

Product Information

PARP-1, HIGH PURITY

Human, Recombinant

Product Number **P 1863**

Storage Temperature -70°C

Product Description

Human Recombinant PARP-1 [Poly(ADP-ribose) Polymerase-1] is expressed in Sf9 cells using a baculovirus system and purified by affinity chromatography.¹ The protein has a molecular mass of 116 kDa.¹

Poly(ADP-ribosylation) is a post-translation 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.¹⁻³

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.¹⁻³ It is involved in base excision repair, both short-patch and long-patch,⁴ rejoining DNA strand breaks,² and plays a role in p53 expression and activation.⁵ A high level of basal neuronal DNA damage and PARP activity has been reported in rat brain tissue.⁶ 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.⁷

Other members of the PARP family include PARP-2, the plant enzymes APP and NAP,^{8,9} and tankyrase, an enzyme originally identified and localized at human telomeres.¹⁰

Reagent

Human Recombinant PARP-1 is supplied as 20 μg protein in 50 mM Tris-HCl, pH 7.5, 14 mM β -mercaptoethanol, 0.5 mM PMSF, 10 % glycerol.

Storage/Stability

Store in aliquots at -70°C . Avoid multiple freeze-thaw cycles.

Product Profile

Purity: > 98%

One unit synthesizes 1 nmol of poly(ADP-ribose)/min. at 25°C

Activity: approx. 30 units/ μg

References

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