SANTA CRUZ BIOTECHNOLOGY, INC.

BTEB2 siRNA (h): sc-37718

BACKGROUND

Members of the C_2H_2 zinc finger family bind GC-rich motifs widely distributed in gene promoters, resulting in distinct activation or repression of transcriptional activities. In addition to Sp1, Sp2, Sp3 and Sp4, the basic transcription element binding proteins-1 and -2 (BTEB1 and BTEB2, respectively), belong to this family of transcriptional regulators. BTEB2 binds the GC-box of DNA and is expressed in fetal aorta. BTEB2 is a target for Egr-1. Expression of BTEB2 is activated by mitogen-activated protein kinase pathways. BTEB2 expression is induced in the neointima in response to vascular injury and is involved in phenotypic modulation of vascular smooth muscle cells in response to mitogen stimulation through Egr-1.

REFERENCES

1. Kikuchi, Y., et al. 1996. Purification and characterization of the DNA-binding domain of BTEB, a GC-box-binding transcription factor, expressed in *Escherichia coli*. J. Biochem. 119: 309-313.
2. Wang, Y., et al. 1997. Cell-type expression, immunolocalization, and deoxyribonucleic acid-binding activity of basic transcription element binding transcription factor, an Sp-related family member, in porcine endometrium of pregnancy. Biol. Reprod. 57: 707-714.
3. Lania, L., et al. 1997. Transcriptional regulation by the Sp family proteins. Int. J. Biochem. Cell Biol. 29: 1313-1323.
4. Kawai-Kowase, K., et al. 1999. Transcriptional activation of the zinc finger transcription factor BTEB2 gene by Egr-1 through mitogen-activated protein kinase pathways in vascular smooth muscle cells. Circ. Res. 85: 787-795.

CHROMOSOMAL LOCATION

Genetic locus: KLF5 (human) mapping to 13q22.1.

PRODUCT

BTEB2 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 BTEB2 shRNA Plasmid (h): sc-37718-SH and BTEB2 shRNA (h) Lentiviral Particles: sc-37718-V as alternate gene silencing products.

For independent verification of BTEB2 (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-37718A, sc-37718B and sc-37718C.

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

BTEB2 siRNA (h) is recommended for the inhibition of BTEB2 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

BTEB2 (G-7): sc-398470 is recommended as a control antibody for monitoring of BTEB2 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 BTEB2 gene expression knockdown using RT-PCR Primer: BTEB2 (h)-PR: sc-37718-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. Liu, Y., et al. 2020. Proteomic profiling and genome-wide mapping of O-GlcNAc chromatin-associated proteins reveal an O-GlcNAc-regulated genotoxic stress response. Nat. Commun. 11: 5898.
2. Schmidt, A., et al. 2022. Deciphering pro-angiogenic transcription factor profiles in hypoxic human endothelial cells by combined bioinformatics and *in vitro* modeling. Front. Cardiovasc. Med. 9: 877450.

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.