SANTA CRUZ BIOTECHNOLOGY, INC.

KLF6 siRNA (h): sc-38021

BACKGROUND

The Krüppel zinc finger transcription factor was initially identified in *Drosophila* as a segmentation gene. The mammalian family of Krüppel-type zinc finger transcription factors comprise a conserved family of DNA-binding proteins that are important in developmental regulation. The Krüppel-like factor 6 (KLF6) protein is a nuclear DNA-binding protein. KLF6 reduces cell proliferation by upregulating p21 in a p53-independent manner. KLF6 is also known as transcription factor ZF9, B cell derived 1 (BCD1), and core promoter element-binding protein (COPEB). KLF6 is predominantly expressed in the placenta but is also present in spleen, thymus, prostate, testis, small intestine and colon. In placenta, KLF6, KLF4 and pregnancy glycoprotein are co-expressed in the same cell types of placenta villi and membranes. The gene encoding human KLF6 maps to chromosome 10p15.1, and it is mutated in a subset of human prostate cancer.

REFERENCES

1. Schuh, R., et al. 1986. A conserved family of nuclear proteins containing structural elements of the finger protein encoded by Krüppel, a *Drosophila* segmentation gene. Cell 47: 1025-1032.
2. Ruppert, J.M., et al. 1986. The GLI-Krüppel family of human genes. Mol. Cell. Biol. 8: 1025-1032.

CHROMOSOMAL LOCATION

Genetic locus: KLF6 (human) mapping to 10p15.1.

PRODUCT

KLF6 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 KLF6 shRNA Plasmid (h): sc-38021-SH and KLF6 shRNA (h) Lentiviral Particles: sc-38021-V as alternate gene silencing products.

For independent verification of KLF6 (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-38021A, sc-38021B and sc-38021C.

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

KLF6 siRNA (h) is recommended for the inhibition of KLF6 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

KLF6 (E-10): sc-365633 is recommended as a control antibody for monitoring of KLF6 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KLF6 gene expression knockdown using RT-PCR Primer: KLF6 (h)-PR: sc-38021-PR (20 µl, 555 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Workman, A., et al. 2012. Cellular transcription factors induced in trigeminal ganglia during dexamethasone-induced reactivation from latency stimulate bovine herpesvirus 1 productive infection and certain viral promoters. J. Virol. 86: 2459-2473.
2. Escalona-Nandez, I., et al. 2015. The activation of peroxisome proliferator-activated receptor γ is regulated by Krüppel-like transcription factors 6 & 9 under steatotic conditions. Biochem. Biophys. Res. Commun. 458: 751-756.
3. Raninga, P.V., et al. 2016. Targeted knockdown of DJ-1 induces multiple myeloma cell death via KLF6 upregulation. Apoptosis 21: 1422-1437.
4. Gallardo-Vara, E., et al. 2016. Transcription factor KLF6 upregulates expression of metalloprotease MMP14 and subsequent release of soluble endoglin during vascular injury. Angiogenesis 19: 155-171.
5. Yang, F., et al. 2018. MicroRNA-543 promotes the proliferation and invasion of clear cell renal cell carcinoma cells by targeting Krüppel-like factor 6. Biomed. Pharmacother. 97: 616-623.
6. Wen, L., et al. 2021. The blood flow-klf6a-tagln2 axis drives vessel pruning in zebrafish by regulating endothelial cell rearrangement and Actin cytoskeleton dynamics. PLoS Genet. 17: e1009690.

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.