

PRODUCT INFORMATION



PARP2 (human, recombinant)

Item No. 32562

Overview and Properties

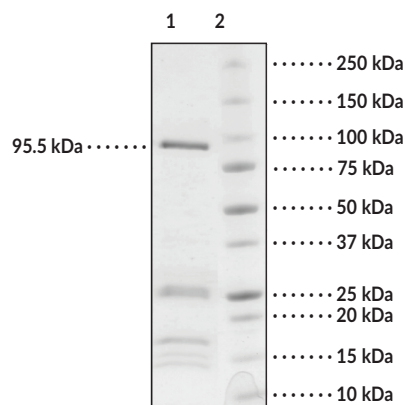
Synonyms: ADPRT, ADPRT2, ADPRTL2, ARTD2, Poly (ADP-ribose) Polymerase 2, Poly(ADP-ribose)transferase 2
Source: Active recombinant human N-terminal GST-tagged PARP2 expressed in insect cells
Amino Acids: 2-583 (full length)
Uniprot No.: Q9UGN5
Molecular Weight: 95.5 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: *batch specific* (≥50% estimated by SDS-PAGE)
Supplied in: 40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 16 mM glutathione, 20% glycerol, and 3 mM DTT

Protein

Concentration: *batch specific* mg/ml
Activity: *batch specific* U/ml
Specific Activity: *batch specific* U/mg
Unit Definition: One unit of PARP incorporates 100 pmol of poly(ADP) in 1 minute from NAD into the acid-insoluble form

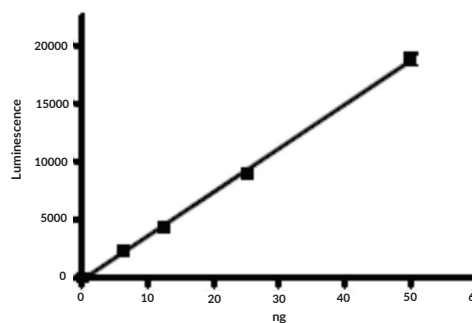
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: PARP2
Lane 2: MW Markers

SDS-PAGE Analysis of PARP2. This protein has a calculated molecular weight of 95.5 kDa.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Poly(ADP-Ribose) polymerase 2 (PARP2) is an ADP-ribosylating enzyme with a role in the DNA damage response (DRR).^{1,2} It is composed of a natively disordered N-terminal region containing a nuclear localization sequence, a central Trp-Gly-Arg (WGR) domain that is essential to DNA damage-dependent catalytic domain activity, and a C-terminal catalytic domain (CAT) that contains an ADP-ribosyltransferase fold and a regulatory helical subdomain.² PARP2 is ubiquitously expressed and localized to the nucleus where it is preferentially activated by the presence of PARP1-induced poly(ADP)-ribosylation (PARylation) induced by PARP1 (Item No. 32561) at sites of single-stranded DNA breaks. The WGR domain binds directly to DNA and activates PAR catalytic activity and branched PAR chain synthesis through cross-talk with the helical subdomain.^{1,2} PARP2 PARylates itself and other proteins, including transcription factors, influencing multiple biological processes, such as transcription, genome maintenance, and cell signaling.³ PARP2 expression is negatively correlated with the amount of tumor immune infiltrate in tumor samples isolated from patients with osteosarcoma.⁴ Cayman's PARP2 (human, recombinant) protein can be used for enzyme assay applications. This protein consists of 582 amino acids and has a calculated molecular weight of 92 kDa.

References

1. Chen, Q., Kassab, M.A., Dantzer, F., *et al.* PARP2 mediates branched poly ADP-ribosylation in response to DNA damage. *Nat. Commun.* **9(1)**, 3233 (2018).
2. Riccio, A.A., Cingolani, G. and Pascal, J.M. PARP-2 domain requirements for DNA damage-dependent activation and localization to sites of DNA damage. *Nucleic Acids Res.* **44(4)**, 1691-1702 (2016).
3. Ali, S.O., Khan, F.A., Galindo-Campos, M.A., *et al.* Understanding specific functions of PARP-2: New lessons for cancer therapy. *Am. J. Cancer Res.* **6(9)**, 1842-1863 (2016).
4. Wu, C.-C., Beird, H.C., Livingston, J.A., *et al.* Immuno-genomic landscape of osteosarcoma. *Nat. Commun.* **11(1)**, 1008 (2020).

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