SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-1 (C2-10): sc-53643

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (C2-10) is a mouse monoclonal antibody raised against C-terminal purified thymus PARP-1 of calf origin.

PRODUCT

Each vial contains 50 µl ascites containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

PARP-1 (C2-10) is recommended for detection of PARP-1 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

PARP-1 (C2-10) is also recommended for detection of PARP-1 in additional species, including bovine.

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: Jurkat nuclear extract: sc-2132, Ramos nuclear extract: sc-2153 or HeLa nuclear extract: sc-2120.

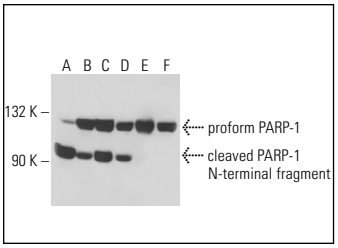
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

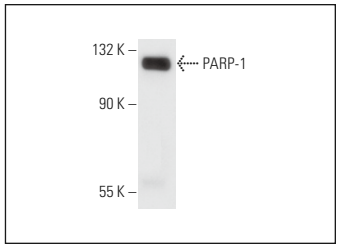
RESEARCH USE

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

DATA



PARP-1 (C2-10): sc-53643. 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 (C2-10): sc-53643. Western blot analysis of PARP-1 expression in Jurkat whole cell lysate.

SELECT PRODUCT CITATIONS

1. Wesierska-Gadek, J., et al. 2007. Roscovitine-activated HIP2 kinase induces phosphorylation of WT p53 at Ser 46 in human MCF7 breast cancer cells. J. Cell. Biochem. 100: 865-874.
2. Lee, J.K., et al. 2013. Cleavage of the JunB transcription factor by caspases generates a carboxyl-terminal fragment that inhibits activator protein-1 transcriptional activity. J. Biol. Chem. 288: 21482-21495.
3. Barilli, A., et al. 2014. Oxidative stress induced by copper and iron complexes with 8-hydroxyquinoline derivatives causes paraptotic death of HeLa cancer cells. Mol. Pharm. 11: 1151.
4. Leão, M., et al. 2015. Enhanced cytotoxicity of prenylated chalcone against tumour cells via disruption of the p53-MDM2 interaction. Life Sci. 142: 60-65.
5. Huang, F., et al. 2016. MicroRNA-187 induces diffuse large B-cell lymphoma cell apoptosis via targeting BCL6. Oncol. Lett. 11: 2845-2850.
6. Sahu, U., et al. 2017. Induction of intestinal stemness and tumorigenicity by aberrant internalization of commensal non-pathogenic *E. coli*. Cell Death Dis. 8: e2667.
7. Margalef, P., et al. 2018. Stabilization of reversed replication forks by telomerase drives telomere catastrophe. Cell 172: 439-453.e14.
8. Lee, K.J., et al. 2019. Defective base excision repair in the response to DNA damaging agents in triple negative breast cancer. PLoS ONE 14: e0223725.
9. Ha, Y.N., et al. 2020. Petromurin C induces protective autophagy and apoptosis in FLT3-ITD-positive AML: synergy with gilteritinib. Mar. Drugs 18: 57.

CONJUGATES

See **PARP-1 (F-2): sc-8007** for PARP-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.