SANTA CRUZ BIOTECHNOLOGY, INC.

KIF13B siRNA (h): sc-77793

BACKGROUND

KIF13B (kinesin family member 13B) is also known as Kinesin-like protein GAKIN or GAKIN and is a 1,826 amino acid protein that is widely expressed in tissues, with highest expression in brain and kidney. KIF13B is localized to the cytoplasm, as well as to the cytoskeleton, and is thought to be a microtubule-dependent motor protein which is able to bind to a variety of proteins in order to traffic them to various locations throughout the cell. KIF13B belongs to the kinesin-like protein family and possesses three domains typical of the kinesin-like protein family, namely an N-terminal motor domain with an ATP-binding motif, an FHA domain which is known to bind diverse cargos and a large stalk domain involved in protein-protein binding. Additionally, KIF13B has a microtubule-interacting sequence which is known as the CAP-Gly domain at its C-terminus. The CAP-Gly domain is highly conserved domain among eukaryotes, and in humans, defects in the CAP-Gly domain are implicated in many diseases affecting the trafficking of vesicles, neuromuscular junctions and lysosome proliferation.

REFERENCES

1. Hanada, T., et al. 2000. GAKIN, a novel kinesin-like protein associates with the human homologue of the *Drosophila* discs large tumor suppressor in T lymphocytes. J. Biol. Chem. 275: 28774-28784.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607350. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Asaba, N., et al. 2003. Direct interaction with a kinesin-related motor mediates transport of mammalian discs large tumor suppressor homologue in epithelial cells. J. Biol. Chem. 278: 8395-8400.
4. Kanamarlapudi, V. 2005. Centaurin-α1 and KIF13B kinesin motor protein interaction in ARF6 signalling. Biochem. Soc. Trans. 33: 1279-1281.
5. Venkateswarlu, K., et al. 2005. Centaurin-α1 interacts directly with kinesin motor protein KIF13B. J. Cell Sci. 118: 2471-2484.
6. Horiguchi, K., et al. 2006. Transport of PIP3 by GAKIN, a kinesin-3 family protein, regulates neuronal cell polarity. J. Cell Biol. 174: 425-436.

CHROMOSOMAL LOCATION

Genetic locus: KIF13B (human) mapping to 8p12.

PRODUCT

KIF13B 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 KIF13B shRNA Plasmid (h): sc-77793-SH and KIF13B shRNA (h) Lentiviral Particles: sc-77793-V as alternate gene silencing products.

For independent verification of KIF13B (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-77793A, sc-77793B and sc-77793C.

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

KIF13B siRNA (h) is recommended for the inhibition of KIF13B 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

KIF13B (6E11): sc-517181 is recommended as a control antibody for monitoring of KIF13B 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KIF13B gene expression knockdown using RT-PCR Primer: KIF13B (h)-PR: sc-77793-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.