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Cleaved PARP (Asp214) Blocking Peptide

Synthetic peptide
Catalog # BP22119a

Specification

Cleaved PARP (Asp214) Blocking Peptide - Product Information

Primary Accession P09874

Cleaved PARP (Asp214) Blocking Peptide - Additional Information

Gene ID 142

Target/Specificity
The synthetic peptide sequence is selected from aa 215-225 of HUMAN PARP1

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.

Cleaved PARP (Asp214) Blocking Peptide - 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:<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/25043379"
target="_blank">25043379,
PubMed:<a href="http://www.uniprot.org/citations/33186521"
target="_blank">33186521,
PubMed:<a href="http://www.uniprot.org/citations/32028527"
target="_blank">32028527,
PubMed:<a href="http://www.uniprot.org/citations/26344098"
target="_blank">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:<a href="http://www.uniprot.org/citations/7852410"
target="_blank">7852410,
PubMed:<a href="http://www.uniprot.org/citations/9315851"
target="_blank">9315851,
PubMed:<a href="http://www.uniprot.org/citations/19764761"
target="_blank">19764761,
PubMed:<a href="http://www.uniprot.org/citations/25043379"
target="_blank">25043379,
PubMed:<a href="http://www.uniprot.org/citations/28190768"
target="_blank">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:<a href="http://www.uniprot.org/citations/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"
target="_blank">29954836,
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:<a href="http://www.uniprot.org/c
itations/17177976"
target="_blank">17177976,
PubMed:<a href="http://www.uniprot.org/ci
tations/18172500"
target="_blank">18172500,
PubMed:<a href="http://www.uniprot.org/ci
tations/19344625"
target="_blank">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: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.

Cleaved PARP (Asp214) Blocking Peptide - Protocols

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

- Blocking Peptides