

Phospho-PARP1(S41) Antibody
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3786d

Specification

Phospho-PARP1(S41) Antibody - Product Information

Application	DB,E
Primary Accession	P09874
Other Accession	P27008 , P11103 , Q9R152 , NP_001609.2
Reactivity Predicted	Human Hamster, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig
Calculated MW	113084

Phospho-PARP1(S41) 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 S41 of human PARP1.

Dilution

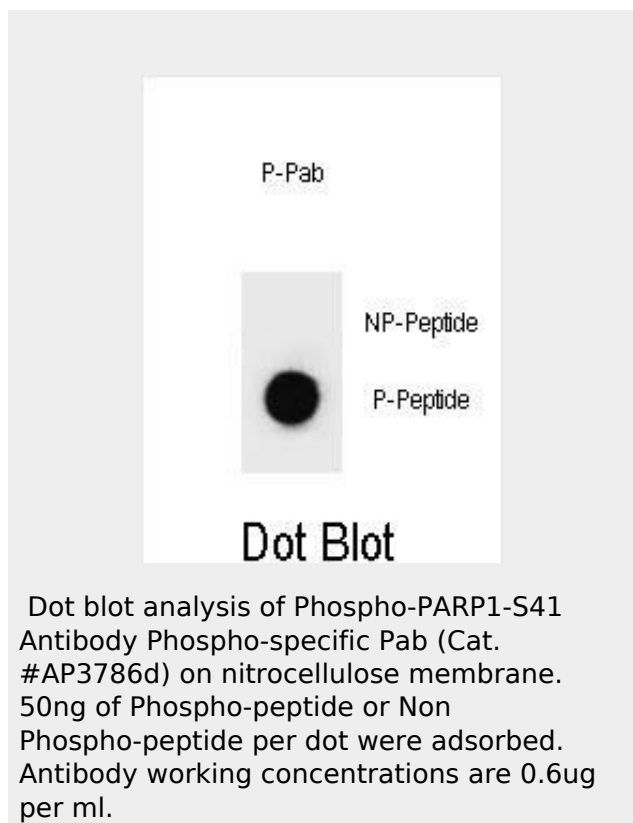
DB~~1:500

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



Phospho-PARP1(S41) 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

weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

Phospho-PARP1(S41) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-PARP1(S41) 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:17177976, PubMed:18172500, PubMed:19344625, PubMed:19661379, PubMed:23230272, PubMed:25043379, PubMed:33186521, PubMed:32028527, PubMed:26344098). 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:7852410, PubMed:17177976).

diabetes.

Phospho-PARP1(S41) 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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tations/9315851"
target="_blank">9315851,
PubMed:<a href="http://www.uniprot.org/ci
tations/19764761"
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PubMed:<a href="http://www.uniprot.org/ci
tations/25043379"
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PubMed:<a href="http://www.uniprot.org/ci
tations/28190768"
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PubMed:<a href="http://www.uniprot.org/ci
tations/29954836"
target="_blank">29954836). 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/c
itations/33186521"
target="_blank">33186521). 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,
PubMed:<a href="http://www.uniprot.org/ci
tations/25043379"
target="_blank">25043379).
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/c
itations/28190768"
target="_blank">28190768,
PubMed:<a href="http://www.uniprot.org/ci
tations/29954836"
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PubMed:<a href="http://www.uniprot.org/ci
tations/33186521"
target="_blank">33186521,
PubMed:<a href="http://www.uniprot.org/ci
tations/32028527"
target="_blank">32028527). Also
catalyzes tyrosine ADP-ribosylation of
target proteins following interaction with
HPF1 (PubMed:<a href="http://www.uniprot
.org/citations/30257210"
target="_blank">30257210,
PubMed:<a href="http://www.uniprot.org/ci
tations/29954836"
target="_blank">29954836). 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:17177976, PubMed:18172500, PubMed:19344625, PubMed:19661379, PubMed:23230272, PubMed:27067600). 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:26344098, PubMed:30356214). Mediates the poly(ADP-ribosyl)ation of a number of proteins, including itself, APLF and CHFR (PubMed:17396150, PubMed:19764761). 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:27471034). Required for PARP9 and DTX3L recruitment to DNA damage sites (PubMed:23230272). PARP1-dependent PARP9-DTX3L-mediated ubiquitination promotes the rapid and specific recruitment of 53BP1/TP53BP1,

UIMC1/RAP80, and BRCA1 to DNA damage sites (PubMed:23230272). Acts as a regulator of transcription: positively regulates the transcription of MTUS1 and negatively regulates the transcription of MTUS2/TIP150 (PubMed:19344625). 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:17177976). Involved in the synthesis of ATP in the nucleus, together with NMNAT1, PARG and NUDT5 (PubMed:27257257). Nuclear ATP generation is required for extensive chromatin remodeling events that are energy-consuming (PubMed:27257257).

Cellular Location

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

Phospho-PARP1(S41) 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](#)