SANTA CRUZ BIOTECHNOLOGY, INC.

KIFC3 siRNA (m): sc-146480

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. KIFC3 (kinesin family member C3) is an 833 amino acid minus end-directed and microtubule-dependent motor protein that contains one kinesin-motor domain and belongs to the kinesin superfamily. A cytoplasmic and peripheral membrane protein, KIFC3 is found in the zona adherens of confluent epithelial cells and in renal distal tubules and the loops of Henle. Encoded by a gene that maps to human chromosome 16q13, KIFC3 plays a role in maintaining the integrity of the zona adherens and apically targeted transport.

REFERENCES

1. Bost-Usinger, L., et al. 1997. Multiple kinesin family members expressed in teleost retina and RPE include a novel C-terminal kinesin. Exp. Eye Res. 64: 781-794.
2. Hoang, E.H., et al. 1998. Cloning of a novel C-terminal kinesin (KIFC3) that maps to human chromosome 16q13-q21 and thus is a candidate gene for Bardet-Biedl syndrome. Genomics 52: 219-222.
3. Hoang, E., et al. 1999. Characterization of a novel C-kinesin (KIFC3) abundantly expressed in vertebrate retina and RPE. Exp. Eye Res. 69: 57-68.
4. Noda, Y., et al. 2001. KIFC3, a microtubule minus end-directed motor for the apical transport of annexin XIIIb-associated Triton-insoluble membranes. J. Cell Biol. 155: 77-88.
5. Xu, Y., et al. 2002. Role of KIFC3 motor protein in Golgi positioning and integration. J. Cell Biol. 158: 293-303.
6. Roni, V., et al. 2007. Mapping of transcription start sites of human retina expressed genes. BMC Genomics 8: 42.
7. Meng, W., et al. 2008. Anchorage of microtubule minus ends to adherens junctions regulates epithelial cell-cell contacts. Cell 135: 948-959.
8. De, S., et al. 2009. Overexpression of kinesins mediates docetaxel resistance in breast cancer cells. Cancer Res. 69: 8035-8042.

CHROMOSOMAL LOCATION

Genetic locus: Kifc3 (mouse) mapping to 8 D1.

PRODUCT

KIFC3 siRNA (m) is a target-specific 19-25 nt siRNA 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 KIFC3 shRNA Plasmid (m): sc-146480-SH and KIFC3 shRNA (m) Lentiviral Particles: sc-146480-V as alternate gene silencing products.

For independent verification of KIFC3 (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-146480A and sc-146480B.

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

KIFC3 siRNA (m) is recommended for the inhibition of KIFC3 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

KIFC3 (D-9): sc-365494 is recommended as a control antibody for monitoring of KIFC3 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 KIFC3 gene expression knockdown using RT-PCR Primer: KIFC3 (m)-PR: sc-146480-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ju, J.Q., et al. 2024. Kinesin KIFC3 is essential for microtubule stability and cytokinesis in oocyte meiosis. Cell Commun. Signal. 22: 199.

RESEARCH USE

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