SANTA CRUZ BIOTECHNOLOGY, INC.

Bestrophin-4 siRNA (h): sc-72643

BACKGROUND

Bestrophin-4, also known as BEST4 or VMD2L2 (vitelliform macular dystrophy 20-like protein 2), is a 473 amino acid member of the Bestrophin family of proteins. Members of the Bestrophin family are transmembrane proteins that contain a high percentage of aromatic residues, a conserved RFP (Arg-Phe-Pro) motif and they function as anion channels. Bestrophin-4 acts as a calcium-sensitive chloride channel located in the cell membrane. It is believed that Bestrophin-4 also acts as a channel for other physiologically significant anions, such as bicarbonate. Bestrophin-4 is predominantly expressed in the colon, but can be found at low levels in testis, placenta, trachea, spinal chord, lung and retina.

REFERENCES

1. Marmorstein, A.D., et al. 2000. Bestrophin, the product of the Best vitelliform macular dystrophy gene (VMD2), localizes to the basolateral plasma membrane of the retinal pigment epithelium. Proc. Natl. Acad. Sci. USA 97: 12758-12763.
2. Stöhr, H., et al. 2002. Three novel human VMD2-like genes are members of the evolutionary highly conserved RFP-TM family. Eur. J. Hum. Genet. 10: 281-284.
3. Tsunenari, T., et al. 2003. Structure-function analysis of the Bestrophin family of anion channels. J. Biol. Chem. 278: 41114-41125.
4. Tsunenari, T., et al. 2006. Ca^{2+}-activated Cl^- current from human bestrophin-4 in excised membrane patches. J. Gen. Physiol. 127: 749-754.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 607336. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: BEST4 (human) mapping to 1p34.1.

PRODUCT

Bestrophin-4 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 Bestrophin-4 shRNA Plasmid (h): sc-72643-SH and Bestrophin-4 shRNA (h) Lentiviral Particles: sc-72643-V as alternate gene silencing products.

For independent verification of Bestrophin-4 (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-72643A, sc-72643B and sc-72643C.

PROTOCOLS

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

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

Bestrophin-4 siRNA (h) is recommended for the inhibition of Bestrophin-4 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 Bestrophin-4 gene expression knockdown using RT-PCR Primer: Bestrophin-4 (h)-PR: sc-72643-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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