SANTA CRUZ BIOTECHNOLOGY, INC.

KIF21A siRNA (h): sc-60886

BACKGROUND

The kinesin superfamily proteins (KIFs) are microtubule-dependent molecular motors that transport membranous organelles and protein complexes in a microtubule- and ATP-dependent manner. Cells use KIFs to tightly control the direction, destination, and speed of transportation of a variety of important functional molecules, including mRNA. KIF21A is a 1,674 amino acid protein that contains three characteristic kinesin domains: an N-terminal head motor domain, a coiled-coil stalk region and a C-terminal tail. KIF21A is expressed in all nervous system tissues. Missense mutations in in the KIF21A gene lead to congenital fibrosis of the extraocular muscles type 1 (CFEOM1). CFEOM1 refers to a group of congenital eye movement disorders characterized by non-progressive ophthalmoplegia that affects all of the extraocular muscles.

REFERENCES

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3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608283. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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6. Tiab, L., et al. 2004. Mutation analysis of KIF21A in congenital fibrosis of the extraocular muscles (CFEOM) patients. Ophthalmic Genet. 25: 241-246.
7. Yamada, K., et al. 2005. A novel KIF21A mutation in a patient with congenital fibrosis of the extraocular muscles and Marcus Gunn jaw-winking phenomenon. Arch. Ophthalmol. 123: 1254-1259.
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9. Zhang, X.Q., et al. 2006. Mutation p.Arg954Trp of KIF21A causes congenital fibrosis of the extraocular muscles in a Chinese family. Yi Chuan Xue Bao 33: 685-691.

CHROMOSOMAL LOCATION

Genetic locus: KIF21A (human) mapping to 12q12.

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

KIF21A 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 KIF21A shRNA Plasmid (h): sc-60886-SH and KIF21A shRNA (h) Lentiviral Particles: sc-60886-V as alternate gene silencing products.

For independent verification of KIF21A (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-60886A, sc-60886B and sc-60886C.

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

KIF21A siRNA (h) is recommended for the inhibition of KIF21A 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 KIF21A gene expression knockdown using RT-PCR Primer: KIF21A (h)-PR: sc-60886-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.