SANTA CRUZ BIOTECHNOLOGY, INC.

VILIP-2 siRNA (h): sc-61790

BACKGROUND

The Visinin-like proteins, VILIP-1, VILIP-2 and VILIP-3, belong to a family of neuronal Ca^{2+} sensor (NCS) proteins conserved from yeast to human. The NCS family is divided into 5 subfamilies, consisting of about 40 family members in total. Group III represents the VILIP family and includes hippocalcin and neurocalcin-δ, along with VILIP-1-3. Visinin-like protein-2 (VILIP-2), also designated hippocalcin like-4 (HPCAL4), is a CaM-related Ca^{2+}-binding protein expressed in the neocortex and hippocampus. VILIP-2 is highly similar to human hippocalcin protein and hippocalcin like-1 protein as well as rat neural visinin-like Ca^{2+}-binding protein-type 1 and 2 proteins. VILIP-2 may be involved in the Ca^{2+}-dependent regulation of rhodopsin phosphorylation and may bind to two or three Ca^{2+} ions. The VILIP-2 protein contains four EF-hand domains. The gene which encodes for the VILIP-2 protein, HPCAL4, maps to chromosome 1p34.2 and the transcript of this gene has multiple polyadenylation sites.

REFERENCES

1. Kobayashi, M., Sakai, E., Furuta, Y. and Takamatsu, K. 1999. Isolation of two human cDNAs, HLP3 and HLP4, homologous to the neuron-specific calcium-binding protein genes. DNA Seq. 9: 171-176.
2. Wiemann, S., Weil, B., Wellenreuther, R., Gassenhuber, J., Glassl, S., Ansorge, W., Böcher, M., Blöcker, H., Bauersachs, S., Blum, H., Lauber, J., Düsterhöft, A., Beyer, A., Köhrer, K., Strack, N., Mewes, H.W., et al. 2001. novel complete protein coding human cDNAs. Genome Res. 11: 422-435.
3. Lautermilch, N.J., Few, A.P., Scheuer, T. and Catterall, W.A. 2005. Modulation of $Ca_V2.1$ channels by the neuronal calcium-binding protein visinin-like protein-2. J. Neurosci. 25: 7062-7070.
4. Few, A.P., Lautermilch, N.J., Westenbroek, R.E., Scheuer, T. and Catterall, W.A. 2005. Differential regulation of $Ca_V2.1$ channels by calcium-binding protein 1 and visinin-like protein-2 requires N-terminal myristoylation. J. Neurosci. 25: 7071-7080.

CHROMOSOMAL LOCATION

Genetic locus: HPCAL4 (human) mapping to 1p34.2.

PRODUCT

VILIP-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 VILIP-2 shRNA Plasmid (h): sc-61790-SH and VILIP-2 shRNA (h) Lentiviral Particles: sc-61790-V as alternate gene silencing products.

For independent verification of VILIP-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-61790A, sc-61790B and sc-61790C.

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

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

VILIP-2 (11B10): sc-135603 is recommended as a control antibody for monitoring of VILIP-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 VILIP-2 gene expression knockdown using RT-PCR Primer: VILIP-2 (h)-PR: sc-61790-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.