

Rpp20 siRNA (h): sc-89498

BACKGROUND

Ribonuclease P (RNase P) and Ribonuclease MRP (RNase MRP) are small nuclear ribonucleoproteins (snRNPs) that act on RNA substrates *in vitro*. RNase P and RNase MRP, which accumulate in the nucleolus, have a similar RNA component and also have several protein subunits in common. RNase P, which consists of a complex of an RNA species, POP1, POP5 and at least seven Rpps, remove the 5' leader sequences from precursor tRNA molecules. Rpp20 (ribonuclease P protein subunit p20), also known as POP7 (processing of precursor 7, ribonuclease P/MRP subunit) or RPP2, is a 140 amino acid nuclear protein that belongs to the histone-like Alba family and functions as a component of nuclear RNase P and RNase MRP ribonucleoproteins. The gene encoding Rpp20 maps to human chromosome 7q22.1 and mouse chromosome 5 G2.

REFERENCES

- Engelke, D.R., Pagán-Ramos, E. and Tranguch, A.J. 1995. Structure-function analysis in nuclear RNase P RNA. *Mol. Biol. Rep.* 22: 157-160.
- Stolc, V., Katz, A. and Altman, S. 1998. Rpp2, an essential protein subunit of nuclear RNase P, is required for processing of precursor tRNAs and 35S precursor rRNA in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. USA* 95: 6716-6721.
- Jarrous, N., Eder, P.S., Guerrier-Takada, C., Hoog, C. and Altman, S. 1998. Autoantigenic properties of some protein subunits of catalytically active complexes of human ribonuclease P. *RNA* 4: 407-417.
- Jiang, T. and Altman, S. 2001. Protein-protein interactions with subunits of human nuclear RNase P. *Proc. Natl. Acad. Sci. USA* 98: 920-925.
- Hua, Y. and Zhou, J. 2004. Rpp20 interacts with SMN and is re-distributed into SMN granules in response to stress. *Biochem. Biophys. Res. Commun.* 314: 268-276.
- Welting, T.J., van Venrooij, W.J. and Puijn, G.J. 2004. Mutual interactions between subunits of the human RNase MRP ribonucleoprotein complex. *Nucleic Acids Res.* 32: 2138-2146.

CHROMOSOMAL LOCATION

Genetic locus: POP7 (human) mapping to 7q22.1.

PRODUCT

Rpp20 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 Rpp20 shRNA Plasmid (h): sc-89498-SH and Rpp20 shRNA (h) Lentiviral Particles: sc-89498-V as alternate gene silencing products.

For independent verification of Rpp20 (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-89498A, sc-89498B and sc-89498C.

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

Rpp20 siRNA (h) is recommended for the inhibition of Rpp20 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

Rpp20 (D-6): sc-514903 is recommended as a control antibody for monitoring of Rpp20 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 Rpp20 gene expression knockdown using RT-PCR Primer: Rpp20 (h)-PR: sc-89498-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.