



hnRNP I siRNA (h): sc-38280

BACKGROUND

Heterogeneous nuclear ribonucleoproteins (hnRNPs) constitute a set of polypeptides that contribute to mRNA transcription and pre-mRNA processing as well as mature mRNA transport to the cytoplasm and translation. They also bind heterogeneous nuclear RNA (hnRNA), which are the transcripts produced by RNA polymerase II. There are approximately 20 known hnRNP proteins, and their complexes are the major constituents of the spliceosome. The majority of hnRNP proteins components are localized to the nucleus; however some shuttle between the nucleus and the cytoplasm. hnRNP I, also designated polypyrimidine tract-binding protein (PTB), and its homolog hnRNP L bind to the 3' end of introns to modulate alternative splicing mechanisms of pre-mRNAs in normal cells and the translation of several viruses, including hepatitis C virus (HCV). The human hnRNP I gene maps to chromosome 19p13.3 and encodes a protein that is localized in the nucleoplasm. hnRNP L, like hnRNP I, is also localized in the nucleoplasm.

REFERENCES

1. Badolato, J., et al. 1995. Identification and characterisation of a novel human RNA-binding protein. *Gene* 166: 323-337.
2. Siomi, H., et al. 1995. A nuclear localization domain in the hnRNP A1 protein. *J. Cell Biol.* 129: 551-560.

CHROMOSOMAL LOCATION

Genetic locus: PTBP1 (human) mapping to 19p13.3.

PRODUCT

hnRNP I 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 hnRNP I shRNA Plasmid (h): sc-38280-SH and hnRNP I shRNA (h) Lentiviral Particles: sc-38280-V as alternate gene silencing products.

For independent verification of hnRNP I (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-38280A, sc-38280B and sc-38280C.

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

hnRNP I siRNA (h) is recommended for the inhibition of hnRNP I 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

hnRNP I (SH54): sc-56701 is recommended as a control antibody for monitoring of hnRNP I 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 hnRNP I gene expression knockdown using RT-PCR Primer: hnRNP I (h)-PR: sc-38280-PR (20 μ l, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, A., et al. 2013. The human long non-coding RNA-RoR is a p53 repressor in response to DNA damage. *Cell Res.* 23: 340-350.
2. Huang, J., et al. 2016. Linc-RoR promotes c-Myc expression through hnRNP I and AUF1. *Nucleic Acids Res.* 44: 3059-3069.
3. Gao, W., et al. 2016. La autoantigen induces ribosome binding protein 1 (RRBP1) expression through internal ribosome entry site (IRES)-mediated translation during cellular stress condition. *Int. J. Mol. Sci.* 17: 1174.
4. Sayed, M.E., et al. 2019. NOVA1 directs PTBP1 to hTERT pre-mRNA and promotes telomerase activity in cancer cells. *Oncogene* 38: 2937-2952.
5. Chirackal Manavalan, A.P., et al. 2019. CDK12 controls G₁/S progression by regulating RNAPII processivity at core DNA replication genes. *EMBO Rep.* 20: e47592.
6. Kim, J.J., et al. 2023. Dynamics of TERT regulation via alternative splicing in stem cells and cancer cells. *PLoS ONE* 18: e0289327.

RESEARCH USE

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