

# hnRNP H siRNA (h): sc-35579

## 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 processing 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 posttranslational 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. Badolato, J., et al. 1995. Identification and characterization of a novel human RNA-binding protein. *Gene* 166: 323-327.

## CHROMOSOMAL LOCATION

Genetic locus: HNRNPH1 (human) mapping to 5q35.3.

## PRODUCT

hnRNP H 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see hnRNP H shRNA Plasmid (h): sc-35579-SH and hnRNP H shRNA (h) Lentiviral Particles: sc-35579-V as alternate gene silencing products.

For independent verification of hnRNP H (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-35579A, sc-35579B and sc-35579C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

hnRNP H siRNA (h) is recommended for the inhibition of hnRNP H 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  $\mu$ M in 66  $\mu$ 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 F/H (1G11): sc-32310 is recommended as a control antibody for monitoring of hnRNP H 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor hnRNP H gene expression knockdown using RT-PCR Primer: hnRNP H (h)-PR: sc-35579-PR (20  $\mu$ l, 441 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Dalziel, M., et al. 2007. Two G-rich regulatory elements located adjacent to and 440 nucleotides downstream of the core poly(A) site of the intronless melanocortin receptor 1 gene are critical for efficient 3' end processing. *Mol. Cell. Biol.* 27: 1568-1580.
2. Camats, M., et al. 2008. P68 RNA helicase (DDX5) alters activity of *cis*- and *trans*-acting factors of the alternative splicing of H-Ras. *PLoS ONE* 3: e2926.
3. Vickers, T.A. and Crooke, S.T. 2014. Antisense oligonucleotides capable of promoting specific target mRNA reduction via competing RNase H1-dependent and independent mechanisms. *PLoS ONE* 9: e108625.
4. Kokolo, M. and Bach-Elias, M. 2017. Downregulation of p68 RNA helicase (DDX5) activates a survival pathway involving mTOR and MDM2 signals. *Folia Biol.* 63: 52-59.
5. Han, B., et al. 2018. FOXC1-induced non-canonical WNT5A-MMP7 signaling regulates invasiveness in triple-negative breast cancer. *Oncogene* 37: 1399-1408.

## RESEARCH USE

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