SANTA CRUZ BIOTECHNOLOGY, INC.

hnRNP F siRNA (m): sc-38273

BACKGROUND

Heterogeneous nuclear ribonucleoproteins (hnRNPs) constitute a set of polypeptides that contribute to pre-mRNA processing and transport, and also bind heterogeneous nuclear RNA (hnRNA), which are the transcripts produced by RNA polymerase II. hnRNP complexes are the major constituents of the spliceosome and in particular, the hnRNP A1 protein is one of the major pre-mRNA/mRNA binding proteins and also one of the most abundant proteins in the nucleus. 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 majority of hnRNP proteins components are localized to the nucleus; however some shuttle between the nucleus and the cytoplasm. Most hnRNP proteins, including hnRNP C1 and C2, contain one or more RNA binding domains and are implicated in the proces sing of pre-mRNA. hnRNPs F and H are largely related factors that preferentially associate with poly(rG) regions on RNA. Isoforms of these proteins are often generated by alternative processing of the pre-mRNA and by post-translational modifications such as phosphorylation on serines and threonines and methylation of arginines.

REFERENCES

1. Swanson, M.S., et al. 1987. Primary structure of human nuclear ribonucleoprotein particle C proteins. Mol. Cell. Biol. 7: 1731-1739.
2. Gorlach, M., et al. 1994. The determinants of RNA-binding specificity of the heterogeneous nuclear ribonucleoprotein C proteins. J. Biol. Chem. 269: 23074-23078.
3. Honore, B., et al. 1995. Heterogeneous nuclear ribonucleoproteins H, H', and F are members of a ubiquitously expressed subfamily of related but distinct proteins encoded by genes mapping to different chromosomes. J. Biol. Chem. 270: 28780-28789.
4. Badolato, J., et al. 1995. Identification and characterization of a novel human RNA-binding protein. Gene 166: 323-327.
5. Siomi, H., et al. 1995. A nuclear localization domain in the hnRNP A1 protein. J. Cell Biol. 129: 551-560.
6. Hanamura, A., et al. 1998. Regulated tissue-specific expression of antagonistic pre-mRNA splicing factors. RNA 4: 430-444.

CHROMOSOMAL LOCATION

Genetic locus: Hnrnpf (mouse) mapping to 6 F1.

PRODUCT

hnRNP F 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 hnRNP F shRNA Plasmid (m): sc-38273-SH and hnRNP F shRNA (m) Lentiviral Particles: sc-38273-V as alternate gene silencing products.

For independent verification of hnRNP F (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-38273A, sc-38273B and sc-38273C.

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 F siRNA (m) is recommended for the inhibition of hnRNP F 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

hnRNP F/H (1G11): sc-32310 is recommended as a control antibody for monitoring of hnRNP F 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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 F gene expression knockdown using RT-PCR Primer: hnRNP F (m)-PR: sc-38273-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Boskovic, A., et al. 2020. Control of noncoding RNA production and histone levels by a 5' tRNA fragment. Genes Dev. 34: 118-131.

RESEARCH USE

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