

## PARP Protein, Mouse, Recombinant (His)

## General Information

Synonyms:	AI893648;Adprp;5830444G22Rik;C80510;sPARP-1;poly (ADP-ribose) polymerase 1;PARP; Adprt1;PPOL;parp-1;ARTD1
Protein Construction:	A DNA sequence encoding the mouse PARP1 (NP_031441.2) (Met 1-Trp 1014) was fused with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Mouse
Expression Host:	Baculovirus Insect Cells
Accession:	Q921K2
Molecular Weight:	115 kDa (predicted); 75 kDa (reducing conditions)

## QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 8.0, 10% gly, 0.1 mM TCEP. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

## Preparation and Storage

## Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

## Stability &amp; Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

## Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

## Protein Background

Poly (ADP-ribose) polymerase 1 (PARP1), also known as NAD(+) ADP-ribosyltransferase 1 (ADPRT), is a chromatin-associated enzyme that modifies various nuclear proteins by poly(ADP-ribosylation). The ADP-D-ribosyl group of NAD<sup>+</sup> is transferred to an acceptor carboxyl group on a histone or the enzyme itself, 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 2-3 units. The poly(ADP-ribosyl)ation modification is critical for a wide range of processes, including DNA repair, regulation of chromosome structure, transcriptional regulation, mitosis and apoptosis. PARP1 is demonstrated to mediate the poly(ADP-ribose) ation of APLF (aprataxin PNK-like factor) and CHFR (checkpoint protein with FHA and RING domains), two representative proteins involved in the DNA damage response and checkpoint regulation. Further, It has been suggested that DNA-dependent protein kinase (DNA-PK), another component of DNA repair, suppresses PARP activity, probably through direct binding and/or sequestration of DNA-ends which serve as an important stimulator for both enzymes. PARP1 inhibitors are thus proposed as a targeted cancer therapy for recombination deficient cancers, such as BRCA2 tumors. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

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Ahell I. et al., 2008, Nature. 451: 81-85.

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