SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-1 (5A5): sc-56197



BACKGROUND

Poly(ADP-ribose) polymerase-1 (PARP-1), also designated PARP, is a nuclear DNA-binding zinc finger protein that influences DNA repair, DNA replication, modulation of chromatin structure and apoptosis. In response to genotoxic stress, PARP-1 catalyzes the transfer of ADP-ribose units from NAD⁺ to a number of acceptor molecules including chromatin. PARP-1 recognizes DNA strand interruptions and can complex with RNA and negatively regulate transcription. Actinomycin D- and etoposide-dependent induction of caspases mediates cleavage of PARP-1 into a p89 fragment that traverses into the cytoplasm. Apoptosis-inducing factor (AIF) translocation from the mitochondria to the nucleus is PARP-1-dependent and is necessary for PARP-1-dependent cell death. PARP-1 deficiencies lead to chromosomal instability due to higher frequencies of chromosome fusions and aneuploidy, suggesting that poly(ADP-ribosyl)ation contributes to the efficient maintenance of genome integrity.

CHROMOSOMAL LOCATION

Genetic locus: PARP1 (human) mapping to 1q42.12; Parp1 (mouse) mapping to 1 H4.

SOURCE

PARP-1 (5A5) is a mouse monoclonal antibody raised against a fragment PARP-1 of human origin.

PRODUCT

Each vial contains 200 $\mu g~lg G_1$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PARP-1 (5A5) is recommended for detection of PARP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PARP-1 siRNA (h): sc-29437, PARP-1 siRNA (m): sc-29438, PARP-1 shRNA Plasmid (h): sc-29437-SH, PARP-1 shRNA Plasmid (m): sc-29438-SH, PARP-1 shRNA (h) Lentiviral Particles: sc-29437-V and PARP-1 shRNA (m) Lentiviral Particles: sc-29438-V.

Molecular Weight of full-length PARP-1: 116 kDa.

Molecular Weight of PARP-1 C-terminal cleavage product: 89 kDa.

Molecular Weight of PARP-1 N-terminal cleavage product: 24 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, HeLa nuclear extract: sc-2120 or Jurkat nuclear extract: sc-2132.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA





PARP-1 (5A5): sc-56197. Western blot analysis of PARP-1 expression in Ramos (A), Jurkat (B), HeLa (C) and CCRF-CEM (D) nuclear extracts and Daudi (E) and Raji (F) whole cell lysates.

PARP-1 (5A5): sc-56197. Western blot analysis of PARP-1 expression in Jurkat (A), NTERA-2 cl.D1 (B), HL-60 (C) and THP-1 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Li, X., et al. 2009. Inhibitor of growth 4 induces growth suppression and apoptosis in glioma U87MG. Pathobiology 76: 181-192.
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- Toots, M., et al. 2017. Identification of several high-risk HPV inhibitors and drug targets with a novel high-throughput screening assay. PLoS Pathog. 13: e1006168.
- 5. Lin, H.Y., et al. 2018. Design and characterization of α -lipoic acyl shikonin ester twin drugs as tubulin and PDK1 dual inhibitors. Eur. J. Med. Chem. 144: 137-150.
- Machado-Neto, J.A., et al. 2018. Metformin exerts multitarget antileukemia activity in JAK2^{V617F}-positive myeloproliferative neoplasms. Cell Death Dis. 9: 311.
- 7. Xu, N., et al. 2021. Ivermectin induces apoptosis of esophageal squamous cell carcinoma via mitochondrial pathway. BMC Cancer 21: 1307.
- Oh, K.S., et al. 2022. A synthetic lethal strategy using PARP and ATM inhibition for overcoming trastuzumab resistance in HER2-positive cancers. Oncogene 41: 3939-3952.
- Chen, L., et al. 2024. Nrf2 affects DNA damage repair and cell apoptosis through regulating HR and the intrinsic Caspase-dependent apoptosis pathway in TK6 cells exposed to hydroquinone. Toxicol In Vitro 100: 105901.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.