SANTA CRUZ BIOTECHNOLOGY, INC.

KILLIN siRNA (h): sc-270305

BACKGROUND

KILLIN, also known as KLLN, is a 178 amino acid nuclear protein that has affinity for both double- and single-stranded DNA. Through the mediation of p53-induced apoptosis, KILLIN has the ability to inhibit DNA synthesis and S phase arrest coupled to apoptosis. The gene that encodes KILLIN consists of more than 4,000 bases and maps to human chromosome 10q23.31. Spanning nearly 135 million base pairs, chromosome 10 makes up approximately 4.5% of total DNA in cells and encodes nearly 1,200 genes. Defects in some of the genes that map to chromosome 10 are associated with Charcot-Marie-Tooth disease, Jackson-Weiss syndrome, Usher syndrome, nonsyndromatic deafness, Wolman's syndrome, Cowden syndrome, multiple endocrine neoplasia type 2 and porphyria.

REFERENCES

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2. Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. Am. J. Hum. Genet. 81: 756-767.
3. Cho, M.Y., et al. 2008. First report of ovarian dysgerminoma in Cowden syndrome with germline PTEN mutation and PTEN-related 10q loss of tumor heterozygosity. Am. J. Surg. Pathol. 32: 1258-1264.
4. Yin, Y., et al. 2008. PTEN: a new guardian of the genome. Oncogene 27: 5443-5453.
5. Cho, Y.J., et al. 2008. Killin is a p53-regulated nuclear inhibitor of DNA synthesis. Proc. Natl. Acad. Sci. USA 105: 5396-5401.
6. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612105. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Laugel, V., et al. 2010. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. Hum. Mutat. 31: 113-126.
8. Bennett, K.L., et al. 2010. Germline epigenetic regulation of KILLIN in Cowden and Cowden-like syndrome. JAMA 304: 2724-2731.

CHROMOSOMAL LOCATION

Genetic locus: KLLN (human) mapping to 10q23.31.

PRODUCT

KILLIN 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 KILLIN shRNA Plasmid (h): sc-270305-SH and KILLIN shRNA (h) Lentiviral Particles: sc-270305-V as alternate gene silencing products.

For independent verification of KILLIN (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-270305A, sc-270305B and sc-270305C.

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

KILLIN siRNA (h) is recommended for the inhibition of KILLIN 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 KILLIN gene expression knockdown using RT-PCR Primer: KILLIN (h)-PR: sc-270305-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. Hu, K. and Liang, M. 2017. Upregulated microRNA-224 promotes ovarian cancer cell proliferation by targeting KLLN. In Vitro Cell. Dev. Biol. Anim. 53: 149-156.
2. Gao, L., et al. 2021. circAMOTL1L suppresses renal cell carcinoma growth by modulating the miR-92a-2-5p/KLLN pathway. Oxid. Med. Cell. Longev. 2021: 9970272.

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.