SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-1 (H-250): sc-7150

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. PARP-2 is part of the base excision repair (BER) pathway, catalyzing the poly (ADP-ribosy)lation of nuclear proteins. PARP-2 is a nuclear, DNA-binding protein which interacts with PARP-1. PARP-2 is present in actively dividing tissues with highest levels in the kidney, skeletal muscle, liver, heart and spleen.

CHROMOSOMAL LOCATION

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

SOURCE

PARP-1 (H-250) is a rabbit polyclonal antibody raised against amino acids 764-1014 mapping at the C-terminus of PARP-1 of human origin.

PRODUCT

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

APPLICATIONS

PARP-1 (H-250) 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)], 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); may cross-react with PARP-2.

PARP-1 (H-250) is also recommended for detection of PARP-1 in additional species, including equine, canine, bovine, porcine and avian.

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

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

Positive Controls: PARP-1 (h): 293T Lysate: sc-114869 or Jurkat whole cell lysate: sc-2204.

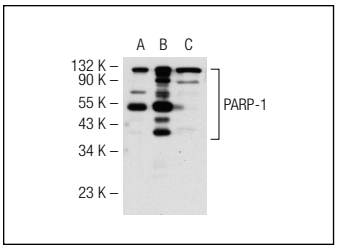
RESEARCH USE

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

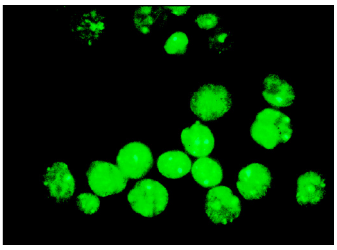
STORAGE

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

DATA



PARP-1 (H-250): sc-7150. Western blot analysis of PARP-1 expression in non-transfected 293T: sc-117752 (**A**), human PARP-1 transfected 293T: sc-114869 (**B**) and Jurkat (**C**) whole cell lysates.



PARP-1 (H-250): sc-7150. Immunofluorescence staining of methanol-fixed Jurkat cells showing nuclear and nucleolar localization.

SELECT PRODUCT CITATIONS

1. Mukhopadhyay, A., et al. 2002. Ectopic expression of protein-tyrosine kinase Bcr-Abl suppresses tumor necrosis factor (TNF)-induced NFκB activation and IκBα phosphorylation. Relationship with downregulation of TNF receptors. J. Biol. Chem. 277: 30622-30628.
2. Yasui, D., et al. 2002. SATB1 targets chromatin remodelling to regulate genes over long distances. Nature 419: 641-645.
3. Blaise, S., et al. 2012. *In vivo* evidence that TRAF4 is required for central nervous system myelin homeostasis. PLoS ONE 7: e30917.
4. Pulvino, M., et al. 2012. Inhibition of proliferation and survival of diffuse large B-cell lymphoma cells by a small-molecule inhibitor of the ubiquitin-conjugating enzyme Ubc13-Uev1A. Blood 120: 1688-1677.
5. Vázquez, R., et al. 2012. Toddaculin, a natural coumarin from *Toddalia asiatica,* induces differentiation and apoptosis in U-937 leukemic cells. Phytomedicine 19: 737-746.
6. Grande, L., et al. 2012. Transcription factors Sp1 and p73 control the expression of the proapoptotic protein NOXA in the response of testicular embryonal carcinoma cells to csplatin. J. Biol. Chem. 287: 26495-26505.
7. Amaral, J.D., et al. 2012. Live-cell imaging of p53 interactions using a novel Venus-based bimolecular fluorescence complementation system. Biochem. Pharmacol. 85: 745-752.
8. Chen, L.C., et al. 2012. Ferrous citrate up-regulates the NOS2 through nuclear translocation of NFκB induced by free radicals generation in mouse cerebral endothelial cells. PLoS ONE 7: e46239.