SANTA CRUZ BIOTECHNOLOGY, INC.

PRP4 kinase siRNA (h): sc-76257

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. PRP4 kinase, also known as PRPF4B, PRP4H or PRP4K, is a 1,007 amino acid nuclear protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Expressed ubiquitously, PRP4 kinase functions to catalyze the ATP-dependent phosphorylation of target proteins and is thought to play a role in pre-mRNA splicing, possibly participating in the spliceosome C complex. Human PRP4 kinase shares 98% sequence identity with its mouse counterpart, suggesting a conserved role between species.

REFERENCES

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3. Kojima, T., et al. 2001. Cloning of human PRP4 reveals interaction with Clk1. J. Biol. Chem. 276: 32247-32256.
4. Dellaire, G., et al. 2002. Mammalian PRP4 kinase copurifies and interacts with components of both the U5 snRNP and the N-CoR deacetylase complexes. Mol. Cell. Biol. 22: 5141-5156.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602338. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Bennett, E.M., et al. 2004. Human immunodeficiency virus type 2 Gag interacts specifically with PRP4, a serine-threonine kinase, and inhibits phosphorylation of splicing factor SF2. J. Virol. 78: 11303-11312.
7. Bottner, C.A., et al. 2005. Multiple genetic and biochemical interactions of Brr2, PRP8, Prp31, Prp1 and PRP4 kinase suggest a function in the control of the activation of spliceosomes in *Schizosaccharomyces pombe.* Curr. Genet. 48: 151-161.

CHROMOSOMAL LOCATION

Genetic locus: PRPF4B (human) mapping to 6p25.2.

PRODUCT

PRP4 kinase 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 PRP4 kinase shRNA Plasmid (h): sc-76257-SH and PRP4 kinase shRNA (h) Lentiviral Particles: sc-76257-V as alternate gene silencing products.

For independent verification of PRP4 kinase (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-76257A, sc-76257B and sc-76257C.

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

PRP4 kinase siRNA (h) is recommended for the inhibition of PRP4 kinase 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 PRP4 kinase gene expression knockdown using RT-PCR Primer: PRP4 kinase (h)-PR: sc-76257-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shehzad, A., et al. 2013. Curcumin induces radiosensitivity of *in vitro* and *in vivo* cancer models by modulating pre-mRNA processing factor 4 (PRP4). Chem. Biol. Interact. 206: 394-402.
2. Shehzad, A., et al. 2013. Curcumin induces apoptosis in human colorectal carcinoma (HCT-15) cells by regulating expression of PRP4 and p53. Mol. Cells 35: 526-532.
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4. Ahmed, M.B., et al. 2020. Decursin negatively regulates LPS-induced upregulation of the TLR4 and JNK signaling stimulated by the expression of PRP4 *in vitro.* Anim. Cells Syst. 24: 44-52.
5. Islam, S.U., et al. 2022. PRP4 induces epithelial-mesenchymal transition and drug resistance in colon cancer cells via activation of p53. Int. J. Mol. Sci. 23: 3092.

RESEARCH USE

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