

LRP1B siRNA (h): sc-60968

BACKGROUND

Members of the LDL receptor gene family, including LDLR (low density lipoprotein receptor), LRP5 (low density lipoprotein related proteins), megalin (also designated GP330), VLDLR (very low density lipoprotein receptor) and ApoER2, mediate the endocytosis of extracellular ligands. LRP1B is a member of the LRP subfamily that regulates the endocytic trafficking of the transmembrane protein β -Amyloid precursor protein (APP). Proteolytic processing of APP produces Amyloid- β peptide (A β), a molecule that is involved in the pathogenesis of Alzheimer's disease. LRP1B also regulates the catabolism of the platelet derived growth factor (PDGF) β receptor, influencing the migration of smooth muscle cells, thereby implicating LRP1B in the development of atherosclerosis, a disease that affects the arterial blood vessel. LRP1B is also an important factor in the tumorigenesis of non-small cell lung cancer.

REFERENCES

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- Cam, J.A., et al. 2004. The low density lipoprotein receptor-related protein 1B retains β -Amyloid precursor protein at the cell surface and reduces Amyloid- β peptide production. *J. Biol. Chem.* 279: 29639-29646.
- Marschang, P., et al. 2004. Normal development and fertility of knockout mice lacking the tumor suppressor gene LRP1B suggest functional compensation by LRP1. *Mol. Cell. Biol.* 24: 3782-3793.
- Sonoda, I., et al. 2004. Frequent silencing of low density lipoprotein receptor-related protein 1B (LRP1B) expression by genetic and epigenetic mechanisms in esophageal squamous cell carcinoma. *Cancer Res.* 64: 3741-3747.
- Tanaga, K., et al. 2004. LRP1B attenuates the migration of smooth muscle cells by reducing membrane localization of urokinase and PDGF receptors. *Arterioscler. Thromb. Vasc. Biol.* 24: 1422-1428.
- Pastrana, D.V., et al. 2005. LRP1B functions as a receptor for *Pseudomonas* exotoxin. *Biochim. Biophys. Acta* 1741: 234-239.
- Seki, N., et al. 2005. LRP1B is a negative modulator of increased migration activity of intimal smooth muscle cells from rabbit aortic plaques. *Biochem. Biophys. Res. Commun.* 331: 964-970.

CHROMOSOMAL LOCATION

Genetic locus: LRP1B (human) mapping to 2q22.1.

PRODUCT

LRP1B 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 LRP1B shRNA Plasmid (h): sc-60968-SH and LRP1B shRNA (h) Lentiviral Particles: sc-60968-V as alternate gene silencing products.

For independent verification of LRP1B (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-60968A, sc-60968B and sc-60968C.

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

LRP1B siRNA (h) is recommended for the inhibition of LRP1B 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

LRP1B (1642CT736.5.59): sc-517340 is recommended as a control antibody for monitoring of LRP1B 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 LRP1B gene expression knockdown using RT-PCR Primer: LRP1B (h)-PR: sc-60968-PR (20 μ l, 403 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.