SANTA CRUZ BIOTECHNOLOGY, INC.

Rad18 siRNA (h): sc-72142

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The RING-type zinc finger protein Rad18 is essential in post-replication repair of damaged DNA and contributes to the maintenance of genomic stability. Rad18 maintains chromosomal DNA with the Rad54-dependent DNA repair pathway and recruits ubiquitin-conjugating enzymes in the Rad6 pathway. Rad18 functions in gap-filling of a daughter strand on replication of damaged DNA and is localized in the nucleus.

REFERENCES

1. Tateishi, S., et al. 2000. Dysfunction of human Rad18 results in defective postreplication repair and hypersensitivity to multiple mutagens. Proc. Natl. Acad. Sci. USA 97: 7927-7932.
2. Xin, H., et al. 2000. The human Rad18 gene product interacts with HHR6A and HHR6B. Nucleic Acids Res. 28: 2847-2854.
3. Hoege, C., et al. 2002. Rad6-dependent DNA repair is linked to modification of PCNA by ubiquitin and SUMO. Nature 419: 135-141.
4. Yamashita, Y.M., et al. 2002. Rad18 and Rad54 cooperatively contribute to maintenance of genomic stability in vertebrate cells. EMBO J. 21: 5558-5566.
5. Tateishi, S., et al. 2003. Enhanced genomic instability and defective postreplication repair in Rad18 knockout mouse embryonic stem cells. Mol. Cell. Biol. 23: 474-481.
6. Watanabe, K., et al. 2004. Rad18 guides poleta to replication stalling sites through physical interaction and PCNA monoubiquitination. EMBO J. 23: 3886-3896.
7. Nikiforov, A., et al. 2004. DNA damage-induced accumulation of Rad18 protein at stalled replication forks in mammalian cells involves upstream protein phosphorylation. Biochem. Biophys. Res. Commun. 323: 831-837.
8. SWISS-PROT/TrEMBL (Q9NS91). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: RAD18 (human) mapping to 3p25.3.

PRODUCT

Rad18 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 Rad18 shRNA Plasmid (h): sc-72142-SH and Rad18 shRNA (h) Lentiviral Particles: sc-72142-V as alternate gene silencing products.

For independent verification of Rad18 (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-72142A, sc-72142B and sc-72142C.

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

Rad18 siRNA (h) is recommended for the inhibition of Rad18 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

Rad18 (79B1048): sc-52949 is recommended as a control antibody for monitoring of Rad18 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rad18 gene expression knockdown using RT-PCR Primer: Rad18 (h)-PR: sc-72142-PR (20 µl, 534 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Daitoku, H., et al. 2016. Non-transcriptional function of FOXO1/DAF-16 contributes to translesion DNA synthesis. Mol. Cell. Biol. 36: 2755-2766.

RESEARCH USE

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