SANTA CRUZ BIOTECHNOLOGY, INC.

KIF20A siRNA (h): sc-91657

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. KIF20A (kinesin family member 20A), also known as Rabkinesin-6, RAB6KIFL (Rab6-interacting kinesin-like protein), GG10_2 or MKLP2 (mitotic kinesin-like protein 2), is a 890 amino acid protein that contains one kinesin-motor domain and belongs to the kinesin-like protein family. KIF20A locates to the Golgi apparatus and interacts with guanosine triphosphate (GTP)-bound forms of RAB 6. KIF20A may be responsible for the retrograde RAB 6 regulated transport of Golgi membranes and related vesicles along microtubules.

REFERENCES

1. Hill, E., et al. 2000. The Rab 6-binding kinesin, Rab6-KIFL, is required for cytokinesis. EMBO J. 19: 5711-5719.
2. Lai, F., et al. 2000. cDNA cloning, expression pattern, genomic structure and chromosomal location of RAB6KIFL, a human kinesin-like gene. Gene 248: 117-125.
3. Fontijn, R.D., et al. 2001. The human kinesin-like protein RB6K is under tight cell cycle control and is essential for cytokinesis. Mol. Cell. Biol. 21: 2944-2955.
4. Nagura, M., et al. 2003. The kinesin superfamily protein RAB6KIFL is not involved in the pathophysiology of Charcot-Marie-Tooth disease type 4C. Int. J. Mol. Med. 11: 45-47.

CHROMOSOMAL LOCATION

Genetic locus: KIF20A (human) mapping to 5q31.2.

PRODUCT

KIF20A 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 KIF20A shRNA Plasmid (h): sc-91657-SH and KIF20A shRNA (h) Lentiviral Particles: sc-91657-V as alternate gene silencing products.

For independent verification of KIF20A (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-91657A, sc-91657B and sc-91657C.

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

KIF20A siRNA (h) is recommended for the inhibition of KIF20A 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

KIF20A (D-3): sc-374508 is recommended as a control antibody for monitoring of KIF20A 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 KIF20A gene expression knockdown using RT-PCR Primer: KIF20A (h)-PR: sc-91657-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. Kawai, Y., et al. 2018. KIF20A expression as a prognostic indicator and its possible involvement in the proliferation of ovarian clear-cell carcinoma cells. Oncol. Rep. 40: 195-205.
2. Peng, R., et al. 2020. Identification of core genes involved in the metastasis of clear cell renal cell carcinoma. Cancer Manag. Res. 12: 13437-13449.
3. Vukušic, 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.