SANTA CRUZ BIOTECHNOLOGY, INC.

RAD51AP1 siRNA (h): sc-95792

BACKGROUND

Homologous recombination is essential for tumor suppression and chromosome damage repair. RAD51AP1 (Rad51 associated protein 1), also known as PIR51, is a 352 amino acid protein known to activate homologous recombination and double-strand break repair in the DNA damage response pathway. RAD51AP1 binds both RNA and DNA, has the ability to aggregate DNA and undergoes post-translational phosphorylation upon DNA damage. While highly expressed in thymus and testis, lower levels of RAD51AP1 have been found in small intestine and colon. RAD51AP1 may be involved in cell proliferation and while multiple splice variants of RAD51AP1 are known to exist, only three isoforms have been characterized. RAD51AP1 isoform 2 colocalizes with Rad51 to multiple nuclear foci.

REFERENCES

1. Kovalenko, O.V., et al. 1997. A novel nucleic acid-binding protein that interacts with human Rad51 recombinase. Nucleic Acids Res. 25: 4946-4953.
2. Mizuta, R., et al. 1997. RAB22 and RAB163/mouse BRCA2: proteins that specifically interact with the RAD51 protein. Proc. Natl. Acad. Sci. USA 94: 6927-6932.
3. Modesti, M., et al. 2007. RAD51AP1 is a structure-specific DNA binding protein that stimulates joint molecule formation during RAD51-mediated homologous recombination. Mol. Cell 28: 468-481.
4. Wiese, C., et al. 2007. Promotion of homologous recombination and genomic stability by RAD51AP1 via RAD51 recombinase enhancement. Mol. Cell 28: 482-490.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 603070. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Obama, K., et al. 2008. Enhanced expression of RAD51 associating protein-1 is involved in the growth of intrahepatic cholangiocarcinoma cells. Clin. Cancer Res. 14: 1333-1339.

CHROMOSOMAL LOCATION

Genetic locus: RAD51AP1 (human) mapping to 12p13.32.

PRODUCT

RAD51AP1 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 RAD51AP1 shRNA Plasmid (h): sc-95792-SH and RAD51AP1 shRNA (h) Lentiviral Particles: sc-95792-V as alternate gene silencing products.

For independent verification of RAD51AP1 (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-95792A, sc-95792B and sc-95792C.

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

RAD51AP1 siRNA (h) is recommended for the inhibition of RAD51AP1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RAD51AP1 gene expression knockdown using RT-PCR Primer: RAD51AP1 (h)-PR: sc-95792-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.