SANTA CRUZ BIOTECHNOLOGY, INC.

APOBEC1 siRNA (m): sc-41183

BACKGROUND

Post-transcriptional editing of apolipoprotein B (apoB) mRNA is regulated by APOBEC1 (also designated human (or rat) small intestinal apolipoprotein B mRNA editing protein, HEPR, or REPR) in hepatic cells to achieve a steady state proportion of edited and unedited RNA molecules. APOBEC1 has conserved histidine and cysteine residues, that are identified as a Zn^{2+} binding motif in other cytidine deaminases. APOBEC1 is predominantly expressed in the adult small intestine but is also found in the stomach, colon and testis. APOBEC1 exists as a dimer and shows structural homology to some known mammalian and bacteriophage deoxycytidylate deaminases which exist as homopolymers. APOBEC1 may be involved in other aspects of RNA metabolism, independent of its role as an apoB RNA-specific cytidine deaminase.

REFERENCES

1. Hadjiagapiou, C., et al. 1994. Molecular cloning of a human small intestinal apolipoprotein B mRNA editing protein. Nucleic Acids Res. 22: 1874-1879.
2. Lau, P.P., et al. 1994. Dimeric structure of a human apolipoprotein B mRNA editing protein and cloning and chromosomal localization of its gene. Proc. Natl. Acad. Sci. USA 91: 8522-8526.
3. Fujino, T., et al. 1998. Human apolipoprotein B RNA editing deaminase gene (APOBEC1). Genomics 47: 266-275.
4. Anant, S., et al. 2000. An AU-rich sequence element (UUUN[A/U]U) downstream of the edited C in apolipoprotein B mRNA is a high-affinity binding site for APOBEC1: binding of APOBEC1 to this motif in the 3' untranslated region of c-Myc increases mRNA stability. Mol. Cell. Biol. 20: 1982-1992.
5. Yang, Y., et al. 2000. Induction of cytidine to uridine editing on cytoplasmic apolipoprotein B mRNA by overexpressing APOBEC1. J. Biol. Chem. 275: 22663-22669.

CHROMOSOMAL LOCATION

Genetic locus: Apobec1 (mouse) mapping to 6 F1.

PRODUCT

APOBEC1 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 APOBEC1 shRNA Plasmid (m): sc-41183-SH and APOBEC1 shRNA (m) Lentiviral Particles: sc-41183-V as alternate gene silencing products.

For independent verification of APOBEC1 (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-41183A, sc-41183B and sc-41183C.

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.

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

APOBEC1 siRNA (m) is recommended for the inhibition of APOBEC1 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

APOBEC1 (E-2): sc-166508 is recommended as a control antibody for monitoring of APOBEC1 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 APOBEC1 gene expression knockdown using RT-PCR Primer: APOBEC1 (m)-PR: sc-41183-PR (20 µl, 470 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.