SANTA CRUZ BIOTECHNOLOGY, INC.

VIPL siRNA (h): sc-94296

BACKGROUND

Lectin mannose-binding 1, also designated vesicular integral-membrane protein (VIP36), and lectin mannose-binding 2, also designated ERGIC-53, comprise a family of membrane bound, ubiquitously expressed proteins involved in the selective transport of newly synthesized glycoproteins from the endoplasmic reticulum to the ER-Golgi intermediate compartment. VIPL (VIP36-like protein), also known as LMAN2L (lectin, mannose-binding 2-like), is a 348 amino acid single-pass type I membrane protein that localizes to the endoplasmic reticulum and Golgi apparatus. Containing one L-type lectin-like domain, VIPL is highly expressed in skeletal muscle and kidney, and is found at intermediate levels in heart, liver and placenta, and low levels in brain, thymus, spleen, small intestine and lung. VIPL is suggested to be involved in the regulation of export from the endoplasmic reticulum of a subset of glycoproteins. VIPL may function as a regulator of ERGIC-53. VIPL exists a two alternatively spliced isoforms.

REFERENCES

1. Schindler, R., et al. 1993. ERGIC-53, a membrane protein of the ER-Golgi intermediate compartment, carries an ER retention motif. Eur. J. Cell Biol. 61: 1-9.
2. Kappeler, F., et al. 1994. A dual role for COOH-terminal lysine residues in pre-Golgi retention and endocytosis of ERGIC-53. J. Biol. Chem. 269: 6279-6281.
3. Hauri, H.P., et al. 2002. Lectins and protein traffic early in the secretory pathway. Biochem. Soc. Symp. 69: 73-82.
4. Neve, E.P., et al. 2003. VIPL, a VIP36-like membrane protein with a putative function in the export of glycoproteins from the endoplasmic reticulum. Exp. Cell Res. 288: 70-83.
5. Nufer, O., et al. 2003. Profile-based data base scanning for animal L-type lectins and characterization of VIPL, a novel VIP36-like endoplasmic reticulum protein. J. Biol. Chem. 278: 15886-15896.
6. Hara-Kuge, S., et al. 2004. The binding of VIP36 and α-amylase in the secretory vesicles via high-mannose type glycans. Glycobiology 14: 739-744.
7. Kamiya, Y., et al. 2005. Sugar-binding properties of VIP36, an intracellular animal lectin operating as a cargo receptor. J. Biol. Chem. 280: 37178-37182.

CHROMOSOMAL LOCATION

Genetic locus: LMAN2L (human) mapping to 2q11.2.

PRODUCT

VIPL 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 VIPL shRNA Plasmid (h): sc-94296-SH and VIPL shRNA (h) Lentiviral Particles: sc-94296-V as alternate gene silencing products.

For independent verification of VIPL (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-94296A, sc-94296B and sc-94296C.

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

VIPL siRNA (h) is recommended for the inhibition of VIPL 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

VIPL (A-4): sc-514840 is recommended as a control antibody for monitoring of VIPL 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 VIPL gene expression knockdown using RT-PCR Primer: VIPL (h)-PR: sc-94296-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.

PROTOCOLS

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