SANTA CRUZ BIOTECHNOLOGY, INC.

SPACRCAN siRNA (h): sc-78137

BACKGROUND

SPACRCAN (sialoprotein associated with cones and rods proteoglycan), also known as IMPG2 (interphotoreceptor matrix proteoglycan 2) or IPM200 (interphotoreceptor matrix proteoglycan of 200 kDa), is a 1,241 amino acid single-pass type I membrane protein that contains two EGF-like domains and two SEA domains. While involved in the organization of the interphotoreceptor matrix, SPACRCAN may participate in the maturation and maintenance of the light-sensitive photoreceptor outer segment. Defects in SPACRCAN are the cause of retinitis pigmentosa type 56 (RP56), a retinal dystrophy belonging to the group of pigmentary retinopathies. Patients typically have night vision blindness and loss of midperipheral visual field. As their condition progresses, patients lose their far peripheral visual field and eventually their central vision as well. Defects in IMPG2 are also the cause of maculopathy IMPG2-related (MACLP-IMPG2), a mild maculopathy characterized by full-field electroretinogram responses within normal limits, normal color vision, elevation of the photoreceptor layer in the foveal region and mild nuclear sclerosis.

REFERENCES

1. Kuehn, M.H. and Hageman, G.S. 1999. Molecular characterization and genomic mapping of human IPM 200, a second member of a novel family of proteoglycans. Mol. Cell Biol. Res. Commun. 2: 103-110.
2. Acharya, S., et al. 2000. SPACRCAN, a novel human interphotoreceptor matrix hyaluronan-binding proteoglycan synthesized by photoreceptors and pinealocytes. J. Biol. Chem. 275: 6945-6955.
3. Hollyfield, J.G., et al. 2001. Interphotoreceptor matrix in the fovea and peripheral retina of the primate Macaca mulatta: distribution and glycoforms of SPACR and SPACRCAN. Exp. Eye Res. 72: 49-61.
4. Kuehn, M.H., et al. 2001. Organization of the human IMPG2 gene and its evaluation as a candidate gene in age-related macular degeneration and other retinal degenerative disorders. Invest. Ophthalmol. Vis. Sci. 42: 3123-3129.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607056. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: IMPG2 (human) mapping to 3q12.3.

PRODUCT

SPACRCAN 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 SPACRCAN shRNA Plasmid (h): sc-78137-SH and SPACRCAN shRNA (h) Lentiviral Particles: sc-78137-V as alternate gene silencing products.

For independent verification of SPACRCAN (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-78137A, sc-78137B and sc-78137C.

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

SPACRCAN siRNA (h) is recommended for the inhibition of SPACRCAN 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SPACRCAN gene expression knockdown using RT-PCR Primer: SPACRCAN (h)-PR: sc-78137-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.