SANTA CRUZ BIOTECHNOLOGY, INC.

# BHLHB4 siRNA (m): sc-141695

## BACKGROUND

BHLHB4 (basic helix-loop-helix domain containing, class B, 4), also known as BETA4, is a 225 amino acid protein that contains one basic helix-loop-helix (bHLH) domain, a motif that mediates protein dimerization and can bind to the E-box sequence of DNA. Localized to the nucleus, BHLHB4 is thought to function as a transcriptional repressor that may be required for the maintenance of neuronal and pancreatic cells. Addtionally, BHLHB4 may participate in the maturation of rod bipolar cells, suggesting an involvement in retinal development. The gene encoding BHLHB4 maps to human chromosome 20q13.33, which houses over 600 genes and comprises nearly 2% of the human genome.

## REFERENCES


1. McLellan, A.S., et al. 2002. Exhaustive identification of human class II basic helix-loop-helix proteins by virtual library screening. Gene Expr. Patterns 2: 329-335.
2. Bramblett, D.E., et al. 2002. BHLHB4 is a bHLH transcriptional regulator in pancreas and brain that marks the dimesencephalic boundary. Genomics 79: 402-412.
3. McLellan, A.S., et al. 2002. Exhaustive identification of human class II basic helix-loop-helix proteins by virtual library screening. Mech. Dev. 119: S285-S291.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609331. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Bramblett, D.E., et al. 2004. The transcription factor Bhlhb4 is required for rod bipolar cell maturation. Neuron 43: 779-793.
6. Pennesi, M.E., et al. 2006. A role for bHLH transcription factors in retinal degeneration and dysfunction. Adv. Exp. Med. Biol. 572: 155-161.
7. Pang, J.J., et al. 2007. Relative contributions of rod and cone bipolar cell inputs to AII amacrine cell light responses in the mouse retina. J. Physiol. 580: 397-410.


## CHROMOSOMAL LOCATION

Genetic locus: Bhlhe23 (mouse) mapping to 2 H4.

## PRODUCT

BHLHB4 siRNA (m) 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 BHLHB4 shRNA Plasmid (m): sc-141695-SH and BHLHB4 shRNA (m) Lentiviral Particles: sc-141695-V as alternate gene silencing products.

For independent verification of BHLHB4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141695A, sc-141695B and sc-141695C.

## RESEARCH USE

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

## 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

BHLHB4 siRNA (m) is recommended for the inhibition of BHLHB4 expression in mouse 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 BHLHB4 gene expression knockdown using RT-PCR Primer: BHLHB4 (m)-PR: sc-141695-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.