

RRP9 siRNA (h): sc-78299

BACKGROUND

RRP9 (ribosomal RNA processing 9), also known as small subunit (SSU) processing component, RNU3IP2 or U355K, is a 475 amino acid nucleolar protein that belongs to the WD repeat RRP9 family. One of several components of a small nucleolar ribonucleoprotein particle (snoRNP), RRP9 is thought to be involved in the modification and processing of precursor rRNA (ribosomal RNA). Specifically, RRP9 interacts with the U3 snoRNA complex and binds a fragment of the complex that contains a box B/C motif and is known as 3UBC. The association of RRP9 with 3UBC is dependent upon two factors: binding of an snRNP protein known as NHPX to the B/C motif and a conserved tertiary structure that flanks the B/C motif. If the NHPK protein is bound and the conserved structure is present, RRP9 can interact with 3UBC and participate in pre-rRNA processing. RRP9 contains seven WD repeats that are necessary for both its nucleolar localization and its ability to bind U3 snoRNA.

REFERENCES

1. Pluk, H., et al. 1998. cDNA cloning and characterization of the human U3 small nucleolar ribonucleoprotein complex-associated 55-kilodalton protein. *Mol. Cell. Biol.* 18: 488-498.
2. Venema, J., et al. 2000. Yeast Rrp9p is an evolutionarily conserved U3 snoRNP protein essential for early pre-rRNA processing cleavages and requires box C for its association. *RNA* 6: 1660-1671.
3. Lukowiak, A.A., et al. 2000. Interaction of the U3-55k protein with U3 snoRNA is mediated by the box B/C motif of U3 and the WD repeats of U3-55k. *Nucleic Acids Res.* 28: 3462-3471.
4. Granneman, S., et al. 2002. The hU3-55K protein requires 15.5K binding to the box B/C motif as well as flanking RNA elements for its association with the U3 small nucleolar RNA *in vitro*. *J. Biol. Chem.* 277: 48490-48500.
5. Grandi, P., et al. 2002. 90S pre-ribosomes include the 35S pre-rRNA, the U3 snoRNP, and 40S subunit processing factors but predominantly lack 60S synthesis factors. *Mol. Cell* 10: 105-115.
6. Marmier-Gourrier, N., et al. 2003. A structural, phylogenetic, and functional study of 15.5-kD/Snu13 protein binding on U3 small nucleolar RNA. *RNA* 9: 821-838.

CHROMOSOMAL LOCATION

Genetic locus: RRP9 (human) mapping to 3p21.2.

PRODUCT

RRP9 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RRP9 shRNA Plasmid (h): sc-78299-SH and RRP9 shRNA (h) Lentiviral Particles: sc-78299-V as alternate gene silencing products.

For independent verification of RRP9 (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-78299A, sc-78299B and sc-78299C.

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

RRP9 siRNA (h) is recommended for the inhibition of RRP9 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 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

RRP9 (C-7): sc-515661 is recommended as a control antibody for monitoring of RRP9 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 RRP9 gene expression knockdown using RT-PCR Primer: RRP9 (h)-PR: sc-78299-PR (20 μ l). 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.

PROTOCOLS

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