SANTA CRUZ BIOTECHNOLOGY, INC.

BFZB siRNA (h): sc-72649

BACKGROUND

BFZB (Basic FGF-repressed Zic-binding protein), also known as UQCC (ubiquinol-cytochrome c reductase complex chaperone CBP3 homolog), is a 299 amino acid protein that localizes to vesicles of the cytoplasm. With expression in the developing nervous system, ganglia of cranial nerves V, VII, VIII, IX and X, dorsal root ganglia, developing eye, brown fat and differentiating chondrocytes, BFZB may play a role in height determination and early development. A single nucleotide polymorphism (SNP) in the gene encoding BFZB is highly correlated with a functional SNP in the neighboring GDF-5 gene, which is associated with an increased risk of osetoarthritis. The SNP in the gene encoding BFZB is also associated with increased height, explaining 0.3-0.5% of the variance in height in both males and females. There are four isoforms of BFZB which are produced as a result of alternative splicing events.

REFERENCES

1. Vetter, K., et al. 2001. Expression of a novel mouse gene "mbFZb" in distinct regions of the developing nervous system and the adult brain. Mech. Dev. 100: 123-125.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611797. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Imabayashi, H., et al. 2003. Redifferentiation of dedifferentiated chondrocytes and chondrogenesis of human bone marrow stromal cells via chondrosphere formation with expression profiling by large-scale cDNA analysis. Exp. Cell Res. 288: 35-50.
4. Goldring, M.B., et al. 2006. The control of chondrogenesis. J. Cell. Biochem. 97: 33-44.
5. Miyamoto, Y., et al. 2007. A functional polymorphism in the 5' UTR of GDF5 is associated with susceptibility to osteoarthritis. Nat. Genet. 39: 529-533.
6. Sanna, S., et al. 2008. Common variants in the GDF5-UQCC region are associated with variation in human height. Nat. Genet. 40: 198-203.
7. Weedon, M.N., et al. 2008. Genome-wide association analysis identifies 20 loci that influence adult height. Nat. Genet. 40: 575-583.

CHROMOSOMAL LOCATION

Genetic locus: UQCC (human) mapping to 20q11.22.

PRODUCT

BFZB 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 BFZB shRNA Plasmid (h): sc-72649-SH and BFZB shRNA (h) Lentiviral Particles: sc-72649-V as alternate gene silencing products.

For independent verification of BFZB (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-72649A, sc-72649B and sc-72649C.

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

BFZB siRNA (h) is recommended for the inhibition of BFZB 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 BFZB gene expression knockdown using RT-PCR Primer: BFZB (h)-PR: sc-72649-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. Gurgul, A., et al. 2018. Evaluation of changes arising in the pig mesenchymal stromal cells transcriptome following cryopreservation and Trichostatin A treatment. PLoS ONE 13: e0192147.

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.