SANTA CRUZ BIOTECHNOLOGY, INC.

LRP siRNA (m): sc-35825

BACKGROUND

Tumor cells that are insensitive to anticancer drugs often have a multidrug-resistant (MDR) phenotype. Proteins associated with this phenomenon are transport-associated proteins such as P-glycoprotein, multidrug resistance protein 1, lung resistance-related protein (LRP) and breast cancer resistance protein (BCRP). The LRP protein, which is identified as the major vault protein (MVP), is overexpressed in various multidrug-resistant cancer cell lines and clinical samples. The promoter of LRP is TATA-less; contains an inverted CCAAT-box and a Sp1 site located near a p53 binding motif. LRP has two alternative splice variants, which differ from each other within the 5'-leader. The long-LRP isoform is ubiquitously expressed and represents an almost constant portion of the total LRP mRNA in many different normal tissues. LRP is the major component of the multimeric ribonucleoprotein complexes, with several copies of an untranslated RNA, which has been shown to transport along cytoskeletal-based cellular tracks. In conclusion, LRP protein mediates drug resistance, perhaps via a transport process.

REFERENCES

1. Scheffer, G.L., et al. 1995. The drug resistance-related protein LRP is the human major vault protein. Nat. Med. 1: 578-582.
2. Herrmann, C., et al. 1999. Recombinant major vault protein is targeted to neuritic tips of PC12 cells. J. Cell Biol. 144: 1163-1172.
3. Scheffer, G.L., et al. 2000. Lung resistance-related protein/major vault protein and vaults in multidrug-resistant cancer. Curr. Opin. Oncol. 12: 550-556.
4. Lange, C., et al. 2000. Cloning and initial analysis of the human multidrug resistance-related MVP/LRP gene promoter. Biochem. Biophys. Res. Commun. 278: 125-133.
5. Takebayashi Y., et al. 2001. Expression of multidrug resistance associated transporters (MDR1, MRP1, LRP and BCRP) in porcine oocyte. Int. J. Mol. Med. 7: 397-400.
6. Holzmann K., et al. 2001. A small upstream open reading frame causes inhibition of human major vault protein expression from a ubiquitous mRNA splice variant. FEBS Lett. 494: 99-104.

CHROMOSOMAL LOCATION

Genetic locus: Mvp (mouse) mapping to 7 F3.

PRODUCT

LRP 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LRP shRNA Plasmid (m): sc-35825-SH and LRP shRNA (m) Lentiviral Particles: sc-35825-V as alternate gene silencing products.

For independent verification of LRP (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-35825A, sc-35825B and sc-35825C.

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

LRP siRNA (m) is recommended for the inhibition of LRP 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 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

LRP (1014): sc-23916 is recommended as a control antibody for monitoring of LRP 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 LRP gene expression knockdown using RT-PCR Primer: LRP (m)-PR: sc-35825-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.