SANTA CRUZ BIOTECHNOLOGY, INC.

VILIP-3 siRNA (h): sc-94999

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. Members of NCS family are mainly expressed in retinal photoreceptors, neuroendocrine cells or neurons and primarily function to regulate gene expression, modulate neurotransmitter release, direct regulation of ion channels, control cyclic nucleotide metabolism, biosynthesize polyphosphoinositides and participate in phototransduction. The NCS family is divided into five 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, VILIP-2 and VILIP-3. Also known as Hippocalcin-like protein 1, VILIP-3 (Visinin-like protein 3) is a 193 amino acid protein that contains four EF-hand domians, which enable it to bind to two or three calcium ions. For this reason, it is likely that VILIP-3 is involved the the calcium-dependent regulation of rhodopsin phosphorylation.

REFERENCES

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3. Takamatsu, K., Kobayashi, M., Saitoh, S., Fujishiro, M. and Noguchi, T. 1994. Molecular cloning of human hippocalcin cDNA and chromosomal mapping of its gene. Biochem. Biophys. Res. Commun. 200: 606-611.
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5. De Castro, E., Nef, S., Fiumelli, H., Lenz, S.E., Kawamura, S. and Nef, P. 1995. Regulation of rhodopsin phosphorylation by a family of neuronal calcium sensors. Biochem. Biophys. Res. Commun. 216: 133-140.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600207. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Permyakov, S.E., Nazipova, A.A., Denesyuk, A.I., Bakunts, A.G., Zinchenko, D.V., Lipkin, V.M., Uversky, V.N. and Permyakov, E.A. 2007. Recoverin as a redox-sensitive protein. J. Proteome Res. 6: 1855-1863.

CHROMOSOMAL LOCATION

Genetic locus: HPCAL1 (human) mapping to 2p25.1.

PROTOCOLS

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

PRODUCT

VILIP-3 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-3 shRNA Plasmid (h): sc-94999-SH and VILIP-3 shRNA (h) Lentiviral Particles: sc-94999-V as alternate gene silencing products.

For independent verification of VILIP-3 (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-94999A, sc-94999B and sc-94999C.

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-3 siRNA (h) is recommended for the inhibition of VILIP-3 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 VILIP-3 gene expression knockdown using RT-PCR Primer: VILIP-3 (h)-PR: sc-94999-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. Zhang, D., Liu, X., Xu, X., Xu, J., Yi, Z., Shan, B. and Liu, B. 2019. HPCAL1 promotes glioblastoma proliferation via activation of Wnt/β-catenin signalling pathway. J. Cell. Mol. Med. 23: 3108-3117.

RESEARCH USE

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