

KIF12 siRNA (h): sc-60880

BACKGROUND

Kinesin is a cytoskeletal motor protein involved in axonal transport and cell division. 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. KIFs are involved in neuronal function and development. Kinesin family member 12 (KIF12) is a kinesin-like 651-amino-acid protein which is involved in mitotically linked cytokinesis. KIF12 is required during mitosis for normal myosin II localization and during late anaphase and telophase for normal nuclear separation. The KIF12 gene consists of a KISc domain, a coiled-coil domain with an internal hinge region and a C-terminal tail domain. KIF12 mRNA is expressed in fetal liver, adult brain, pancreatic islet, kidney tumors, and uterine and pancreatic cancers.

REFERENCES

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- Mburu, P., et al. 2003. Defects in Whirlin, a PDZ domain molecule involved in stereocilia elongation, cause deafness in the whirler mouse and families with DFNB31. *Nat. Genet.* 34: 421-428.
- Lakshminanth, G.S., et al. 2004. A mitotic kinesin-like protein required for normal karyokinesis, myosin localization to the furrow, and cytokinesis in Dictyostelium. *Proc. Natl. Acad. Sci. USA* 101: 16519-16524.
- Mrug, M., et al. 2005. Kinesin family member 12 is a candidate polycystic kidney disease modifier in the cpk mouse. *J. Am. Soc. Nephrol.* 16: 905-916.
- Katoh, M. and Katoh, M. 2005. Characterization of KIF12 gene in silico. *Oncol. Rep.* 13: 367-370.

CHROMOSOMAL LOCATION

Genetic locus: KIF12 (human) mapping to 9q32.

PRODUCT

KIF12 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 KIF12 shRNA Plasmid (h): sc-60880-SH and KIF12 shRNA (h) Lentiviral Particles: sc-60880-V as alternate gene silencing products.

For independent verification of KIF12 (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-60880A, sc-60880B and sc-60880C.

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 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

KIF12 siRNA (h) is recommended for the inhibition of KIF12 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.

GENE EXPRESSION MONITORING

KIF12 (C-4): sc-376572 is recommended as a control antibody for monitoring of KIF12 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 KIF12 gene expression knockdown using RT-PCR Primer: KIF12 (h)-PR: sc-60880-PR (20 μ l, 575 bp). 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.