SANTA CRUZ BIOTECHNOLOGY, INC.

KIF2A siRNA (m): sc-60885

BACKGROUND

Kinesin is a cytoskeletal motor protein involved in axonal transport and cell division. The kinesin superfamily proteins (KIFs) are motor proteins that transport vesicles important for axonal extension in developing neurons, such as macromolecules and membranous organelles, along microtubules. KIFs are involved in neuronal function and development. Kinesin heavy chain member 2A (KIF2A), also designated KNS2, is a microtubule-associated central type motor protein and belongs to the kinesin-like protein family. KIF2A is abundantly present in developing axons. The synthetic retinoid N-(4-hydroxyphenyl)-all-*trans*-retinamide HPR, a cancer chemopreventive agent *in vivo* and an apoptotic cell death inducer *in vitro,* regulates KIF2A.

REFERENCES

1. Debernardi, S., et al. 1997. Identification of a novel human kinesin-related gene (HK2) by the cDNA δ display technique. Genomics 42: 67-73.
2. Morfini, G., et al. 1997. Suppression of KIF2 in PC-12 cells alters the distribution of a growth cone nonsynaptic membrane receptor and inhibits neurite extension. J. Cell Biol. 138: 657-669.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602591. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Homma, N., et al. 2003. Kinesin superfamily protein 2A (KIF2A) functions in suppression of collateral branch extension. Cell 114: 229-239.
5. Hirokawa, N., et al. 2004. Kinesin superfamily proteins and their various functions and dynamics. Exp. Cell Res. 301: 50-59.

CHROMOSOMAL LOCATION

Genetic locus: Kif2a (mouse) mapping to 13 D2.1.

PRODUCT

KIF2A siRNA (m) 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 KIF2A shRNA Plasmid (m): sc-60885-SH and KIF2A shRNA (m) Lentiviral Particles: sc-60885-V as alternate gene silencing products.

For independent verification of KIF2A (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60885A, sc-60885B and sc-60885C.

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

KIF2A siRNA (m) is recommended for the inhibition of KIF2A 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 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.

GENE EXPRESSION MONITORING

KIF2A (D-7): sc-271471 is recommended as a control antibody for monitoring of KIF2A 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 KIF2A gene expression knockdown using RT-PCR Primer: KIF2A (m)-PR: sc-60885-PR (20 µl). 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.