

DNAH7 siRNA (h): sc-94382

BACKGROUND

Dyneins are multi-subunit, 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. Dynein complexes transport cellular cargos toward the central region of the cell. Containing one to three non-identical heavy chains, axonemal dynein motors cause a sliding of microtubules in the axonemes of cilia and flagella in a mechanism necessary for cilia movement and cell propulsion. DNAH7 (dynein, axonemal, heavy chain 7), also known as FLJ37196, KIAA0944 or MGC39580, is a 4,024 amino acid member of the dynein heavy chain protein family. Expressed in testis, brain and trachea, DNAH7 exists as four isoforms produced by alternative splicing events. DNAH7 is a force-generating protein of respiratory cilia and is up-regulated during ciliogenesis.

REFERENCES

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3. Carson, J.L., et al. 2002. Axonemal dynein expression in human fetal tracheal epithelium. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 282: L421-L430.
4. Zhang, Y.J., et al. 2002. Identification of dynein heavy chain 7 as an inner arm component of human cilia that is synthesized but not assembled in a case of primary ciliary dyskinesia. *J. Biol. Chem.* 277: 17906-17915.
5. Fliegauf, M., et al. 2005. Mislocalization of DNAH5 and DNAH9 in respiratory cells from patients with primary ciliary dyskinesia. *Am. J. Respir. Crit. Care Med.* 171: 1343-1349.
6. Seetharam, R.N., et al. 2005. High speed sliding of axonemal microtubules produced by outer arm dynein. *Cell Motil. Cytoskeleton* 60: 96-103.
7. Jin, W.H., et al. 2005. Human plasma proteome analysis by multidimensional chromatography prefractionation and linear ion trap mass spectrometry identification. *J. Proteome Res.* 4: 613-619.

CHROMOSOMAL LOCATION

Genetic locus: DNAH7 (human) mapping to 2q32.3.

PRODUCT

DNAH7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DNAH7 shRNA Plasmid (h): sc-94382-SH and DNAH7 shRNA (h) Lentiviral Particles: sc-94382-V as alternate gene silencing products.

For independent verification of DNAH7 (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-94382A, sc-94382B and sc-94382C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DNAH7 siRNA (h) is recommended for the inhibition of DNAH7 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 μ M in 66 μ l. 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 DNAH7 gene expression knockdown using RT-PCR Primer: DNAH7 (h)-PR: sc-94382-PR (20 μ l). 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.