SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-1 (A-20): sc-1562

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 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PARP of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1562 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PARP-1 (A-20) is recommended for detection of full-length PARP-1 and the N-terminal cleavage product of PARP-1 of mouse, rat, human and *Xenopus laevis* 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

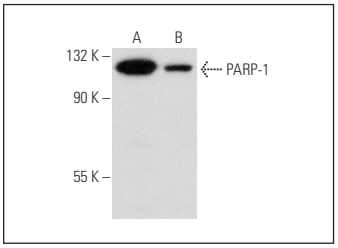
Molecular Weight of PARP-1 N-terminal cleavage product: 24 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa nuclear extract: sc-2120 or Jurkat nuclear extract: sc-2132.

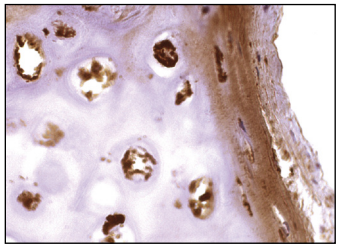
STORAGE

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

DATA



PARP-1 (A-20): sc-1562. Western blot analysis of PARP-1 expression in Jurkat (**A**) and HeLa (**B**) nuclear extracts.



PARP-1 (A-20): sc-1562. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing nuclear staining of cartilage cells.

SELECT PRODUCT CITATIONS

1. Voehringer, D.W., et al. 1998. Bcl-2 expression causes redistribution of glutathione to the nucleus. Proc. Natl. Acad. Sci. USA 95: 2956-2960.
2. Lotem, J. and Sachs, L. 1998. Different mechanisms for suppression of apoptosis by cytokines and calcium mobilizing compounds. Proc. Natl. Acad. Sci. USA 95: 4601-4606.
3. Venkatesan, B., et al. 2010. WNT1-inducible signaling pathway protein-1 activates diverse cell survival pathways and blocks doxorubicin-induced cardiomyocyte death. Cell. Signal. 22: 809-820.
4. Andújar, I., et al. 2010. Shikonin reduces oedema induced by phorbol ester by interfering with IκB-α degradation thus inhibiting translocation of NFκB to the nucleus. Br. J. Pharmacol. 160: 376-388.
5. Jose, C., et al. 2011. AICAR inhibits cancer cell growth and triggers cell-type distinct effects on OXPHOS biogenesis, oxidative stress and Akt activation. Biochim. Biophys. Acta 1807:707-718.
6. Zheng, L., et al. 2011. GDC-0941 sensitizes breast cancer to ABT-737 *in vitro* and *in vivo* through promoting the degradation of Mcl-1. Cancer Lett. 309: 27-36.
7. Cenni, V., et al. 2011. Ankrd2/ARPP is a novel Akt2 specific substrate and regulates myogenic differentiation upon cellular exposure to H_2O_2. Mol. Biol. Cell 22: 2946-2956.

RESEARCH USE

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