

ZBTB4 siRNA (h): sc-93593

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. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. ZBTB4 (zinc finger and BTB domain containing 4), also known as KAISO-L1 (KAISO-like zinc finger protein 1), is a 1,013 amino acid nuclear protein that is involved in transcriptional regulation. ZBTB4 contains one BTB (POZ) domain, six C₂H₂-type zinc fingers and is phosphorylated and downregulated by HIPK2. The gene encoding ZBTB4 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Evans, R.M., et al. 1988. Zinc fingers: guilt by association. *Cell* 52: 1-3.
2. Rosenfeld, R., et al. 1993. Zinc fingers: conserved properties that can distinguish between spurious and actual DNA-binding motifs. *J. Biomol. Struct. Dyn.* 11: 557-570.
3. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 7: 143-150.
4. Filion, G.J., et al. 2006. A family of human zinc finger proteins that bind methylated DNA and repress transcription. *Mol. Cell. Biol.* 26: 169-181.
5. Weber, A., et al. 2008. ZBTB4 represses transcription of P21CIP1 and controls the cellular response to p53 activation. *EMBO J.* 27: 1563-1574.

CHROMOSOMAL LOCATION

Genetic locus: ZBTB4 (human) mapping to 17p13.1.

PRODUCT

ZBTB4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZBTB4 shRNA Plasmid (h): sc-93593-SH and ZBTB4 shRNA (h) Lentiviral Particles: sc-93593-V as alternate gene silencing products.

For independent verification of ZBTB4 (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-93593A, sc-93593B and sc-93593C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ZBTB4 siRNA (h) is recommended for the inhibition of ZBTB4 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 μ M in 66 μ l. 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

ZBTB4 (A-7): sc-514883 is recommended as a control antibody for monitoring of ZBTB4 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 ZBTB4 gene expression knockdown using RT-PCR Primer: ZBTB4 (h)-PR: sc-93593-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yu, Y., et al. 2018. Tumor suppressive ZBTB4 inhibits cell growth by regulating cell cycle progression and apoptosis in Ewing sarcoma. *Biomed. Pharmacother.* 100: 108-115.
2. Fan, H., et al. 2019. MicroRNA-301b-3p accelerates the growth of gastric cancer cells by targeting zinc finger and BTB domain containing 4. *Pathol. Res. Pract.* 215: 152667.

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.