SANTA CRUZ BIOTECHNOLOGY, INC.

rotatin siRNA (h): sc-76426

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The vertebrate body appears externally symmetric, yet the central nervous system and visceral organs are arranged asymmetrically. Recent research suggests that a novel 2,226 amino acid protein called rotatin, which is also known as RTTN, FLJ26356, DKFZp434G145 or FLJ39085, is involved in the early developmental genetic cascade governing left-right specification and axial rotation. Rotatin regulates expression of essential left-right specification genes including Nodal, Lefty and Pitx2 and likely plays a role in notochord development. Studies suggest that rotatin deficiency elicits a recessive lethal mutation called nt (no turning) which causes defects in left-right and axial patterning. Five rotatin isoforms are known to exist as a result of alternative splicing, and the gene encoding rotatin maps to human chromosome 18q22.2.

REFERENCES

1. Tsang, T.E., Kinder, S.J. and Tam, P.P. 1999. Experimental analysis of the emergence of left-right asymmetry of the body axis in early postimplantation mouse embryos. Cell. Mol. Biol. 45: 493-503.
2. Mercola, M. and Levin, M. 2001. Left-right asymmetry determination in vertebrates. Annu. Rev. Cell Dev. Biol. 17: 779-805.
3. Yost, H.J. 2001. Establishment of left-right asymmetry. Int. Rev. Cytol. 203: 357-381.
4. Faisst, A.M., Alvarez-Bolado, G., Treichel, D. and Gruss, P. 2002. Rotatin is a novel gene required for axial rotation and left-right specification in mouse embryos. Mech. Dev. 113: 15-28.
5. Chatterjee, B., Richards, K., Bucan, M. and Lo, C. 2007. Nt mutation causing laterality defects associated with deletion of rotatin. Mamm. Genome 18: 310-315.
6. Online Mendelian Inheritance in Man, OMIM™. 2007.Johns Hopkins University, Baltimore, MD. MIM Number: 610436. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: RTTN (human) mapping to 18q22.2.

PRODUCT

rotatin 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 rotatin shRNA Plasmid (h): sc-76426-SH and rotatin shRNA (h) Lentiviral Particles: sc-76426-V as alternate gene silencing products.

For independent verification of rotatin (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-76426A, sc-76426B and sc-76426C.

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

rotatin siRNA (h) is recommended for the inhibition of rotatin 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 rotatin gene expression knockdown using RT-PCR Primer: rotatin (h)-PR: sc-76426-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.