SANTA CRUZ BIOTECHNOLOGY, INC.

PRPF31 siRNA (m): sc-62893

BACKGROUND

PRPF31 (PRP31 pre-mRNA processing factor 31 homolog), also known as RP11, PRP31 or NY-BR-99, is a ubiquitously expressed protein that localizes to the nucleus and is found in Cajal bodies and speckles. PRPF31 is involved in pre-mRNA splicing and functions as a component of the U4/U6.U5 tri-snRNP (small nuclear ribonucleoprotein) complex. More specifically, PRPF31 is believed to mediate the tethering of the tri-snRNP to the spliceosome (a large ribonucleoprotien responsible for catalyzing the splicing of pre-mRNA), thereby assisting in the assembly of the mature spliceosome. Mutations in the gene encoding PRPF31 result in autosomal dominant retinitis pigmentosa type 11 (RP11), which leads to photoreceptor cell degeneration. RP11 patients initially exhibit a loss of their midperipheral visual field as well as night vision blindness. The disease eventually progresses to the loss of far peripheral visual field and finally the loss of central vision. This suggests that PRPF31 is a key player in the pre-mRNA splicing of photoreceptor-specific genes.

REFERENCES

1. Deery, E.C., et al. 2002. Disease mechanism for retinitis pigmentosa (RP11) caused by mutations in the splicing factor gene PRPF31. Hum. Mol. Genet. 11: 3209-3219.
2. Schaffert, N., et al. 2004. RNAi knockdown of hPrp31 leads to an accumulation of U4/U6 di-snRNPs in Cajal bodies. EMBO J. 23: 3000-3009.
3. Yuan, L., et al. 2005. Mutations in PRPF31 inhibit pre-mRNA splicing of rhodopsin gene and cause apoptosis of retinal cells. J. Neurosci. 25: 748-757.
4. Gandra, M., et al. 2005. Gene symbol: PRPF31. Disease: retinitis pigmentosa—autosomal dominant. Hum. Genet. 118: 548-548.
5. Wilkie, S.E., et al. 2006. A study of the nuclear trafficking of the splicing factor protein PRPF31 linked to autosomal dominant retinitis pigmentosa (ADRP). Biochim. Biophys. Acta 1762: 304-311.
6. Rivolta, C., et al. 2006. Variation in retinitis pigmentosa-11 (PRPF31 or RP11) gene expression between symptomatic and asymptomatic patients with dominant RP11 mutations. Hum. Mutat. 27: 644-653.
7. Abu-Safieh, L., et al. 2006. A large deletion in the ADRP gene PRPF31: evidence that haploinsufficiency is the cause of disease. Mol. Vis. 12: 384-388.

CHROMOSOMAL LOCATION

Genetic locus: Prpf31 (mouse) mapping to 7 A1.

PRODUCT

PRPF31 siRNA (m) 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 PRPF31 shRNA Plasmid (m): sc-62893-SH and PRPF31 shRNA (m) Lentiviral Particles: sc-62893-V as alternate gene silencing products.

For independent verification of PRPF31 (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-62893A, sc-62893B and sc-62893C.

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

PRPF31 siRNA (m) is recommended for the inhibition of PRPF31 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 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

PRPF31 (A-6): sc-166792 is recommended as a control antibody for monitoring of PRPF31 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 PRPF31 gene expression knockdown using RT-PCR Primer: PRPF31 (m)-PR: sc-62893-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.