

PARP-1 (E-8): sc-74469

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-ribosylation) 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 (E-8) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of PARP-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-74469 X, 200 µg/0.1 ml.

APPLICATIONS

PARP-1 (E-8) is recommended for detection of PARP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

PARP-1 (E-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

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

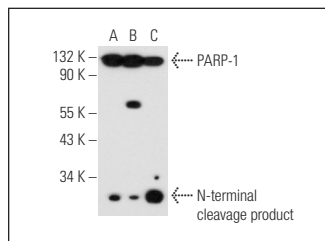
Molecular Weight of PARP-1 N-terminal cleavage product: 24 kDa.

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

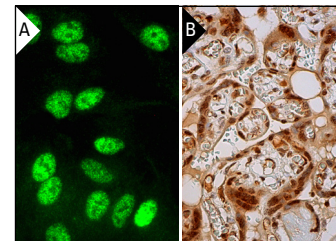
STORAGE

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

DATA



PARP-1 (E-8): sc-74469. Western blot analysis of PARP-1 expression in Jurkat (A), HeLa (B) and K-562 (C) nuclear extracts.



PARP-1 (E-8): sc-74469. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of trophoblastic cells (B).

SELECT PRODUCT CITATIONS

- Wei, L., et al. 2010. Different apoptotic effects of wogonin via induction of H₂O₂ generation and Ca²⁺ overload in malignant hepatoma and normal hepatic cells. *J. Cell. Biochem.* 111: 1629-1641.
- Doege, C.A., et al. 2012. Early-stage epigenetic modification during somatic cell reprogramming by PARP-1 and Tet2. *Nature* 488: 652-655.
- Pelham, C., et al. 2013. Regulation of HFE expression by poly(ADP-ribose) polymerase-1 (PARP-1) through an inverted repeat DNA sequence in the distal promoter. *Biochim. Biophys. Acta* 1829: 1257-1265.
- Jin, H., et al. 2015. IER3 is a crucial mediator of Tap73β-induced apoptosis in cervical cancer and confers etoposide sensitivity. *Sci. Rep.* 5: 8367.
- Jin, H., et al. 2016. FOXL2 is an essential activator of SF-1-induced transcriptional regulation of anti-müllerian hormone in human granulosa cells. *PLoS ONE* 11: e0159112.
- Jin, H., et al. 2017. EGR2 is a gonadotropin-induced survival factor that controls the expression of IER3 in ovarian granulosa cells. *Biochem. Biophys. Res. Commun.* 482: 877-882.
- Hara, N., et al. 2019. Quantitative analysis of the effects of nicotinamide phosphoribosyltransferase induction on the rates of NAD⁺ synthesis and breakdown in mammalian cells using stable isotope-labeling combined with mass spectrometry. *PLoS ONE* 14: e0214000.

RESEARCH USE

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



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.