

VLDLR siRNA (h): sc-36822

BACKGROUND

VLDLR (very low density lipoprotein receptor) is a member of the LDL receptor gene family, which includes LDL receptor, LRP, Megalin, VLDLR and ApoER2. The LDL receptor family is characterized by a cluster of cysteine-rich class A repeats, epidermal growth factor (EGF)-like repeats, YWTD repeats and an O-linked sugar domain. VLDLR is expressed in brain, heart, skeletal muscle and adipose tissue. It associates with RAP (receptor associated protein) during receptor folding, and RAP facilitates the secretion of the extracellular region of VLDLR. VLDLR is thought to mediate the interaction of extracellular Reelin and cytosolic mDab1 (mammalian disabled protein), which activates a tyrosine kinase. This pathway regulates the migration of neurons along the radial glial fiber network during brain development.

REFERENCES

1. Trommsdorff, M., et al. 1999. Reeler/Disabled-like disruption of neuronal migration in knockout mice lacking the VLDL receptor and ApoE receptor 2. *Cell* 97: 689-701.
2. Mikhailenko, I., et al. 1999. Functional domains of the very low density lipoprotein receptor: molecular analysis of ligand binding and acid-dependent ligand dissociation mechanisms. *J. Cell Sci.* 112: 3269-3281.
3. Tiebel, O., et al. 1999. Mouse very low-density lipoprotein receptor (VLDLR): gene structure, tissue-specific expression and dietary and development regulation. *Atherosclerosis* 145: 239-251.
4. Savonen, R., et al. 1999. The carboxyl-terminal domain of receptor-associated protein facilitates proper folding and trafficking of the very low density lipoprotein receptor by interaction with the three amino-terminal ligand-binding repeats of the receptor. *J. Biol. Chem.* 274: 25877-25882.
5. Sato, A., et al. 1999. 39 kDa receptor-associated protein (RAP) facilitates secretion and ligand binding of extracellular region of very-low-density-lipoprotein receptor: implication for a distinct pathway from low-density-lipoprotein receptor. *Biochem. J.* 341: 377-383.
6. Hiesberger, T., et al. 1999. Direct binding of Reelin to VLDL receptor and ApoE receptor 2 induces tyrosine phosphorylation of disabled-1 and modulates tau phosphorylation. *Neuron* 24: 481-489.

CHROMOSOMAL LOCATION

Genetic locus: VLDLR (human) mapping to 9p24.2.

PRODUCT

VLDLR 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VLDLR shRNA Plasmid (h): sc-36822-SH and VLDLR shRNA (h) Lentiviral Particles: sc-36822-V as alternate gene silencing products.

For independent verification of VLDLR (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-36822A, sc-36822B and sc-36822C.

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

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

VLDLR (6A6): sc-18824 is recommended as a control antibody for monitoring of VLDLR 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 λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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 λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (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 VLDLR gene expression knockdown using RT-PCR Primer: VLDLR (h)-PR: sc-36822-PR (20 μ l, 477 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.