SANTA CRUZ BIOTECHNOLOGY, INC.

DYNC2H1 siRNA (m): sc-143206

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 dynein is an approximately twelve subunit complex of two heavy chains, two intermediate chains to anchor dynein to its cargo, four smaller intermediate chains and several light chains. Cytoplasmic dynein performs functions necessary for cell survival such as organelle transport and centrosome assembly. DYNC2H1 (cytoplasmic dynein 2 heavy chain 1), also known as dynein heavy chain isotype 1B (DHC1B), ATD3 or DHC2, is a 4,307 amino acid member of the dynein heavy chain protein family. DYNC2H1 may function as a motor for intraflagellar retrograde transport and in cilia biogenesis, as well as play a role in transport between the edoplasmic reticulum and Golgi. Defects in the gene that encodes DYNC2H1 are the cause of asphyxiating thoracic dystrophy type 3 (ATD3) and rib-polydactyly syndrome type 3 (SRPS3).

REFERENCES

1. Vaisberg, E.A., et al. 1996. Mammalian cells express three distinct dynein heavy chains that are localized to different cytoplasmic organelles. J. Cell Biol. 133: 831-842.
2. Criswell, P.S., et al. 1996. A novel cytoplasmic dynein heavy chain: expression of DHC1b in mammalian ciliated epithelial cells. J. Cell Sci. 109: 1891-1898.
3. 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.
4. Kastury, K., et al. 1997. Chromosomal mapping of two members of the human dynein gene family to chromosome regions 7p15 and 11q13 near the deafness loci DFNA 5 and DFNA 11. Genomics 44: 362-364.
5. Koehler, M.R., et al. 1998. Chromosomal localization of the human cytoplasmic dynein heavy chain gene DNCH2 to 11q21→q22.1. Cytogenet. Cell Genet. 82: 123-125.
6. Mikami, A., et al. 2002. Molecular structure of cytoplasmic dynein 2 and its distribution in neuronal and ciliated cells. J. Cell Sci. 115: 4801-4808.

CHROMOSOMAL LOCATION

Genetic locus: Dync2h1 (mouse) mapping to 9 A1.

PRODUCT

DYNC2H1 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 DYNC2H1 shRNA Plasmid (m): sc-143206-SH and DYNC2H1 shRNA (m) Lentiviral Particles: sc-143206-V as alternate gene silencing products.

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

DYNC2H1 siRNA (m) is recommended for the inhibition of DYNC2H1 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 DYNC2H1 gene expression knockdown using RT-PCR Primer: DYNC2H1 (m)-PR: sc-143206-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.