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PARP1 Antibody (N-term) Blocking Peptide

Synthetic peptide

Catalog # BP6373a

Specification

PARP1 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession P09874

PARP1 Antibody (N-term) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP6373a was selected from the N-term region of human PARP1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

PARP1 Antibody (N-term) Blocking Peptide - Protein Information

PARP1 Antibody (N-term) Blocking Peptide - Background

PARP1 is 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 (N-term) Blocking Peptide - References

Tao,Z., Biochemistry 47 (21), 5804-5813 (2008)Gao,R., Mol. Cancer Ther. 7 (5), 1246-1250 (2008)Schreiber,V., EMBO J. 11 (9), 3263-3269 (1992)

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:9315851, PubMed:19764761, PubMed:25043379, PubMed:28190768, PubMed:<a href="http://www.uniprot.org/citations/29954836"

target="_blank">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, PubMed:18172500, PubMed:19344625, PubMed:<a href="http://www.uniprot.org/ci

tations/19661379"
target="_blank">19661379,
PubMed:<a href="http://www.uniprot.org/ci
tations/23230272"
target="_blank">23230272,
PubMed:<a href="http://www.uniprot.org/ci
tations/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="htt
p://www.uniprot.org/citations/26344098"
target="_blank">26344098,
PubMed:<a href="http://www.uniprot.org/ci
tations/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/c
itations/17396150"
target="_blank">17396150,
PubMed:<a href="http://www.uniprot.org/ci
tations/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/c
itations/27471034"
target="_blank">27471034). Required
for PARP9 and DTX3L recruitment to DNA
damage sites (PubMed:<a href="http://ww
w.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:<a href="http://ww
w.uniprot.org/citations/19344625"
target="_blank">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.

PARP1 Antibody (N-term) Blocking Peptide - Protocols

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

- Blocking Peptides