SANTA CRUZ BIOTECHNOLOGY, INC.

UKHC siRNA (m): sc-36778

BACKGROUND

The kinesin motor proteins include at least two forms of conventional kinesin encoded by different genes and designated as ubiquitous kinesin, which is expressed in all cells and tissues, or neuronal kinesin, which is expressed exclusively in neural cells. Kinesin is a microtubule associated protein comprised of three different structural domains. A considerable globular N-terminal domain regulates the hydrolysis of ATP and also microtubule binding while central coiled-coil domains promote heavy chain dimerization. Lastly, small globular C-terminal domains interact with kinesin light chains, membranous organelles and vesicles. Expression of ubiquitous kinesin heavy chain, also designated UKHC, is found subcellularly in areas of heavy vesicular trafficking such as the microtubule pathways of neural cells and also the Golgi of non-neural cell types.

REFERENCES

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3. Marks, D.L., et al. 1995. Association of kinesin with the Golgi apparatus in rat hepatocytes. J. Cell Sci. 107: 2417-2426.
4. Bi, G.Q., et al. 1997. Kinesin- and myosin-driven steps of vesicle recruitment for Ca^{2+}-regulated exocytosis. J. Cell Biol. 138: 999-1008.
5. DeLuca, J.G., et al. 2001. Purification and characterization of native conventional kinesin, HSET, and CENP-E from mitotic hela cells. J. Biol. Chem. 276: 28014-28021.
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7. Li, C., et al. 2006. A family-based association study of kinesin heavy chain member 2 gene (KIF2) and schizophrenia. Neurosci. Lett. 407: 151-155.
8. Glater, E.E., et al. 2006. Axonal transport of mitochondria requires milton to recruit kinesin heavy chain and is light chain independent. J. Cell Biol. 173: 545-557.

CHROMOSOMAL LOCATION

Genetic locus: Kif5b (mouse) mapping to 18 A1.

PRODUCT

UKHC 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 UKHC shRNA Plasmid (m): sc-36778-SH and UKHC shRNA (m) Lentiviral Particles: sc-36778-V as alternate gene silencing products.

For independent verification of UKHC (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-36778A, sc-36778B and sc-36778C.

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

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

UKHC (F-5): sc-133184 is recommended as a control antibody for monitoring of UKHC 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 UKHC gene expression knockdown using RT-PCR Primer: UKHC (m)-PR: sc-36778-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.