SANTA CRUZ BIOTECHNOLOGY, INC.

DNAH12 siRNA (h): sc-78218

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. DNAH12L (dynein, axonemal, heavy chain 12), also known as DNAHC12, DHC3, DLP12, DNHD2, HL-19, DNAH7L or DNAHC3, is a 3,092 amino acid protein of cilium axoneme that exists as 3 alternatively spliced isoforms. A member of the dynein heavy chain family, DNAH12L is involved in sperm flagellar assembly and is encoded by a gene located on human chromosome 3.

REFERENCES

1. Vaughan, K.T., et al. 1996. Multiple mouse chromosomal loci for dynein-based motility. Genomics 36: 29-38.
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3. Chapelin, C., et al. 1997. Isolation of several human axonemal dynein heavy chain genes: genomic structure of the catalytic site, phylogenetic analysis and chromosomal assignment. FEBS Lett. 412: 325-330.
4. Neesen, J., et al. 1997. Identification of dynein heavy chain genes expressed in human and mouse testis: chromosomal localization of an axonemal dynein gene. Gene 200: 193-202.
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. Driskell, O.J., et al. 2007. Dynein is required for receptor sorting and the morphogenesis of early endosomes. Nat. Cell Biol. 9: 113-120.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 603340. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: DNAH12 (human) mapping to 3p14.3.

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.

PRODUCT

DNAH12 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 DNAH12 shRNA Plasmid (h): sc-78218-SH and DNAH12 shRNA (h) Lentiviral Particles: sc-78218-V as alternate gene silencing products.

For independent verification of DNAH12 (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-78218A, sc-78218B and sc-78218C.

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

DNAH12 siRNA (h) is recommended for the inhibition of DNAH12 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 DNAH12 gene expression knockdown using RT-PCR Primer: DNAH12 (h)-PR: sc-78218-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.