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Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION

PARP1 (human, recombinant)

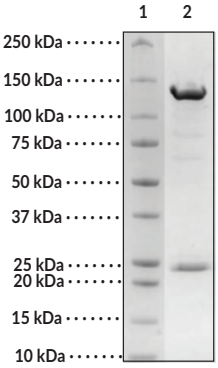
Item No. 32561

Overview and Properties

Synonyms:	ADP-ribose Transferase 1, ADPRT, PARP1, PARP-1, NAD$^+$ADP-ribosyltransferase 1, Poly(ADP-ribose) Polymerase 1
Source:	Active recombinant human N-terminal GST-tagged PARP1 expressed in insect cells
Amino Acids:	2-1,041 (full length)
Uniprot No.:	P09874
Molecular Weight:	139 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	***batch specific*** (≥80% estimated by SDS-PAGE)
Supplied in:	40 mM Tris, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 0.5 mM glutathione, 3 mM DTT, and 20% glycerol
Protein Concentration:	***batch specific*** mg/ml
Activity:	Ribosylation activity measured by chemiluminescent assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

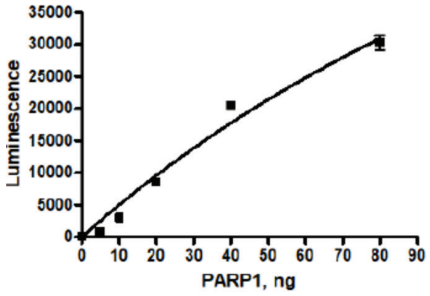
Images



Lane 1: MW Markers
Lane 2: PARP1 (2 µg)

SDS-PAGE Analysis of PARP1.

Representative gel image shown; actual purity may vary between each batch.



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PRODUCT INFORMATION

Description

Poly(ADP-ribose) polymerase 1 (PARP1) is an ADP-ribosylating enzyme that has roles in DNA repair, maintenance of genomic integrity, and transcriptional regulation.[1,2] It is composed of an N-terminal DNA-binding domain (DBD) that contains the nuclear localization signal (NLS) and three zinc fingers that mediate PARP1 self-assembly and activation, a central automodification domain, and a highly conserved C-terminal catalytic domain.[1,3] PARP1 is ubiquitously expressed and localizes to the nucleus where it is recruited to sites of DNA damage induced by a variety of cellular stressors, including genomic, oxidative, inflammatory, or metabolic stress.[1,4] Binding of PARP1 to DNA single- or double-strand breaks activates its poly(ADP)-ribosylation (PARylation) catalytic activity. PARP1 PARylates itself, increasing its activity and recruiting additional DNA repair proteins to sites of damaged DNA, as well as PARylates other proteins, including transcription factors, to facilitate DNA damage repair.[1,4] PARP1 is subject to additional PTMs, including phosphorylation, methylation, and acetylation, that regulate its catalytic and DNA-binding activities.[5] Increased PARP1 levels have been found in tumors isolated from patients with a variety of cancers, including soft tissue sarcoma and ovarian or squamous cell carcinomas, and are associated with decreased survival. Cayman's PARP1 (human, recombinant) protein can be used for enzyme assay applications. This protein consists of 1,040 amino acids and has a calculated molecular weight of 139 kDa.

References

1. Chaudhuri, A.R. and Nussenzweig, A. The multifaceted roles of PARP1 in DNA repair and chromatin remodelling. *Nat. Rev. Mol. Cell Biol.* **18(10)**, 610-621 (2017).
2. Ko, H.L. and Ren, E.C. Functional aspects of PARP1 in DNA repair and transcription. *Biomolecules* **2(4)**, 524-548 (2012).
3. Alemasova, E.E. and Lavrik, O.I. Poly(ADP-ribosyl)ation by PARP1: Reaction mechanism and regulatory proteins. *Nucleic Acids Res.* **47(8)**, 3811-3827 (2019).
4. Luo, X. and Kraus, W.L. On PAR with PARP: Cellular stress signaling through poly(ADP-ribose) and PARP-1. *Genes Dev.* **26(5)**, 417-432 (2012).
5. Pazzaglia, S. and Pioli, C. Multifaceted role of PARP-1 in DNA repair and inflammation: Pathological and therapeutic implications in cancer and non-cancer diseases. *Cells* **9(1)**, 41 (2020).

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