

VILIP-1 siRNA (m): sc-155106

BACKGROUND

The VSNL1 gene to the short arm of chromosome 2 encodes VILIP-1 (visinin-like protein 1). VILIP-1 contains four EF-hands and a double-stranded RNA-binding domain and is a member of the neuronal calcium sensor family, which is included in the calcium-binding protein superfamily. VILIP-1 is expressed in the membrane, cytoplasm and cytoskeleton of the sympathetic and parasympathetic neurons throughout the brain, except for the caudate-putamen region. The rate of VILIP-1 expression decreases significantly with age. VILIP-1 associates with actin in the cytoskeleton, which may translocate VILIP-1 to the membrane. VILIP-1 binds the 3'-untranslated region of trkB double-stranded mRNA in a calcium dependent manner. VILIP-1 associates with G protein-receptor kinase 1 and inhibits its binding to the membrane. VILIP-1 is involved in membrane calcium signaling and may play a role in the sensitivity of G-protein cascades to cytosolic. Decreased amounts of VILIP-1 were found in Alzheimer disease brains, suggesting it may play a role in the disease.

REFERENCES

1. Cox, J.A., Durussel, I., Comte, M., Nef, S., Nef, P., Lenz, S.E. and Gundelfinger, E.D. 1994. Cation binding and conformational changes in VILIP and NCS-1, two neuron-specific calcium-binding proteins. *J. Biol. Chem.* 269: 32807-32813.
2. Polymeropoulos, M.H., Ide, S., Soares, M.B. and Lennon, G.G. 1995. Sequence characterization and genetic mapping of the human VSNL1 gene, a homologue of the rat visinin-like peptide RNVP1. *Genomics* 29: 273-275.
3. Lenz, S.E., Braunewell, K.H., Weise, C., Nedlina-Chittka, A. and Gundelfinger, E.D. 1996. The neuronal EF-hand Ca^{2+} -binding protein VILIP: interaction with cell membrane and Actin-based cytoskeleton. *Biochem. Biophys. Res. Commun.* 22: 1078-1083.
4. Mathisen, P.M., Johnson, J.M., Kawczak, J.A. and Tuohy, V.K. 1999. Visinin-like protein (VILIP) is a neuron-specific calcium-dependent double-stranded RNA-binding protein. *J. Biol. Chem.* 274: 31571-31576.
5. Paterlini, M., Revilla, V., Grant, A.L. and Wisden, W. 2000. Expression of the neuronal calcium sensor protein family in the rat brain. *Neuroscience* 99: 205-216.

CHROMOSOMAL LOCATION

Genetic locus: Vsnl1 (mouse) mapping to 12 A1.1.

PRODUCT

VILIP-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VILIP-1 shRNA Plasmid (m): sc-155106-SH and VILIP-1 shRNA (m) Lentiviral Particles: sc-155106-V as alternate gene silencing products.

For independent verification of VILIP-1 (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-155106A, sc-155106B and sc-155106C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

VILIP-1 siRNA (m) is recommended for the inhibition of VILIP-1 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 μ M in 66 μ l. 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-1 (2F1-E3): sc-293209 is recommended as a control antibody for monitoring of VILIP-1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-1 gene expression knockdown using RT-PCR Primer: VILIP-1 (m)-PR: sc-155106-PR (20 μ l, 425 bp). 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.

PROTOCOLS

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