SANTA CRUZ BIOTECHNOLOGY, INC.

APOBEC3B siRNA (h): sc-72515

BACKGROUND

APOBEC (apolipoprotein B mRNA editing enzyme, catalytic) proteins inhibit retroviruses by deaminating cytosine residues of viral RNA and DNA. The seven APOBEC3 genes or pseudogenes are found in a cluster thought to result from gene duplication on chromosome 22q13.1. APOBEC3 proteins are thought to be RNA editing enzymes and have roles in cell growth. APOBEC3B, also known as phorbolin-1-related protein or phorbolin-2/3, is a 382 amino acid protein belonging to the cytidine and deoxycytidylate deaminase family. APOBEC3B lacks cytidine deaminase activity on RNA molecules, but has been shown to bind to apoB and AU-rich RNAs. APOBEC3B forms a homodimer and interacts with APOBEC3G. APOBEC3B is expressed at at moderate levels in heart, testis, thymus, prostate, ovary, spleen and peripheral blood leukocytes.

REFERENCES

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3. Yu, Q., et al. 2004. APOBEC3B and APOBEC3C are potent inhibitors of simian immunodeficiency virus replication. J. Biol. Chem. 279: 53379-53386.
4. Rose, K.M., et al. 2005. Regulated production and anti-HIV type 1 activities of cytidine deaminases APOBEC3B, 3F, and 3G. AIDS Res. Hum. Retroviruses 21: 611-619.
5. Stenglein, M.D. and Harris, R.S. 2006. APOBEC3B and APOBEC3F inhibit L1 retrotransposition by a DNA deamination-independent mechanism. J. Biol. Chem. 281: 16837-16841.
6. Hakata, Y. and Landau, N.R. 2006. Reversed functional organization of mouse and human APOBEC3 cytidine deaminase domains. J. Biol. Chem. 281: 36624-36631.
7. Bonvin, M. and Greeve, J. 2007. Effects of point mutations in the cytidine deaminase domains of APOBEC3B on replication and hypermutation of hepatitis B virus in vitro. J. Gen. Virol. 88: 3270-3274.
8. Kidd, J.M., et al. 2007. Population stratification of a common APOBEC gene deletion polymorphism. PLoS Genet. 3: e63.

CHROMOSOMAL LOCATION

Genetic locus: APOBEC3B (human) mapping to 22q13.1.

PRODUCT

APOBEC3B 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 APOBEC3B shRNA Plasmid (h): sc-72515-SH and APOBEC3B shRNA (h) Lentiviral Particles: sc-72515-V as alternate gene silencing products.

For independent verification of APOBEC3B (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-72515A, sc-72515B and sc-72515C.

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

APOBEC3B siRNA (h) is recommended for the inhibition of APOBEC3B 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 APOBEC3B gene expression knockdown using RT-PCR Primer: APOBEC3B (h)-PR: sc-72515-PR (20 µl, 499 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jia, Q.P., et al. 2019. Upregulation of MTA1 expression by human papillomavirus infection promotes CDDP resistance in cervical cancer cells via modulation of NFκB/APOBEC3B cascade. Cancer Chemother. Pharmacol. 83: 625-637.

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.