SANTA CRUZ BIOTECHNOLOGY, INC.

DNAH10 siRNA (m): sc-143076

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; the complex transports cellular cargos towards 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. DNAH10 (dynein, axonemal, heavy chain 10), also known as KIAA2017 or FLJ38262, is a 4,471 amino acid member of the dynein heavy chain protein family. Expressed primarily in testis and trachea, DNAH10 contains sixteen LRR repeats and five TPR repeats. DNAH10 is the force generating protein of respiratory cilia.

REFERENCES

1. Maiti, A.K., et al. 2000. Identification, tissue specific expression, and chromosomal localisation of several human dynein heavy chain genes. Eur. J. Hum. Genet. 8: 923-932.
2. Carson, J.L., et al. 2002. Axonemal dynein expression in human fetal tracheal epithelium. Am. J. Physiol. Lung Cell. Mol. Physiol. 282: L421-L430.
3. Seetharam, R.N., et al. 2005. High speed sliding of axonemal microtubules produced by outer arm dynein. Cell Motil. Cytoskeleton 60: 96-103.
4. Lee, W.L., et al. 2005. The offloading model for dynein function: differential function of motor subunits. J. Cell Biol. 168: 201-207.
5. Pazour, G.J., et al. 2006. Identification of predicted human outer dynein arm genes: candidates for primary ciliary dyskinesia genes. J. Med. Genet. 43: 62-73.
6. Chasman, D.I., et al. 2009. Forty-three loci associated with plasma lipoprotein size, concentration, and cholesterol content in genome-wide analysis. PLoS Genet. 5: e1000730.

CHROMOSOMAL LOCATION

Genetic locus: Dnahc10 (mouse) mapping to 5 F.

PRODUCT

DNAH10 siRNA (m) is a target-specific 19-25 nt siRNA 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 DNAH10 shRNA Plasmid (m): sc-143076-SH and DNAH10 shRNA (m) Lentiviral Particles: sc-143076-V as alternate gene silencing products.

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

DNAH10 siRNA (m) is recommended for the inhibition of DNAH10 expression in mouse 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 DNAH10 gene expression knockdown using RT-PCR Primer: DNAH10 (m)-PR: sc-143076-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.