

# KIF2C siRNA (h): sc-105596

## BACKGROUND

Kinesin family member 2c (KIF2C), alternately known as mitotic centromere-associated kinesin (MCAK), is a member of the kinesin-like family of proteins. KIF2C is a cytoplasmic and nuclear protein, present throughout the cell cycle. KIF2C associates with the centromere early in prophase, and disassociates after telophase. KIF2C is abundant in thymus and testis, and present at lower levels in small intestine, the mucosal lining of the colon, and placenta. Human KIF2C maps to chromosome 1p34.1.

## REFERENCES

1. Kim, I.G., et al. 1997. Cloning and expression of human mitotic centromere-associated kinesin gene. *Biochim. Biophys. Acta* 1359: 181-186.
2. Maney, T., et al. 1998. Mitotic centromere-associated kinesin is important for anaphase chromosome segregation. *J. Cell Biol.* 3: 787-801.
3. Hunter, A.W., et al. 2003. The kinesin-related protein MCAK is a microtubule depolymerase that forms an ATP-hydrolyzing complex at microtubule ends. *Mol. Cell* 11: 445-457.
4. Kline-Smith, S.L., et al. 2004. Depletion of centromeric MCAK leads to chromosome congression and segregation defects due to improper kinetochore attachments. *Mol. Biol. Cell* 15: 1146-1159.
5. Moore, A.T., et al. 2005. MCAK associates with the tips of polymerizing microtubules. *J. Cell Biol.* 169: 391-397.
6. Manning, A.L., et al. 2007. The kinesin-13 proteins KIF2A, KIF2B, and KIF2C/MCAK have distinct roles during mitosis in human cells. *Mol. Biol. Cell* 18: 2970-2979.

## CHROMOSOMAL LOCATION

Genetic locus: KIF2C (human) mapping to 1p34.1.

## PRODUCT

KIF2C 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 KIF2C shRNA Plasmid (h): sc-105596-SH and KIF2C shRNA (h) Lentiviral Particles: sc-105596-V as alternate gene silencing products.

For independent verification of KIF2C (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-105596A, sc-105596B and sc-105596C.

## 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

KIF2C siRNA (h) is recommended for the inhibition of KIF2C 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

KIF2C (2488C3a): sc-81305 is recommended as a control antibody for monitoring of KIF2C 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KIF2C gene expression knockdown using RT-PCR Primer: KIF2C (h)-PR: sc-105596-PR (20  $\mu$ l, 584 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Pakala, S.B., et al. 2012. Signaling-dependent phosphorylation of mitotic centromere-associated kinesin regulates microtubule depolymerization and its centrosomal localization. *J. Biol. Chem.* 287: 40560-40569.

## 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.