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SSBP2 siRNA (m): sc-153840

BACKGROUND

The single-stranded-DNA-binding proteins (SSBs) are essential for DNA function in prokaryotic and eukaryotic cells, as well as in mitochondria, bacteria and viruses. SSBP2 (single-stranded DNA binding protein 2), also known as SSDP2, is a 361 amino acid protein that localizes to the nucleus and contains one LisH domain. Expressed ubiquitously, SSBP2 is thought to induce growth arrest in cancer cells and may, therefore, function as a potent tumor suppressor. The gene encoding SSBP2 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Defects in chromosome 5-associated genes are related to the pathogenesis of Cockayne syndrome, familial adenomatous polyposis and Treacher Collins syndrome.

REFERENCES

1. Bayarsaihan, D., et al. 1998. Cloning and characterization of a novel sequence-specific single-stranded-DNA-binding protein. *Biochem. J.* 331: 447-452.
2. Castro, P., et al. 2002. A novel, evolutionarily conserved gene family with putative sequence-specific single-stranded DNA-binding activity. *Genomics* 80: 78-85.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607389. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Liang, H., et al. 2005. SSBP2, a candidate tumor suppressor gene, induces growth arrest and differentiation of myeloid leukemia cells. *Oncogene* 24: 2625-2634.
5. Xu, Z., et al. 2007. Single-stranded DNA-binding proteins regulate the abundance of LIM domain and LIM domain-binding proteins. *Genes Dev.* 21: 942-955.
6. Liu, J.W., et al. 2008. ssDNA-binding protein 2 is frequently hypermethylated and suppresses cell growth in human prostate cancer. *Clin. Cancer Res.* 14: 3754-3760.

CHROMOSOMAL LOCATION

Genetic locus: *Ssbp2* (mouse) mapping to 13 C3.

PRODUCT

SSBP2 siRNA (m) is a pool of 2 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 SSBP2 shRNA Plasmid (m): sc-153840-SH and SSBP2 shRNA (m) Lentiviral Particles: sc-153840-V as alternate gene silencing products.

For independent verification of SSBP2 (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-153840A and sc-153840B.

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

SSBP2 siRNA (m) is recommended for the inhibition of SSBP2 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.

GENE EXPRESSION MONITORING

SSBP2 (D-3): sc-166687 is recommended as a control antibody for monitoring of SSBP2 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SSBP2 gene expression knockdown using RT-PCR Primer: SSBP2 (m)-PR: sc-153840-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.