

PARP-7 siRNA (m): sc-76065

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(ADP-ribose) 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-7 (poly(ADP-ribose) polymerase 7), also designated RM1, DDF1, PARP-1, pART14 or TIPARP, is a 657 amino acid protein containing a C3H1-type zinc finger, a PARP catalytic domain and a WWE domain.

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 (CoeSt6)-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: Tiparp (mouse) mapping to 3 E1.

PRODUCT

PARP-7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PARP-7 shRNA Plasmid (m): sc-76065-SH and PARP-7 shRNA (m) Lentiviral Particles: sc-76065-Vas alter gene silencing products.

For independent verification of PARP-7 (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-76065A, sc-76065B and sc-76065C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PARP-7 siRNA (m) is recommended for the inhibition of PARP-7 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 μ M in 66 μ l. 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-7 gene expression knockdown using RT-PCR Primer: PARP-7 (m)-PR: sc-76065-PR (20 μ l). 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.