SANTA CRUZ BIOTECHNOLOGY, INC.

DNALI1 siRNA (h): sc-88537

BACKGROUND

Dyneins are multisubunit, high molecular weight ATPases that interact with microtubules to generate force by converting the chemical energy of ATP into the mechanical energy of movement. Cytoplasmic or axonemal dynein heavy, intermediate, light and light-intermediate chains are all components of minus end-directed motors; complexes that transport cellular cargo toward the central region of the cell. Axonemal dynein motors contain one to three non-identical heavy chains and cause a sliding of microtubules in the axonemes of cilia and flagella in a mechanism necessary for cilia to beat and propel the cell. DNALI1 (dynein, axonemal, light intermediate chain 1), also known as P28, is a 258 amino acid protein involved in flagellar motility. A member of the inner dynein arm light chain family, DNALI1 is widely expressed with highest expression found in testis, and is considered a potential candidate for immotile cilia syndrome (ICS).

REFERENCES

1. Vaughan, K.T., et al. 1996. Multiple mouse chromosomal loci for dynein-based motility. Genomics 36: 29-38.
2. Kastury, K., et al. 1997. Complementary deoxyribonucleic acid cloning and characterization of a putative human axonemal dynein light chain gene. J. Clin. Endocrinol. Metab. 82: 3047-3053.
3. Yagi, T. 2000. ADP-dependent microtubule translocation by flagellar inner-arm dyneins. Cell Struct. Funct. 25: 263-267.
4. Epstein, E., et al. 2000. Dynein light chain binding to a 3'-untranslated sequence mediates parathyroid hormone mRNA association with microtubules. J. Clin. Invest. 105: 505-512.
5. Tang, Q., et al. 2002. A novel transforming growth factor-β receptor-interacting protein that is also a light chain of the motor protein dynein. Mol. Biol. Cell 13: 4484-4496.
6. Wu, H. and King, S.M. 2003. Backbone dynamics of dynein light chains. Cell Motil. Cytoskeleton 54: 267-273.

CHROMOSOMAL LOCATION

Genetic locus: DNALI1 (human) mapping to 1p34.3.

PRODUCT

DNALI1 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 DNALI1 shRNA Plasmid (h): sc-88537-SH and DNALI1 shRNA (h) Lentiviral Particles: sc-88537-V as alternate gene silencing products.

For independent verification of DNALI1 (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-88537A, sc-88537B and sc-88537C.

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

DNALI1 siRNA (h) is recommended for the inhibition of DNALI1 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

DNALI1 (G-12): sc-514831 is recommended as a control antibody for monitoring of DNALI1 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 DNALI1 gene expression knockdown using RT-PCR Primer: DNALI1 (h)-PR: sc-88537-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.