

# KIFC1 siRNA (h): sc-95157

## BACKGROUND

The kinesins constitute a large family of microtubule-dependent motor proteins, which are responsible for the distribution of numerous organelles, vesicles and macromolecular complexes throughout the cell. Individual kinesin members play crucial roles in cell division, intracellular transport and membrane trafficking events including endocytosis and transcytosis. KIFC1 (kinesin family member C1), also known as HSET or KNSL2 (kinesin-like protein 2), is a 673 amino acid protein that belongs to the kinesin-like family of proteins. KIFC1 localizes to the nucleus and contains a C-terminal kinesin-motor domain. Functioning as a minus-end directed microtubule-dependent motor, KIFC1 works together with NuMA and cytoplasmic Dynein to organize microtubule minus ends at spindle poles. HeLa cells deficient in KIFC1 exhibit multipolar mitotic spindles, suggesting that KIFC1 is essential for bipolar spindle formation.

## REFERENCES

- Hoyt, M.A., et al. 1993. Loss of function of *Saccharomyces cerevisiae* kinesin-related CIN8 and KIP1 is suppressed by KAR3 motor domain mutations. *Genetics* 135: 35-44.
- Ando, A., et al. 1994. Cloning of a new kinesin-related gene located at the centromeric end of the human MHC region. *Immunogenetics* 39: 194-200.
- Hamm-Alvarez, S.F. 1998. Molecular motors and their role in membrane traffic. *Adv. Drug Deliv. Rev.* 29: 229-242.
- Janitz, K., et al. 1999. Genomic organization of the HSET locus and the possible association of HLA-linked genes with immotile cilia syndrome (ICS). *Immunogenetics* 49: 644-652.

## CHROMOSOMAL LOCATION

Genetic locus: KIFC1 (human) mapping to 6p21.32.

## PRODUCT

KIFC1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KIFC1 shRNA Plasmid (h): sc-95157-SH and KIFC1 shRNA (h) Lentiviral Particles: sc-95157-V as alternate gene silencing products.

For independent verification of KIFC1 (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-95157A, sc-95157B and sc-95157C.

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

## APPLICATIONS

KIFC1 siRNA (h) is recommended for the inhibition of KIFC1 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  $\mu$ M in 66  $\mu$ 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

KIFC1 (M-63): sc-100947 is recommended as a control antibody for monitoring of KIFC1 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KIFC1 gene expression knockdown using RT-PCR Primer: KIFC1 (h)-PR: sc-95157-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Vukušić, K., et al. 2021. Microtubule-sliding modules based on kinesins EG5 and PRC1-dependent KIF4A drive human spindle elongation. *Dev. Cell* 56: 1253-1267.e10.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.