SANTA CRUZ BIOTECHNOLOGY, INC.

Bestrophin-2 siRNA (h): sc-72639

BACKGROUND

Bestrophin-2, also known as BEST2 or VMD2L1 (Vitelliform macular dystrophy 2-like protein 1), is a 509 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-2 forms a calcium-sensitive chloride channel located within the cell membrane. It is also believed that Bestrophin-2 channels may also conduct other physiological anions such as bicarbonate. Bestrophin-2 is mainly expressed in retinal pigment epithelium and colon.

REFERENCES

1. 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.
2. Sun, H., et al. 2002. The vitelliform macular dystrophy protein defines a new family of chloride channels. Proc. Natl. Acad. Sci. USA 99: 4008-4013.
3. Tsunenari, T., et al. 2003. Structure-function analysis of the bestrophin family of anion channels. J. Biol. Chem. 278: 41114-41125.
4. Qu, Z., et al. 2004. Mouse bestrophin-2 is a bona fide Cl^- channel: identification of a residue important in anion binding and conduction. J. Gen. Physiol. 123: 327-340.
5. Qu, Z., et al. 2004. Determinants of anion permeation in the second transmembrane domain of the mouse bestrophin-2 chloride channel. J. Gen. Physiol. 124: 371-382.
6. Qu, Z., et al. 2006. The anion-selective pore of the bestrophins, a family of chloride channels associated with retinal degeneration. J. Neurosci. 26: 5411-5419.
7. Pifferi, S., et al. 2006. Bestrophin-2 is a candidate calcium-activated chloride channel involved in olfactory transduction. Proc. Natl. Acad. Sci. USA 103: 12929-12934.

CHROMOSOMAL LOCATION

Genetic locus: BEST2 (human) mapping to 19p13.2.

PRODUCT

Bestrophin-2 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-2 shRNA Plasmid (h): sc-72639-SH and Bestrophin-2 shRNA (h) Lentiviral Particles: sc-72639-V as alternate gene silencing products.

For independent verification of Bestrophin-2 (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-72639A, sc-72639B and sc-72639C.

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

Bestrophin-2 siRNA (h) is recommended for the inhibition of Bestrophin-2 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

Bestrophin-2 (D-7): sc-376351 is recommended as a control antibody for monitoring of Bestrophin-2 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 Bestrophin-2 gene expression knockdown using RT-PCR Primer: Bestrophin-2 (h)-PR: sc-72639-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.