SANTA CRUZ BIOTECHNOLOGY, INC.

PARP-8 siRNA (m): sc-76067

BACKGROUND

Poly(ADP-ribosylation) is a method of DNA damage-dependent posttranslational modification that helps to rescue injured proliferating cells from cell death. The PARP (poly(ADP-ribose) polymerase) proteins comprise a superfamily of enzymes that functionally modify histones and other nuclear proteins, thereby preventing cell death. PARPs use NAD^+ as a substrate to catalytically transfer ADP-ribose residues onto protein acceptors; a process that, when repeated multiple times, leads to the formation of poly(ADPribose) chains on the protein. The presence of these chains alters the function of the target protein and promotes cell survival. PARP proteins are implicated in a variety of diseases, including cancer, neurodegenerative and inflammatory disorders. PARP-8 (poly (ADP-ribose) polymerase family, member 8), also designated pART16, is a 854 amino acid protein containing a single PARP catalytic domain and may become phosphorylated upon DNA damage by ATM or ATR. PARP-8 exists as two alternatively spliced isoforms.

REFERENCES

1. Hans, M.A., Müller, M., Meyer-Ficca, M., Bürkle, A. and Küpper, J.H. 1999. Overexpression of dominant negative PARP interferes with tumor formation of HeLa cells in nude mice: evidence for increased tumor cell apoptosis *in vivo*. Oncogene 18: 7010-7015.
2. Aguiar, R.C., Takeyama, K., He, C., Kreinbrink, K. and Shipp, M.A. 2005. B-aggressive lymphoma family proteins have unique domains that modulate transcription and exhibit poly(ADP-ribose) polymerase activity. J. Biol. Chem. 280: 33756-33765.
3. Chou, H.Y., Chou, H.T. and Lee, S.C. 2006. CDK-dependent activation of poly(ADP-ribose) polymerase member 10 (PARP-10). J. Biol. Chem. 281: 15201-15207.
4. Goenka, S., Cho, S.H. and Boothby, M. 2007. Collaborator of Stat6 (CoaSt6)-associated poly(ADP-ribose) polymerase activity modulates Stat6-dependent gene transcription. J. Biol. Chem. 282: 18732-18739.
5. Elser, M., Borsig, L., Hassa, P.O., Erener, S., Messner, S., Valovka, T., Keller, S., Gassmann, M. and Hottiger, M.O. 2008. Poly(ADP-ribose) polymerase 1 promotes tumor cell survival by coactivating hypoxia-inducible factor-1-dependent gene expression. Mol. Cancer Res. 6: 282-290.

CHROMOSOMAL LOCATION

Genetic locus: Parp8 (mouse) mapping to 13 D2.3.

PRODUCT

PARP-8 siRNA (m) 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-8 shRNA Plasmid (m): sc-76067-SH and PARP-8 shRNA (m) Lentiviral Particles: sc-76067-V as alternate gene silencing products.

For independent verification of PARP-8 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76067A, sc-76067B and sc-76067C.

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-8 siRNA (m) is recommended for the inhibition of PARP-8 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PARP-8 gene expression knockdown using RT-PCR Primer: PARP-8 (m)-PR: sc-76067-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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