

hnRNP U siRNA (h): sc-38298

BACKGROUND

RNA polymerase II transcripts are complexed with hnRNP (heterogeneous nuclear ribonucleoprotein) proteins, which are involved in several aspects of hnRNA maturation and transport. The hnRNP particle U (also designated SP120 and SAF-A for scaffold attachment factor) is an abundant nucleoplasmic phosphoprotein and the largest of the major hnRNP proteins. hnRNP U is specifically involved in pre-mRNA processing and is directly bound to both RNA and DNA. Specifically, hnRNP U has a high affinity to the SAR (scaffold attachment region) of DNA. hnRNP U also functions as an RNA polymerase elongation inhibitor by inhibiting TFIIF-mediated phosphorylation of the carboxy-terminal domain of Pol II. Identical to GRIP120, hnRNP U also associates with glucocorticoid receptors to inhibit glucocorticoid induction.

REFERENCES

1. Kiledjian, M., et al. 1992. Primary structure and binding activity of the hnRNP U protein: binding RNA through RGG box. *EMBO J.* 11: 2655-2664.
2. Fackelmayer, F.O., et al. 1994. hnRNP-U/SAF-A is encoded by two differentially polyadenylated mRNAs in human cells. *Biochim. Biophys. Acta* 1217: 232-234.
3. Gohring, F., et al. 1997. The scaffold/matrix attachment region binding protein hnRNP-U (SAF-A) is directly bound to chromosomal DNA *in vivo*; a chemical cross linking study. *Biochemistry* 36: 8276-8283.
4. Eggert, M., et al. 1997. The glucocorticoid receptor is associated with the RNA-binding nuclear matrix protein hnRNP U. *J. Biol. Chem.* 272: 28471-28478.

CHROMOSOMAL LOCATION

Genetic locus: HNRNPU (human) mapping to 1q44.

PRODUCT

hnRNP U 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 U shRNA Plasmid (h): sc-38298-SH and hnRNP U shRNA (h) Lentiviral Particles: sc-38298-V as alternate gene silencing products.

For independent verification of hnRNP U (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-38298A, sc-38298B and sc-38298C.

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 U siRNA (h) is recommended for the inhibition of hnRNP U 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 U (3G6): sc-32315 is recommended as a control antibody for monitoring of hnRNP U 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 U gene expression knockdown using RT-PCR Primer: hnRNP U (h)-PR: sc-38298-PR (20 μ l, 560 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nishikawa, T., et al. 2019. HnRNP1 interacts with G-quadruplex in the TRA2B promoter and stimulates its transcription in human colon cancer cells. *Sci. Rep.* 9: 10276.

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.