Data Sheet (Cat.No.TMPY-01188)

TargetMol

PARP1 Protein, Human, Recombinant (His)

General Information

Synonyms:	ADPRT1;ADPRT;pADPRT-1;PPOL;ARTD1;PARP-1;poly (ADP-ribose) polymerase 1;PARP
Protein Construction:	The amino acids corresponding to the full length of human PARP1 (NP_001609.2) (Met 1-Trp 1014) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P09874
Molecular Weight:	114.5 kDa (predicted); 100-110 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:	≥ 90 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 300 mM NaCl, 10% glycerol, 0.5 mM TCEP, 2 mM EDTA, pH 7.5.

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 & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Poly (ADP-ribose) polymerase 1(PRAP1), also known as NAD(+) ADP-ribosyltransferase 1(ADPRT), is a chromatin-associated enzyme that modifies various nuclear proteins by poly(ADP-ribosyl)ation. The ADP-D-ribosyl group of NAD+ 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 ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

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Ariumi Y. et al., 1999, Oncogene. 18: 4616-4625.
Helleday T. et al., 2005, Cell Cycle. 4: 1176-1178.
Ahell I. et al., 2008, Nature. 451: 81-85.