

PARP-1 (6D640): sc-71849

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-ribose)ylation contributes to the efficient maintenance of genome integrity.

REFERENCES

1. Kaufmann, S.H., Desnoyers, S., Ottaviano, Y., Davidson, N.E. and Poirier, G.G. 1993. Specific proteolytic cleavage of poly(ADP-ribose) polymerase: an early marker of chemotherapy-induced apoptosis. *Cancer Res.* 53: 2976-2985.
2. Lazebnik, Y.A., Kaufmann, S.H., Desnoyers, S., Poirier, G.G. and Earnshaw, W.C. 1994. Cleavage of poly(ADP-ribose) polymerase by a proteinase with properties like ICE. *Nature* 371: 346-347.
3. Darmon, A.J., Nicholson, D.W. and Bleackley, R.C. 1995. Activation of the apoptotic protease CPP32 by cytotoxic T cell-derived granzyme B. *Nature* 377: 446-448.
4. Wang, Z.Q., Stingl, L., Morrison, C., Jantsch, M., Los, M., Schulze-Osthoff, K. and Wagner, E.F. 1997. PARP is important for genomic stability but dispensable in apoptosis. *Genes Dev.* 11: 2347-2358.
5. Jeggo, P.A. 1998. DNA repair: PARP—another guardian angel? *Curr. Biol.* 8: R49-R51.

CHROMOSOMAL LOCATION

Genetic locus: PARP1 (human) mapping to 1q42.12; Parp1 (mouse) mapping to 1 H5.

SOURCE

PARP-1 (6D640) is a mouse monoclonal antibody raised against C-terminal purified thymus PARP-1 of calf origin.

PRODUCT

Each vial contains 50 µl ascites containing IgG₁ with < 0.1% sodium azide.

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.

APPLICATIONS

PARP-1 (6D640) 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 µg (approximately 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).

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.

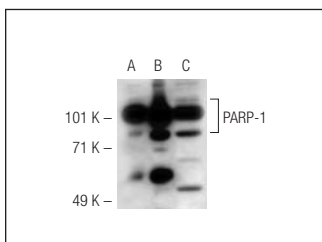
Molecular Weight of PARP-1 N-terminal cleavage product: 24 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or PARP-1 (m): 293T Lysate: sc-122382.

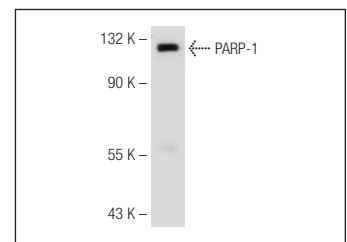
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PARP-1 (6D640): sc-71849. Western blot analysis of PARP-1 expression in non-transfected 293T: sc-117752 (A), mouse PARP-1 transfected 293T: sc-122382 (B) and Jurkat (C) whole cell lysates.



PARP-1 (6D640): sc-71849. Western blot analysis of PARP-1 expression in Jurkat whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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