

## PARP3 Protein, Human (sf9, His-GST)

Cat. No.:	HY-P75955
Synonyms:	Protein mono-ADP-ribosyltransferase PARP3; ARTD3; IRT1; ADPRT-3; PARP-3
Species:	Human
Source:	Sf9 insect cells
Accession:	Q9Y6F1 (M1-L533)
Gene ID:	10039
Molecular Weight:	Approximately 95 kDa

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.0, 10% Glycerol. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

PARP3 protein, a mono-ADP-ribosyltransferase, plays a pivotal role in the cellular response to DNA damage, as highlighted in various studies reported in PubMed. Unlike PARP1 and PARP2, PARP3 specifically mediates mono-ADP-ribosylation, targeting glutamate, aspartate, or lysine residues on select proteins, such as histone H2B, XRCC5, and XRCC6, involved in chromatin architecture and DNA metabolism. This protein is instrumental in DNA repair processes, participating in the detection and signaling pathway triggered by DNA strand breaks. In single-strand break repair, it catalyzes mono-ADP-ribosylation of histone H2B, fostering accurate non-homologous end-joining (NHEJ) in collaboration with the XRCC5-XRCC6 heterodimer. PARP3 also suppresses G-quadruplex structures and is associated with various DNA repair factors, contributing to the cellular response to both exogenous and endogenous DNA damage. Additionally, it acts as a negative regulator of immunoglobulin class switch recombination and is capable of ADP-ribosylating DNA strand break termini, showcasing its multifaceted involvement in genomic maintenance and cellular processes.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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