SANTA CRUZ BIOTECHNOLOGY, INC.

DRR1 siRNA (h): sc-77912

BACKGROUND

The chromosomal band of 3p21 is frequently deleted in several types of tumors, suggesting that this region may harbor multiple tumor suppressor genes. The DRR1 (down-regulated in renal cell carcinoma 1) gene, also known as FAM107A and Protein TU3A, is located in this critical chromosomal region and encodes a 144 amino acid nuclear protein that contains a coiled region, suggesting that the protein may function to regulate gene transcription and signal transduction. With the exception of peripheral blood cells, DRR1 is expressed in all normal tissues, but shows significant loss of expression in renal cell carcinomas and frequent loss of expression in cervical, gastric, ovarian and nonsmall cell lung cancers. Transfection of DRR1 mRNA into cancer cell lines inhibits cell growth and proliferation, supporting the evidence that the gene functions as an important tumor suppressor. There are two isoforms of DRR1 that exist as a result of alternative splicing events.

REFERENCES

1. Yamato, T., et al. 1999. Isolation and characterization of the novel gene, TU3A, in a commonly deleted region on 3p14.3→p14.2 in renal cell carcinoma. Cytogenet. Cell Genet. 87: 291-295.
2. Lerman, M.I. and Minna, J.D. 2000. The 630-kb lung cancer homozygous deletion region on human chromosome 3p21.3: identification and evaluation of the resident candidate tumor suppressor genes. The International Lung Cancer Chromosome 3p21.3 Tumor Suppressor Gene Consortium. Cancer Res. 60: 6116-6133.
3. Wang, L., et al. 2000. Loss of expression of the DRR1 gene at chromosomal segment 3p21.1 in renal cell carcinoma. Genes Chromosomes Cancer 27: 1-10.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608295. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: FAM107A (human) mapping to 3p14.3.

PRODUCT

DRR1 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 DRR1 shRNA Plasmid (h): sc-77912-SH and DRR1 shRNA (h) Lentiviral Particles: sc-77912-V as alternate gene silencing products.

For independent verification of DRR1 (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-77912A, sc-77912B and sc-77912C.

PROTOCOLS

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

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

DRR1 siRNA (h) is recommended for the inhibition of DRR1 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

DDR1 (C-6): sc-374618 is recommended as a control antibody for monitoring of DRR1 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 DRR1 gene expression knockdown using RT-PCR Primer: DRR1 (h)-PR: sc-77912-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.