

PARP1 Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19841C

Specification

PARP1 Antibody (Center) - Product Information

Application	WB,E
Primary Accession	P09874
Other Accession	P18493 , NP_001609.2
Reactivity	Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig
Calculated MW	113084
Antigen Region	590-618

PARP1 Antibody (Center) - 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 peptide between 590-618 amino acids from the Central region of human PARP1.

Dilution

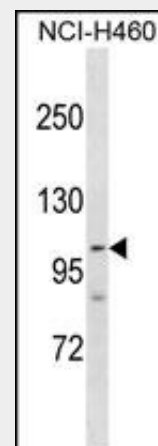
WB~~1:1000

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.



PARP1 Antibody (Center) (Cat. #AP19841c) western blot analysis in NCI-H460 cell line lysates (35ug/lane). This demonstrates the PARP1 antibody detected the PARP1 protein (arrow).

PARP1 Antibody (Center) - 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 diabetes.

PARP1 Antibody (Center) - References

Majewski, P.M., et al. J. Biol. Chem.

Precautions

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

PARP1 Antibody (Center) - 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](http://www.uniprot.org/citations/17177976)), PubMed:[18172500](http://www.uniprot.org/citations/18172500), PubMed:[19344625](http://www.uniprot.org/citations/19344625), PubMed:[19661379](http://www.uniprot.org/citations/19661379), PubMed:[23230272](http://www.uniprot.org/citations/23230272), PubMed:[25043379](http://www.uniprot.org/citations/25043379), PubMed:[33186521](http://www.uniprot.org/citations/33186521), PubMed:[32028527](http://www.uniprot.org/citations/32028527), PubMed:[26344098](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/7852410), PubMed:[9315851](http://www.uniprot.org/citations/9315851), PubMed:[19764761](http://www.uniprot.org/citations/19764761)).

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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PubMed:25043379, PubMed:28190768, PubMed:29954836). Serine ADP- ribosylation of proteins constitutes the primary form of ADP- ribosylation of proteins in response to DNA damage (PubMed:33186521). Mainly mediates glutamate and aspartate ADP-ribosylation of target proteins in absence of HPF1 (PubMed:19764761, PubMed:25043379). Following interaction with HPF1, catalyzes serine ADP-ribosylation of target proteins; HPF1 conferring serine specificity by completing the PARP1 active site (PubMed:28190768, PubMed:29954836, PubMed:33186521, PubMed:32028527). Also catalyzes tyrosine ADP-ribosylation of target proteins following interaction with HPF1 (PubMed:30257210, PubMed: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

target="_blank">17177976,
PubMed:<a href="http://www.uniprot.org/citations/18172500"
target="_blank">18172500,
PubMed:<a href="http://www.uniprot.org/citations/19344625"
target="_blank">19344625,
PubMed:<a href="http://www.uniprot.org/citations/19661379"
target="_blank">19661379,
PubMed:<a href="http://www.uniprot.org/citations/23230272"
target="_blank">23230272,
PubMed:<a href="http://www.uniprot.org/citations/27067600"
target="_blank">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:<a href="http://www.uniprot.org/citations/26344098"
target="_blank">26344098,
PubMed:<a href="http://www.uniprot.org/citations/30356214"
target="_blank">30356214). Mediates the poly(ADP-ribosyl)ation of a number of proteins, including itself, APLF and CHFR (PubMed:<a href="http://www.uniprot.org/citations/17396150"
target="_blank">17396150,
PubMed:<a href="http://www.uniprot.org/citations/19764761"
target="_blank">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:<a href="http://www.uniprot.org/citations/27471034"
target="_blank">27471034). Required for PARP9 and DTX3L recruitment to DNA damage sites (PubMed:<a href="http://www.uniprot.org/citations/23230272"
target="_blank">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:<a href="http://www.uniprot.org/citations/23230272"
target="_blank">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, nucleolus. Chromosome
Note=Localizes to sites of DNA damage.

PARP1 Antibody (Center) - 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](#)