SANTA CRUZ BIOTECHNOLOGY, INC.

RNase HII-B siRNA (h): sc-76410

BACKGROUND

RNase HII is a heterotrimeric enzyme complex responsible for the degradation of RNA found in RNA:DNA hybrids and is composed of one catalytic subunit and two non-catalytic subunits. RNase HII-B (ribonuclease H2, subunit B), also known as RNASEH2B, DLEU8, AGS2, FLJ11712 or Aicardi-Goutieres syndrome 2 protein, is one of the non-catalytic subunits of the RNase HII complex. While ubiquitously expressed, RNase HII-B localizes to the nucleus and is 312 amino acids long. Multiple natural transcript variants exist for the RNase HII-B gene. RNase HII-B is likely involved in the removal of RNA primers of lagging strand Okazaki fragments during DNA replication. Defects in the gene encoding RNase HII-B, which maps to human chromosome 13q14.3, are the cause of Aicardi-Goutieres syndrome type 2 (AGS2), an autosomal recessive neurological disorder characterized by leukodystrophy, cerebral atrophy, intracranial calcifications and chronic cerebrospinal fluid (CSF) lymphocytosis. Patients affected by AGS2 have severe neurological dysfunctions and often die in early childhood.

REFERENCES

1. Jeong, H.S., et al. 2004. RNase H2 of *Saccharomyces cerevisiae* is a complex of three proteins. Nucleic Acids Res. 32: 407-414.
2. Crow, Y.J., et al. 2006. Mutations in genes encoding ribonuclease H2 subunits cause Aicardi-Goutières syndrome and mimic congenital viral brain infection. Nat. Genet. 38: 910-916.
3. Rice, G., et al. 2007. Clinical and molecular phenotype of Aicardi-Goutieres syndrome. Am. J. Hum. Genet. 81: 713-725.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610326. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Cerritelli, S.M. and Crouch, R.J. 2009. Ribonuclease H: the enzymes in eukaryotes. FEBS J. 276: 1494-1505.

CHROMOSOMAL LOCATION

Genetic locus: RNASEH2B (human) mapping to 13q14.3.

PRODUCT

RNase HII-B 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RNase HII-B shRNA Plasmid (h): sc-76410-SH and RNase HII-B shRNA (h) Lentiviral Particles: sc-76410-V as alternate gene silencing products.

For independent verification of RNase HII-B (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-76410A, sc-76410B and sc-76410C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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

RNase HII-B siRNA (h) is recommended for the inhibition of RNase HII-B 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RNase HII-B gene expression knockdown using RT-PCR Primer: RNase HII-B (h)-PR: sc-76410-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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