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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

DYNC2LI1 siRNA (m): sc-143207

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 12 subunit complex of 2 heavy chains, 2 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. DYNC2LI1 (Dynein, cytoplasmic 2, light intermediate chain 1), also known as LIC3, D2LIC or CGI-60, is a 351 amino acid cytoplasmic protein belonging to the Dynein light intermediate chain family. DYNC2LI1 may function as a motor for intraflagellar retrograde transport and in cilia biogenesis. The cytoplasmic Dynein complex 2 may be composed of a DYNC2H1 homodimer and a number of DYNC2LI1 light intermediate chains. DYNC2LI1 exists as five alternatively spliced isoforms.

REFERENCES

1. Grissom, P.M., et al. 2002. Identification of a novel light intermediate chain (D2LIC) for mammalian cytoplasmic Dynein 2. *Mol. Biol. Cell* 13: 817-829.
2. Malikov, V., et al. 2004. Cytoplasmic Dynein nucleates microtubules to organize them into radial arrays *in vivo*. *Mol. Biol. Cell* 15: 2742-2749.
3. Mallik, R., et al. 2004. Cytoplasmic Dynein functions as a gear in response to load. *Nature* 427: 649-652.
4. Seetharam, R.N. and Satir, P. 2005. High speed sliding of axonemal microtubules produced by outer arm Dynein. *Cell Motil. Cytoskeleton* 60: 96-103.
5. McGrath, J.L. 2005. Dynein motility: four heads are better than two. *Curr. Biol.* 15: R970-R972.
6. Lee, W.L., et al. 2005. The offloading model for Dynein function: differential function of motor subunits. *J. Cell Biol.* 168: 201-207.

CHROMOSOMAL LOCATION

Genetic locus: Dync2li1 (mouse) mapping to 17 E4.

PRODUCT

DYNC2LI1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DYNC2LI1 shRNA Plasmid (m): sc-143207-SH and DYNC2LI1 shRNA (m) Lentiviral Particles: sc-143207-V as alternate gene silencing 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 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

DYNC2LI1 siRNA (m) is recommended for the inhibition of DYNC2LI1 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 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.

GENE EXPRESSION MONITORING

DYNC2LI1 (H-4): sc-376644 is recommended as a control antibody for monitoring of DYNC2LI1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 DYNC2LI1 gene expression knockdown using RT-PCR Primer: DYNC2LI1 (m)-PR: sc-143207-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.