SANTA CRUZ BIOTECHNOLOGY, INC.

ZKSCAN3 siRNA (h): sc-95093

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. ZKSCAN3 (zinc finger protein with KRAB and SCAN domains 3), also known as ZNF306/309 or ZNF47 homolog, is a 583 amino acid protein that may be involved in the regulation of transcription. Belonging to the Krüppel C_2H_2-type zinc-finger protein family, ZKSCAN3 contains seven C_2H_2-type zinc fingers, one KRAB domain and one SCAN box domain. Overexpression of ZKSCAN3 has been found in colorectal tumor samples, with higher levels of expression found in invasive tumor types compared with non-invasive tumors. This evidence also coincides with the fact that the chromosomal region of the gene encoding ZKSCAN3 is found to be amplified in colorectal cancer. Knockdown of the mRNA encoding ZKSCAN3 results in impaired anchorage-independent growth and orthotopic tumor growth in two independent colon cancer cell lines.

REFERENCES

1. Constantinou-Deltas, C.D., et al. 1992. The identification and characterization of KRAB-domain-containing zinc finger proteins. Genomics 12: 581-589.
2. Margolin, J.F., et al. 1994. Krüppel-associated boxes are potent transcriptional repression domains. Proc. Natl. Acad. Sci. USA 91: 4509-4513.
3. Petroni, D., et al. 1998. Computer sequence analysis of human highly conserved zinc finger modules. DNA Seq. 9: 163-169.
4. Sander, T.L., et al. 2003. The SCAN domain defines a large family of zinc finger transcription factors. Gene 310: 29-38.

CHROMOSOMAL LOCATION

Genetic locus: ZKSCAN3 (human) mapping to 6p22.1.

PRODUCT

ZKSCAN3 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 ZKSCAN3 shRNA Plasmid (h): sc-95093-SH and ZKSCAN3 shRNA (h) Lentiviral Particles: sc-95093-V as alternate gene silencing products.

For independent verification of ZKSCAN3 (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-95093A, sc-95093B and sc-95093C.

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

ZKSCAN3 siRNA (h) is recommended for the inhibition of ZKSCAN3 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.

GENE EXPRESSION MONITORING

ZKSCAN3 (A-10): sc-515285 is recommended as a control antibody for monitoring of ZKSCAN3 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 ZKSCAN3 gene expression knockdown using RT-PCR Primer: ZKSCAN3 (h)-PR: sc-95093-PR (20 µl, 547 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kawahara, T., et al. 2016. ZKSCAN3 promotes bladder cancer cell proliferation, migration, and invasion. Oncotarget 7: 53599-53610.
2. Lee, S., et al. 2018. ZKSCAN3 upregulation and its poor clinical outcome in uterine cervical cancer. Int. J. Mol. Sci. 19: 2859.
3. Kawahara, T., et al. 2020. Impact of vasectomy on the development and progression of prostate cancer: preclinical evidence. Cancers 12: 2295.
4. Cho, Y.E., et al. 2021. NOP53 suppresses autophagy through ZKSCAN3-dependent and -independent pathways. Int. J. Mol. Sci. 22: 9318.

RESEARCH USE

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