SANTA CRUZ BIOTECHNOLOGY, INC.

LRP5 siRNA (h): sc-43900

BACKGROUND

Members of the LDL receptor gene family, including LDLR (low density lipoprotein receptor), LRPs (low density lipoprotein related proteins), megalin (also designated GP330), VLDLR (very low density lipoprotein receptor) and ApoER2, are characterized by a cluster of cysteine-rich class A repeats, epidermal growth factor (EGF)-like repeats, YWTD repeats and an O-linked sugar domain. Of the known family members, LRP5 is most closely related to LRP1. However, LRP5 has a unique organization of EGF and LDLR repeats compared to other LDLR family members and likely represents a new category in this family. LRP is expressed in rat tibia in areas of the bone that are involved in remodeling. LRP5 is a Wnt coreceptor that binds to Axin and regulates the canonical Wnt signaling pathway. LRP5 affects bone mass accrual during growth and mutations in LRP5 cause the autosomal recessive disorder osteoporosis-pseudo-glioma syndrome (OPPG). The gene which encodes LRP5 maps to human chromosome 11q13.2.

REFERENCES

1. Hey, P.J., et al. 1998. Cloning of a novel member of the low-density lipoprotein receptor family. Gene 216: 103-111.
2. 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.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: LRP5 (human) mapping to 11q13.2.

PRODUCT

LRP5 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 LRP5 shRNA Plasmid (h): sc-43900-SH and LRP5 shRNA (h) Lentiviral Particles: sc-43900-V as alternate gene silencing products.

For independent verification of LRP5 (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-43900A, sc-43900B and sc-43900C.

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

LRP5 siRNA (h) is recommended for the inhibition of LRP5 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

LRP5 (B-9): sc-390267 is recommended as a control antibody for monitoring of LRP5 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LRP5 gene expression knockdown using RT-PCR Primer: LRP5 (h)-PR: sc-43900-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. Wan, M., et al. 2011. LRP6 mediates cAMP generation by G protein-coupled receptors through regulating the membrane targeting of $G_{\alpha s}$. Sci. Signal. 4: ra15.
2. Svedlund, J., et al. 2014. The histone methyltransferase EZH2, an oncogene common to benign and malignant parathyroid tumors. Endocr. Relat. Cancer 21: 231-239.
3. Ozeki, N., et al. 2016. Wnt16 signaling is required for IL-1β-induced matrix metalloproteinase-13-regulated proliferation of human stem cell-derived osteoblastic cells. Int. J. Mol. Sci. 17: 221.
4. Ozeki, N., et al. 2016. Bone morphogenetic protein-induced cell differentiation involves Atg7 and Wnt16 sequentially in human stem cell-derived osteoblastic cells. Exp. Cell Res. 347: 24-41.
5. Lv, Y.F., et al. 2016. Downregulation of tumor suppressing STF cDNA 3 promotes epithelial-mesenchymal transition and tumor metastasis of osteosarcoma by the Wnt/GSK-3β/β-catenin/Snail signaling pathway. Cancer Lett. 373: 164-173.

RESEARCH USE

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