations/19764761" target="\_blank">19764761</a>

diabetes.

**Phospho-PARP1(S274) Antibody - References**

Majewski, P.M., et al. J. Biol. Chem. 285(45):34828-34838(2010)  
Kim, M., et al. Cancer Sci. 101(11):2436-2442(2010)  
Dong, Y., et al. Cancer Res. 70(20):8088-8096(2010)  
Krishnakumar, R., et al. Mol. Cell 39(5):736-749(2010)  
Lee, K.A., et al. Rheumatol. Int. (2010) In press  
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target="\_blank">19764761</a>,  
PubMed:<a href="http://www.uniprot.org/citations/25043379"  
target="\_blank">25043379</a>,  
PubMed:<a href="http://www.uniprot.org/citations/28190768"  
target="\_blank">28190768</a>,  
PubMed:<a href="http://www.uniprot.org/citations/29954836"  
target="\_blank">29954836</a>). Serine  
ADP- ribosylation of proteins constitutes the  
primary form of ADP- ribosylation of  
proteins in response to DNA damage  
(PubMed:<a href="http://www.uniprot.org/citations/33186521"  
target="\_blank">33186521</a>). Mainly  
mediates glutamate and aspartate  
ADP-ribosylation of target proteins in  
absence of HPF1 (PubMed:<a href="http://www.uniprot.org/citations/19764761"  
target="\_blank">19764761</a>,  
PubMed:<a href="http://www.uniprot.org/citations/25043379"  
target="\_blank">25043379</a>).  
Following interaction with HPF1, catalyzes  
serine ADP-ribosylation of target proteins;  
HPF1 conferring serine specificity by  
completing the PARP1 active site  
(PubMed:<a href="http://www.uniprot.org/citations/28190768"  
target="\_blank">28190768</a>,  
PubMed:<a href="http://www.uniprot.org/citations/29954836"  
target="\_blank">29954836</a>,  
PubMed:<a href="http://www.uniprot.org/citations/33186521"  
target="\_blank">33186521</a>,  
PubMed:<a href="http://www.uniprot.org/citations/32028527"  
target="\_blank">32028527</a>). Also  
catalyzes tyrosine ADP-ribosylation of  
target proteins following interaction with  
HPF1 (PubMed:<a href="http://www.uniprot.org/citations/30257210"  
target="\_blank">30257210</a>,  
PubMed:<a href="http://www.uniprot.org/citations/29954836"  
target="\_blank">29954836</a>). PARP1  
initiates the repair of DNA breaks:  
recognizes and binds DNA breaks within  
chromatin and recruits HPF1, licensing  
serine ADP-ribosylation of target proteins,  
such as histones, thereby promoting  
decompaction of chromatin and the  
recruitment of repair factors leading to the  
reparation of DNA strand breaks  
(PubMed:<a href="http://www.uniprot.org/c

itations/17177976"  
target="\_blank">17177976</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/18172500"  
target="\_blank">18172500</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/19344625"  
target="\_blank">19344625</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/19661379"  
target="\_blank">19661379</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/23230272"  
target="\_blank">23230272</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/27067600"  
target="\_blank">27067600</a>). In  
addition to base excision repair (BER)  
pathway, also involved in double-strand  
breaks (DSBs) repair: together with  
TIMELESS, accumulates at DNA damage  
sites and promotes homologous  
recombination repair by mediating  
poly-ADP-ribosylation (PubMed:<a href="htt  
p://www.uniprot.org/citations/26344098"  
target="\_blank">26344098</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/30356214"  
target="\_blank">30356214</a>). Mediates  
the poly(ADP-ribosyl)ation of a number of  
proteins, including itself, APLF and CHFR  
(PubMed:<a href="http://www.uniprot.org/c  
itations/17396150"  
target="\_blank">17396150</a>,  
PubMed:<a href="http://www.uniprot.org/ci  
tations/19764761"  
target="\_blank">19764761</a>). In  
addition to proteins, also able to  
ADP-ribosylate DNA: catalyzes  
ADP-ribosylation of DNA strand break  
termini containing terminal phosphates and  
a 2'-OH group in single- and  
double-stranded DNA, respectively  
(PubMed:<a href="http://www.uniprot.org/c  
itations/27471034"  
target="\_blank">27471034</a>). Required  
for PARP9 and DTX3L recruitment to DNA  
damage sites (PubMed:<a href="http://ww  
w.uniprot.org/citations/23230272"  
target="\_blank">23230272</a>). PARP1-  
dependent PARP9-DTX3L-mediated  
ubiquitination promotes the rapid and  
specific recruitment of 53BP1/TP53BP1,  
UIMC1/RAP80, and BRCA1 to DNA damage  
sites (PubMed:<a href="http://www.uniprot.  
org/citations/23230272"  
target="\_blank">23230272</a>). Acts as a

regulator of transcription: positively regulates the transcription of MTUS1 and negatively regulates the transcription of MTUS2/TIP150 (PubMed:<a href="http://www.uniprot.org/citations/19344625" target="\_blank">19344625</a>). Plays a role in the positive regulation of IFNG transcription in T-helper 1 cells as part of an IFNG promoter-binding complex with TXK and EEF1A1 (PubMed:<a href="http://www.uniprot.org/citations/17177976" target="\_blank">17177976</a>). Involved in the synthesis of ATP in the nucleus, together with NMNAT1, PARG and NUDT5 (PubMed:<a href="http://www.uniprot.org/citations/27257257" target="\_blank">27257257</a>). Nuclear ATP generation is required for extensive chromatin remodeling events that are energy-consuming (PubMed:<a href="http://www.uniprot.org/citations/27257257" target="\_blank">27257257</a>).

**Cellular Location**

Nucleus, nucleolus. Chromosome  
Note=Localizes to sites of DNA damage.

**Phospho-PARP1(S274) Antibody -  
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](#)