



Product Information

PARP-1

Bovine

Product Number **P 1613**

Storage Temperature $-70\text{ }^{\circ}\text{C}$

Synonym: Poly(ADP-ribose) Polymerase-1

Product Description

Bovine PARP-1 is isolated from a bovine source and purified by hydroxyapatite chromatography.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.²⁻⁴

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.²⁻⁴ It is involved in base excision repair, both short-patch and long-patch, rejoining DNA strand breaks, and plays a role in p53 expression and activation.³⁻⁶ A high level of basal neuronal DNA damage and PARP activity has been reported in rat brain tissue.⁷ 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.⁸

Other known members of the PARP family include PARP-2, the plant enzymes APP and NAP,^{9,10} and tankyrase, an enzyme originally identified and localized at human telomeres.¹¹

Bovine PARP-1 is supplied as a solution in 60 mM KH_2PO_4 , pH 7.2, 0.5 to 2 M KCl, 10% glycerol, 1 mM DTT, 10 mM β -mercaptoethanol, 0.1 mM PMSF.

Purity: **approximately 90%** (PAGE)

Activity: minimum 600 units/mg protein ($\text{E}^{1\%}$)

Unit Definition: One unit synthesizes 1 nmole of poly(ADP-ribose) per minute at pH 7.2 at $37\text{ }^{\circ}\text{C}$.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at $-70\text{ }^{\circ}\text{C}$ is recommended. PARP-1 may be stored in frozen aliquots at $-70\text{ }^{\circ}\text{C}$. Avoid multiple freeze-thaw cycles.

References

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