SANTA CRUZ BIOTECHNOLOGY, INC.

APOBEC3A siRNA (h): sc-72514

BACKGROUND

APOBEC3A (apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3A), also known as ARP3 or PHRBN is a 199 amino acid protein that belongs to the cytidine deaminase family. Expressed in keratinocytes, as well as in peripherical leukocytes, APOBEC3A may be implicated in cell growth and cell cycle control. The gene encoding APOBEC3A is one of seven related genes which map to a cluster on chromosome 22 and are thought to play a role in tumor transformation and metastasis, as well as in host-associated antiviral activity. Chromosome 22 houses over 500 genes, some of which are involved in Phelan-McDermid syndrome, schizophrenia and neurofibromatosis type 2.

REFERENCES

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2. Mariani, R., et al. 2003. Species-specific exclusion of APOBEC3G from HIV-1 virions by Vif. Cell 114: 21-31.
3. Wedekind, J.E., et al. 2003. Messenger RNA editing in mammals: new members of the APOBEC family seeking roles in the family business. Trends Genet. 19: 207-216.
4. Bogerd, H.P., et al. 2006. APOBEC3A and APOBEC3B are potent inhibitors of LTR-retrotransposon function in human cells. Nucleic Acids Res. 34: 89-95.
5. Goila-Gaur, R., et al. 2007. Targeting APOBEC3A to the viral nucleoprotein complex confers antiviral activity. Retrovirology 4: 61.
6. Marin, M., et al. 2008. Human immunodeficiency virus type 1 Vif functionally interacts with diverse APOBEC3 cytidine deaminases and moves with them between cytoplasmic sites of mRNA metabolism. J. Virol. 82: 987-998.
7. Vartanian, J.P., et al. 2008. Evidence for editing of human papillomavirus DNA by APOBEC3 in benign and precancerous lesions. Science 320: 230-233.
8. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 607109. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: APOBEC3A (human) mapping to 22q13.1.

PRODUCT

APOBEC3A 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 APOBEC3A shRNA Plasmid (h): sc-72514-SH and APOBEC3A shRNA (h) Lentiviral Particles: sc-72514-V as alternate gene silencing products.

For independent verification of APOBEC3A (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-72514A, sc-72514B and sc-72514C.

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

APOBEC3A siRNA (h) is recommended for the inhibition of APOBEC3A 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 APOBEC3A gene expression knockdown using RT-PCR Primer: APOBEC3A (h)-PR: sc-72514-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. Mishra, M. and Kowluru, R.A. 2019. DNA methylation—a potential source of mitochondria DNA base mismatch in the development of diabetic retinopathy. Mol. Neurobiol. 56: 88-101.
2. Courant, F., et al. 2022. Modulation of DNA methylation/demethylation reactions induced by nutraceuticals and pollutants of exposome can promote a C > T mutation in the breast cancer predisposing gene PALB2. Epigenomes 6: 32.

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.