SANTA CRUZ BIOTECHNOLOGY, INC.

nephrocystin-5 siRNA (h): sc-72270

BACKGROUND

The nephrocystin proteins comprise a family of five enzymes that commonly interact with p130Cas, proline-rich tyrosine kinases, calmodulin and tensin, indicating that these proteins may participate in a common signaling pathway. Localized to the outer segments and primary cilia of photoreceptor cells, nephrocystin-5 is complexed with RPGR (retinitis pigmentosa GTPase regulator) and interacts directly with calmodulin. Nephrocystin-5 is thought to participate with RPGR in a pathway of ciliary function in the kidey and retina. Mutations in the gene encoding nephrocystin-5 are the primary cause of Senior-Loken syndrome 5, a juvenile disorder characterized by defects in the waste filtering system of the kidney, as well as retinal degradation.

REFERENCES

1. Online Mendalian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609237. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Otto, E.A., et al. 2005. Nephrocystin-5, a ciliary IQ domain protein, is mutated in Senior-Loken syndrome and interacts with RPGR and calmodulin. Nat. Genet. 37: 282-288.
3. Fliegauf, M., et al. 2006. Nephrocystin specifically localizes to the transition zone of renal and respiratory cilia and photoreceptor connecting cilia. J. Am. Soc. Nephrol. 17: 2424-2433.
4. Guyon, R., et al. 2007. Analysis of six candidate genes as potential modifiers of disease expression in canine XLPRA1, a model for human X-linked retinitis pigmentosa 3. Mol. Vis. 13: 1094-1105.
5. von Schnakenburg, C., et al. 2007. Nephrocystin and ciliary defects not only in the kidney? Pediatr. Nephrol. 22: 765-769.

CHROMOSOMAL LOCATION

Genetic locus: IQCB1 (human) mapping to 3q13.33.

PRODUCT

nephrocystin-5 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 nephrocystin-5 shRNA Plasmid (h): sc-72270-SH and nephrocystin-5 shRNA (h) Lentiviral Particles: sc-72270-V as alternate gene silencing products.

For independent verification of nephrocystin-5 (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-72270A, sc-72270B and sc-72270C.

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.

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

nephrocystin-5 siRNA (h) is recommended for the inhibition of nephrocystin-5 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 nephrocystin-5 gene expression knockdown using RT-PCR Primer: nephrocystin-5 (h)-PR: sc-72270-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.