SANTA CRUZ BIOTECHNOLOGY, INC.

KIF9 siRNA (h): sc-78310

BACKGROUND

Kinesin is a cytoskeletal motor protein involved in axonal transport and cell division. 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. KIF9 (kinesin family member 9) is a member of the kinesin-like protein family and is a 790 amino acid protein that exists as two isoforms. KIF9 contains one kinesin-motor domain and KIF9's expression is developmentally regulated in tissues including brain, kidney, spleen, lung and testis. KIF9 is involved in keeping the MTOC (microtubule organizing center) connected to the nucleus during interphase, and is thought to interact with Gem, an association which may connect KIF9 to the cytoskeleton. In addition, KIF9 may act as a plus-ended microtubule motor that may exist as a homodimer.

REFERENCES

1. Nakagawa, T., et al. 1997. Identification and classification of 16 new kinesin superfamily (KIF) proteins in mouse genome. Proc. Natl. Acad. Sci. USA 94: 9654-9659.
2. Piddini, E., et al. 2001. The Ras-like GTPase Gem is involved in cell shape remodelling and interacts with the novel kinesin-like protein KIF9. EMBO J. 20: 4076-4087.
3. Miki, H., et al. 2001. All kinesin superfamily protein, KIF, genes in mouse and human. Proc. Natl. Acad. Sci. USA 98: 7004-7011.
4. Miki, H., et al. 2003. Kinesin superfamily proteins (KIFs) in the mouse transcriptome. Genome Res. 13: 1455-1465.
5. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607910. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Takano, K., et al. 2007. NXF2 is involved in cytoplasmic mRNA dynamics through interactions with motor proteins. Nucleic Acids Res. 35: 2513-2521.

CHROMOSOMAL LOCATION

Genetic locus: KIF9 (human) mapping to 3p21.31.

PRODUCT

KIF9 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 KIF9 shRNA Plasmid (h): sc-78310-SH and KIF9 shRNA (h) Lentiviral Particles: sc-78310-V as alternate gene silencing products.

For independent verification of KIF9 (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-78310A, sc-78310B and sc-78310C.

RESEARCH USE

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

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

KIF9 siRNA (h) is recommended for the inhibition of KIF9 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.

GENE EXPRESSION MONITORING

KIF9 (4E9): sc-517075 is recommended as a control antibody for monitoring of KIF9 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 KIF9 gene expression knockdown using RT-PCR Primer: KIF9 (h)-PR: sc-78310-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.