SANTA CRUZ BIOTECHNOLOGY, INC.

hnRNP A1 siRNA (h2): sc-270345

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. The A/B subfamily of hnRNPs include A1, A2/B1, A3 and A0, and in *Xenopus*, hnRNP A1, A2 and A3 are ubiquitously expressed throughout development as well as in adult tissues. hnRNP A1 and A2/B1 regulate the processing of pre-mRNA by directly antagonizing the association of various splicing factors and by influencing the splice site selection on pre-mRNA. The hnRNP A0 gene is distinct from the other A/B family members, and it encodes a low-abundance protein, which is implicated in mRNA stability.

REFERENCES

1. Good, P.J., et al. 1993. Three new members of the RNP protein family in *Xenopus*. Nucleic Acids Res. 21: 999-1006.
2. Myer, V.E., et al. 1995. Isolation and characterization of a novel, low abundance hnRNP protein: A0. RNA 1: 171-182.
3. Badolato, J., et al. 1995. Identification and characterisation of a novel human RNA-binding protein. Gene 166: 323-337.
4. Siomi, H., et al. 1995. A nuclear localization domain in the hnRNP A1 protein. J. Cell Biol. 129: 551-560.

CHROMOSOMAL LOCATION

Genetic locus: HNRNPA1 (human) mapping to 12q13.13.

PRODUCT

hnRNP A1 siRNA (h2) is a target-specific 19-25 nt siRNA 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 hnRNP A1 shRNA Plasmid (h2): sc-270345-SH and hnRNP A1 shRNA (h2) Lentiviral Particles: sc-270345-V as alternate gene silencing products.

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

hnRNP A1 siRNA (h2) is recommended for the inhibition of hnRNP A1 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

hnRNP A1 (4B10): sc-32301 is recommended as a control antibody for monitoring of hnRNP A1 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 hnRNP A1 gene expression knockdown using RT-PCR Primer: hnRNP A1 (h2)-PR: sc-270345-PR (20 µl, 533 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jiang, P., et al. 2017. Fyn/heterogeneous nuclear ribonucleoprotein E1 signaling regulates pancreatic cancer metastasis by affecting the alternative splicing of Integrin β1. Int. J. Oncol. 51: 169-183.
2. Shinohara, H., et al. 2019. Potent antiproliferative effect of fatty-acid derivative AIC-47 on leukemic mice harboring Bcr-Abl mutation. Cancer Sci. 110: 751-760.
3. Charpentier, M., et al. 2022. hnRNP-A1 binds to the IRES of MELOE-1 antigen to promote its translation in stressed melanoma cells. Mol. Oncol. 16: 594-606.
4. Liu, L., et al. 2024. Inhibition of heterogeneous nuclear ribonucleoproteins A1 and oxidative stress reduces glycolysis via pyruvate kinase M2 in chronic thromboembolic pulmonary hypertension. J. Transl. Int. Med. 12: 437-451.

RESEARCH USE

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