SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-4 siRNA (h): sc-61299

BACKGROUND

PARP-1 is a nuclear protein that is specifically cleaved by caspase-3 and caspase-6, but not by caspase-1, into a signature apoptotic fragment. PARP-2 and PARP-3 interact with PARP-1. PARP-4, also designated vault poly(ADP-ribose) polymerase (VPARP) and ADP-ribotransferase-like 1 (ADPRTL1), associates with the major vault protein (MVP) and telomerase-associated protein 1 (TEP1) to form vaults, barrel-shaped cytoplasmic ribonucleoprotein particles. PARP-4 localizes mainly to the cytoplasm but is also found in the nucleus. The PARP-4 protein is expressed widely, with highest levels observed in the kidney, and is also detected in skeletal muscle, heart, leukocytes, placenta, lung, liver, spleen, and pancreas. PARP-4 contains a PARP (ADPRT)-like catalytic domain, a C-terminal MVP-interacting domain, a domain with two sequences similar to inter-α-trypsin inhibitor, and an N-terminal BRCA1 C-terminus (BRCT) domain, which may be involved in protein-protein interactions.

REFERENCES

1. Kickhoefer, V.A., et al. 1999. The 193 kDa vault protein, VPARP, is a novel poly(ADP-ribose) polymerase. J. Cell Biol. 146: 917-928.
2. Still, I.H., et al. 2000. Identification of a novel gene (ADPRTL1) encoding a potential poly(ADP-ribosyl)transferase protein. Genomics 62: 533-536.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607519. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Raval-Fernandes, S., et al. 2005. Increased susceptibility of vault poly(ADP-ribose) polymerase-deficient mice to carcinogen-induced tumorigenesis. Cancer Res. 65: 8846-8852.
5. Stewart, P.L., et al. 2005. Sea urchin vault structure, composition, and differential localization during development. BMC Dev. Biol. 5: 3.
6. Zheng, C.L., et al. 2005. Characterization of MVP and VPARP assembly into vault ribonucleoprotein complexes. Biochem. Biophys. Res. Commun. 326: 100-107.

CHROMOSOMAL LOCATION

Genetic locus: PARP4 (human) mapping to 13q12.12.

PRODUCT

PARP-4 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PARP-4 shRNA Plasmid (h): sc-61299-SH and PARP-4 shRNA (h) Lentiviral Particles: sc-61299-V as alternate gene silencing products.

For independent verification of PARP-4 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61299A, sc-61299B and sc-61299C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PARP-4 siRNA (h) is recommended for the inhibition of PARP-4 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

PARP-4 (B-11): sc-515898 is recommended as a control antibody for monitoring of PARP-4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PARP-4 gene expression knockdown using RT-PCR Primer: PARP-4 (h)-PR: sc-61299-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shults, N.V., et al. Major vault protein in cardiac and smooth muscle. Receptors Clin. Investig. 3: e1310.

RESEARCH USE

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