SANTA CRUZ BIOTECHNOLOGY, INC.

RRP12 siRNA (h): sc-90733

BACKGROUND

Ribosomes are the organelles that catalyze protein synthesis. Each ribosomes consists of a small 40S subunit and a large 60S subunit. Together these subunits are composed of 4 RNA species and approximately 80 structurally distinct proteins. RRP12 (ribosomal RNA processing 12) is a 1,297 amino acid single-pass membrane protein that participates in ribosomal assembly. Expressed in testis and ovary, RRP12 belongs to the RRP12 family and localizes to the nucleus. RRP12 may be involved in coupling the control of ribosome production to the regulation of other cellular processes during cell cycle progression. In conjunction with Dim2, RRP12 is thought to be involved in the nucleocytoplasmic translocation of pre-ribosomes during ribosome assembly. RRP12 exists two alternatively spliced isoforms and is encoded by a gene located on human chromosome 10q24.1.

REFERENCES

1. Kenmochi, N., et al. 1998. A map of 75 human ribosomal protein genes. Genome Res. 8: 509-523.
2. Yoshihama, M., et al. 2002. The human ribosomal protein genes: sequencing and comparative analysis of 73 genes. Genome Res. 12: 379-390.
3. Oeffinger, M., et al. 2004. A pre-ribosome-associated HEAT-repeat protein is required for export of both ribosomal subunits. Genes Dev. 18: 196-209.
4. Porter, S.E., et al. 2005. Separation of the *Saccharomyces cerevisiae* Paf1 complex from RNA polymerase II results in changes in its subnuclear localization. Eukaryotic Cell 4: 209-220.
5. Vanrobays, E., et al. 2008. TOR regulates the subcellular distribution of DIM2, a KH domain protein required for cotranscriptional ribosome assembly and pre-40S ribosome export. RNA 14: 2061-2073.
6. Dosil, M. 2011. Ribosome synthesis-unrelated functions of the preribosomal factor RRP12 in cell cycle progression and the DNA damage response. Mol. Cell. Biol. 31: 2422-2438.
7. Wyler, E., et al. 2011. Tandem affinity purification combined with inducible shRNA expression as a tool to study the maturation of macromolecular assemblies. RNA 17: 189-200.

CHROMOSOMAL LOCATION

Genetic locus: RRP12 (human) mapping to 10q24.1.

PRODUCT

RRP12 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 RRP12 shRNA Plasmid (h): sc-90733-SH and RRP12 shRNA (h) Lentiviral Particles: sc-90733-V as alternate gene silencing products.

For independent verification of RRP12 (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-90733A, sc-90733B and sc-90733C.

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

RRP12 siRNA (h) is recommended for the inhibition of RRP12 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.

GENE EXPRESSION MONITORING

RRP12 (A-3): sc-398593 is recommended as a control antibody for monitoring of RRP12 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 RRP12 gene expression knockdown using RT-PCR Primer: RRP12 (h)-PR: sc-90733-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.

PROTOCOLS

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