

Product Information

PARP, human recombinant, expressed in *E. coli*

Catalog Number **P0996**
Storage Temperature -20°C

Synonyms: Poly(ADP-ribose) Polymerase, PARP-1

Product Description

This product is human, recombinant PARP type 1 (PARP-1) expressed in *E. coli*. The protein has a molecular mass of 116 kDa and shows a major band (SDS-PAGE) at this molecular mass.

Poly(ADP-ribosylation) is a post-translational modification of nuclear proteins in response to DNA damage. This modification activates the base excision repair mechanism. At the sites of DNA strand breaks, poly(ADP-ribose) polymerase catalyzes the transfer of ADP-ribose from NAD^+ to certain proteins involved in chromatin structure, DNA repair, and DNA metabolism, including PARP itself.¹⁻²

PARP-1 is a nuclear enzyme that synthesizes ADP-ribose polymers from NAD^+ , specifically binds Zn^{2+} and DNA, and recognizes single-strand breaks in DNA.¹⁻² It is involved in base excision repair, both short-patch and long-patch,³ rejoining DNA strand breaks,¹ and plays a role in p53 expression and activation.⁴ A high level of basal neuronal DNA damage and PARP activity has been reported in rat brain tissue.⁵ PARP-1 was shown to be required for HIV-1 integration into DNA. If PARP-1 is deficient there is no productive HIV-1 infection.⁶

Other members of the PARP family include PARP-2, the plant enzymes APP and NAP,^{7,8} and tankyrase, an enzyme originally identified and localized at human telomeres.⁹

This product is supplied as a solution in 20 mM Tris-HCl, pH 8.0, 200 mM NaCl, 1 mM DTT, 0.1% Triton® X-100, 50% glycerol, and 0.1 mg/ml bovine serum albumin.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on wet ice and storage at -20°C is recommended. The enzyme retains over 65% of its activity after 24 hours at 37°C .

References

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6. Ha, H. C., et al., Poly(ADP-ribose) polymerase-1 is required for efficient HIV-1 integration. *Proc. Natl. Acad. Sci. USA*, **98**, 3364-3368 (2001).
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