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RINT-1 siRNA (m): sc-152970

BACKGROUND

Rad50, a structural maintenance of chromosomes (SMC) protein family member, participates in a variety of cellular processes, including DNA double-strand break repair, cell cycle checkpoint activation, telomere maintenance, and meiosis. In addition to its ability to form a complex with the DNA double-strand break repair proteins Mre11 and NBS1, Rad50 may interact with other cellular proteins to execute its full range of biological activities. A novel protein named RINT-1 was identified using the C-terminal region of human Rad50 as the bait in a yeast two-hybrid screen. Human RINT-1 shares sequence homology with a novel protein identified in *Drosophila melanogaster*. The conserved central and C-terminal regions of RINT-1 are required for its interaction with Rad50. While Rad50 and RINT-1 are both expressed throughout the cell cycle, RINT-1 specifically binds to Rad50 only during late S and G₂/M phases, suggesting that RINT-1 may be involved in cell cycle regulation. RINT-1 may also play a role in the regulation of cell cycle control after DNA damage.

REFERENCES

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2. Deng, C.X. and Brodie, S.G. 2000. Roles of BRCA1 and its interacting proteins. *Bioessays* 22: 728-737.
3. Trujillo, K.M. and Sung, P. 2001. DNA Structure-specific nuclease activities in the *Saccharomyces cerevisiae* Rad50*Mre11 complex. *J. Biol. Chem.* 276: 35458-35464.
4. Xiao, J., Liu, C.C., Chen, P.L. and Lee, W.H. 2001. RINT-1, a novel Rad50-interacting protein, participates in radiation-induced G₂/M checkpoint control. *J. Biol. Chem.* 276: 6105-6111.
5. Desai-Mehta, A., Cerosaletti, K.M. and Concannon, P. 2001. Distinct functional domains of nibrin mediate Mre11 binding, focus formation, and nuclear localization. *Mol. Cell. Biol.* 21: 2184-2191.

CHROMOSOMAL LOCATION

Genetic locus: Rint1 (mouse) mapping to 5 A3.

PRODUCT

RINT-1 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 RINT-1 shRNA Plasmid (m): sc-152970-SH and RINT-1 shRNA (m) Lentiviral Particles: sc-152970-V as alternate gene silencing products.

For independent verification of RINT-1 (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-152970A, sc-152970B and sc-152970C.

RESEARCH USE

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

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

RINT-1 siRNA (m) is recommended for the inhibition of RINT-1 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 RINT-1 gene expression knockdown using RT-PCR Primer: RINT-1 (m)-PR: sc-152970-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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